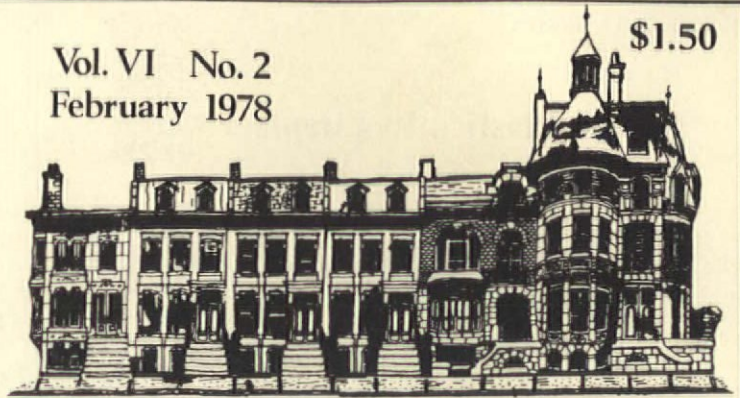


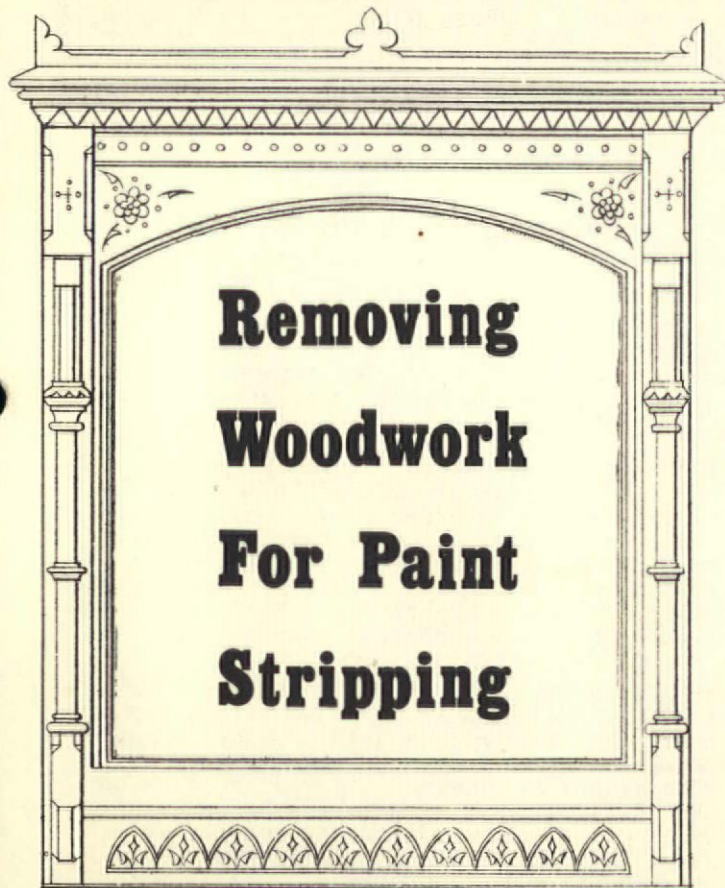
THE OLD-HOUSE JOURNAL

Vol. VI No. 2
February 1978

\$1.50



Restoration And Maintenance Techniques For The Antique House



Removing Woodwork For Paint Stripping

By Bruce R. Berney, Astoria, Ore.

SO BLISTERED AND CHECKED was the dark varnish stain that we knew our dining room wainscoting had to be stripped before refinishing. The woodwork was one of the highlights of the redecorating of our turn-of-century Queen Anne, and we wanted to do it right. The amount of woodwork in the room plus the intricacy of the mouldings made us reluctant to use chemical removers. The job would be too unpleasant and time-consuming.

HAVING LONG HEARD rave reviews of Louie's Furniture Stripping Co. in Portland, Ore., 100

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Coming Next Month

MAKING A WAINSCOT

miles distant from our town of Astoria, we inquired if they could strip our woodwork using their special chemical and steam process. We were delighted to learn that they could, and by being at the gate by opening time, we could pick up the cleaned wood the same afternoon—a special service for out-of-town customers.

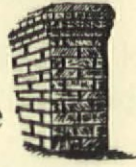
THE SPECTRE OF REMOVING all that woodwork without splintering the pieces—and putting it all back in the right places—was sobering at first. After some trial and error, however, we feel that the methods we developed are superior to the usual stripping practices.



AN EXAMINATION of the room revealed that the job was going to produce about 120 individual pieces of wood. This indicated that a numbering system would be a necessity. Any written numbers would be obliterated during the stripping process, so we invested \$7 for a set of numeral dies that would stamp an identifying number into the back of each piece of wood.

A ROUGH SKETCH was made of the room, giving a number to each side, top and trim piece around each door and window. This "map" of the woodwork was then taped to a window pane in the room so it wouldn't get lost in the shuffle.

(Continued on page 20)



Beware Plastics In Fireplace

To The Editor:

I RECENTLY HAD a spectacular chimney fire. (Fortunately, the flue was well-lined, so no damage resulted to the house.) Since I only burn well-seasoned hardwood, I was puzzled as to how the chimney could have accumulated so much combustible material. I finally figured it out—and wanted to share my discovery with your readers. It may save them a similar experience.

I USE A FRANKLIN STOVE to heat the kitchen ell in our Greek Revival farmhouse. So in addition to firewood, I have also been burning miscellaneous kitchen trash—cardboard, wrappings, etc.—to get the heat value. Among the kitchen trash has been various plastic wrappings, mainly polyethylene.

WHILE THE PLASTIC appeared to burn completely, some of the material was being vaporized before it burned—and was condensing up in my chimney. Combustible resins accumulated in the flue until it was all finally ignited by a stray spark. Moral: Keep plastics out of stoves and fireplaces!

R. A. Labine, Sr.
Somers, Conn.

More On Old-House Insurance

To The Editor:

I'D LIKE TO ADD SOME COMMENTS to your article on co-insurance (Dec. 1977). First, the cost of additional insurance seemed understated for many people. In rural Rhode Island, for example, an additional \$40,000 of coverage would cost \$204 from Allstate and \$284 from INA on a frame house.

SECOND, many insurance companies will not touch a building over 40 years old. Nationwide is an example in rural Rhode Island. Also, many insurance companies limit the type of coverage for an older home. INA would only give Class B coverage to our 1869 home. In addition, the location of an older home to fire stations is crucial.

THIRD, everyone can get a sample home replacement cost estimator, including multipliers and class locations, by writing to: INA Corp., 1600 Arch St., Philadelphia, PA 19101. Ask for the booklet called "The Underinsured Home."

FOURTH, personal liability protection on most policies is limited to \$25,000. For a small premium, this can be increased to \$300,000. Large jury awards of recent years make this increase a prudent consideration.

LAST, insurance costs vary wildly between companies. Be sure to shop around!

Richard Kutzleb
Narragansett, R.I.

THE OLD-HOUSE JOURNAL®

Published Monthly For People Who Love Old Houses

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Published by The Old-House Journal Corporation, 199 Berkeley Pl., Brooklyn, N.Y. 11217. Tel. (212) 636-4514. Subscriptions \$12/yr. in U.S. and Canada; \$20/yr. elsewhere. Printed at Royal Offset Co., 34 W. 15th St., NYC 10011. Contents of the Old-House Journal® are fully protected by copyright and must not be reproduced in any manner whatsoever without specific permission in writing from The Editor.

Re-anchoring A Plaster Wall

To The Editor:

WE HAD A PROBLEM with loose, spongy plaster on our parlor wall. We wanted to avoid replastering, both because of expense and our desire to save the handsome original decorative mouldings.

FORTUNATELY, we had to remove the plaster on the opposite side of the partition from the spongy section in order to do some electrical and plumbing work. And we saw immediately what the problem was: The lath were still firmly attached to the studs, but most of the plaster keys had broken off. So there was little to hold the plaster to the lath.

WE PUSHED THE SPONGY PLASTER tight against the lath, and held it in place with a 1 x 12 board that was in turn held by a brace anchored against the floor. We then removed all remaining broken and loose keys. Working on one 16-in. section at a time (the space between one set of studs) we thoroughly wet the old lath and plaster with water that we squirted from an old detergent bottle. (We added a drop of detergent to each bottle of water to increase the wetting power.)

USING A SMALL POINTING TROWEL, we troweled a wet plaster of paris mixture into the spaces between the old lath. The stuff had to be worked with the point of the trowel to get the best possible contact between the old and new plaster. We didn't have to be neat because excess plaster of paris hanging over the back of the lath is essential to the forming of new keys. We did this work three years ago—and the parlor wall is still as firm as new plaster.

Cynthia Friedman
San Francisco, Calif.

Catslide In North Carolina



Pocowood Place, as Don has named it, is now natural wood, finished with tung oil, and is a deep, rich orange. The Charleston green trim and slate veneer on the foundation set it off beautifully. (Photos by Frank Spears)

By Donald R. Richardson

I CAME TO Louisburg, North Carolina, in 1967 as Audiovisual Director and am now Head Librarian at Louisburg College, a junior college whose history begins in 1787. When I came, I was shown a brick duplex apartment for \$75.00 per month, another apartment in a former church building at \$50.00 per month including utilities, and this house for \$35.00 per month. The house was standing empty and looked quite desolate. I immediately said, "I'll take the house."

THE PERSON WHO SHOWED ME the places thought I was crazy, as I found out later. The exact date of the house is not known since it was originally a dependency, but it appears on town maps by the early 1900's. I wanted to buy the house, but the owners refused to sell.



The house was formerly painted a light yellow with a black roof. The front shutters and door were Charleston green.

I GAVE UP ON OWNING THE HOUSE and bought a new car. Soon after that the owners decided to sell and at a price that was little more than the lot alone would have cost. But for the next three years I had to adjust my finances quite severely while I was also paying for the car.

ABOUT THAT TIME, Jim Query, a friend, was looking at old houses in the area which had never been painted. He suggested removing the paint from the house and treating the wood (which was heart pine) with a preservative. If nothing else, a stain could be used and this would be better than painting it again since paint tends to peel.

WE BEGAN TALKING ABOUT HOW these buildings looked. Then, we experimented with paint removers, sanding, using heat, and scraping--all too slow. Then we began investigating the possibility of sandblasting it. Local sandblasters said, "It can't be done." A non-



The sloping roof of the house is called "catslide"--a southern term for saltbox.



One view of the living room (which doubles as the dining room, library, den, and additional bedroom) shows a grandfather's clock which was a gift from friends in England. Pillows, cushions and pair of duck pictures were all hand sewn by the owner's mother.



This is "the study" area of the living room. Most of the furnishings are gifts, discards, or were exceptionally inexpensive. The "draperies" are dark blue terry cloth, hand-glued and held back with antique metal holders found in an old attic.



Because this "Hoosier cabinet" has vertical tambour doors which roll back around and behind the cabinet, they do not crowd the tiny kitchen.

local sandblaster, too young to know better, said, "If it can be done, I can do it." We took off some boards, took them to him to experiment with, and they turned out beautifully. So he was hired.

IN THREE DAYS the house was sandblasted and stood glowing as the neighbors glowered. The neighbors first associated it with those "unpainted" shacks around the county. Now, after it has gained a measure of prestige, it is accepted by most of the neighbors. The one thing that caused them to begin to like the house was the reaction of their visitors who often commented on how much they liked it. One said: "It looks like a piece of furniture."

SO MANY PEOPLE have contributed to the development of Pocowood that I hesitate to mention names. However, Jim Query has been the greatest contributor of his time and talents. He and I helped with the sandblasting--which neither of us might have done alone. It was with his help that the windows were all removed, new putty put in, painted and replaced. His grandmother contributed the slate which veneers the foundation. Many individuals who have worked on the house have donated time or worked for ridiculously low wages. Many also did things for the first time, building fence walls from stone, etc.

MANY PEOPLE JUST FALL in love with the house and want to contribute something. A lady recently crocheted a bedspread for the house and another lady gave a desk. The desk will be used in the plantation office which was moved into the back yard. A friend visiting from England sent china which, she said, belonged in the house. These are just a few of things done to the house in which friends are involved. And the list is growing. ■■

Building An Old Fashioned Garden

By Stacy Jackson Goode

BEING FROM VIRGINIA, we were quite used to formal gardens, particularly those of Williamsburg. In fact, while my husband, George, was in graduate school, we lived in the restored area of Richmond, called Church Hill. We occupied a late Greek Revival townhouse, c. 1856. Using an existing brick walk and patio, we had our first chance at gardening with design. For four years we enjoyed a small boxwood garden in the Virginia tradition. Moving to Westerville, Ohio, forced us to leave our lovely English boxwoods but enabled us to bring our garden ideas to another section of the country.

IT WAS FORTUNATE that we found a large, brick house, c. 1855, in which to live. The previous owners were antique lovers and had spent almost two years restoring this house of typical, central Ohio German influence. All we had to do was move in and decorate, with only minor changes to the interior.

THE YARD WAS A DIFFERENT STORY. It was a sloping mess of rock and debris. Our lot is 50 ft. wide and 143 ft. long. The house has several angles so the back is approximately 75 ft. at its longest point. The sides and back yard are enclosed by 5 and 6 ft. stockade fencing. This fencing is commercially available at most lumber yards and some large department stores such as Sears. It is made from cedar which is usually left to weather but can be painted or stained. Left natural, this fencing will become gray and rustic in appearance and provides complete privacy as the upright slats fit flush and remind one of an old fort enclosure.



GEORGE DID MOST OF THE PHYSICAL PLAN as he was going to do the brick laying. We decided that we would use the north slope of the yard and try to have two levels, thereby creating better water drainage. In order to do this, we would have to have a retaining wall of some sort. While preferring the formality of brick, cut stone seemed appropriate for several reasons: availability, cost, ease of handling and compatibility with the rough look of stockade fencing.

AFTER WE HAD FINISHED last summer's work, we had used the following amount of material:

5 tons of cut stone (at \$30.00 a ton)
22 tons of sand (approx. \$80.00)
3,000 old sidewalk brick (\$85.00 per thousand)
18 tons of good topsoil (approx. \$55.00)
Scavenged stones and slate for steps
Old logs and railroad ties to create different levels
One extra section of stockade to screen off the children's play area.

FROM A VERY HELPFUL STONEMAN, we were instructed as to the construction of a dry stone wall. He advised us that this formation was preferable to mortared stones because the freeze-thaw of winter would crack mortar and dislodge the stones. He also helped by delivering stones of light to moderate weight (30-125 lbs.) as he knew that we planned to lift them ourselves. We chose a curved pattern wall for added stability as well as aesthetics.

LUCKILY, WE FOUND AN ENTERPRISING young man who dug up and delivered old sidewalk brick. Here a word of caution is needed concerning the type of brick to use. Paving bricks, the kind used for road surfaces, are much thicker than sidewalk bricks and usually have a glaze over the manufacturer's name stamped on both sides. Wall bricks, on the other hand, are available free if you haul them away from a construction site. Although the price is right, when laid in the ground for patio use, all bricks crumble under winter conditions. It is best to try and obtain old brick from existing sidewalks which have been sealed with a hard glaze (look for gray or purple hue.)

A NOTE ABOUT THE KIND of sand that we found most useful. Our first load of sand (approx. 11 tons) was of a very fine grade and called Mason's sand. Although costly, this sand was satisfactory if tapped firm before laying brick. Our second 11 tons was called #10 grit. It was coarse, less expensive and

worked well. Our only concern was that the coarser material had a tendency to scratch the brick; however, the scratches disappeared with the rain.

THE ACTUAL CONSTRUCTION of the garden went area by area. The first section completed was by the kitchen door. This gave us immediate use for sitting and eating. There was an old cement walk running from the kitchen to the front of the house. Rather than break it up, George enclosed it by brick borders and incorporated it as another design form. We looked at several brick patterns and decided on a two-over-two (basket-weave) pattern.

BUILDING THE STONE WALL was the next step. To our surprise, with a borrowed wheel barrow, much huffing and puffing (not to mention groans) we laid the wall in a weekend. At its greatest height, the wall is approximately 2 ft. This height continues through an arc (level with the horizon) only to taper to ground level when it meets the sloping east side of the yard.

AFTER THE WALL was formed, we used approximately 8 tons of the sand as a drainage base. On top of this, we filled in with the 18 tons of top soil. It helped that we had our supplies delivered as we used them. We were fortunate that it didn't rain while this work was in process. Rain makes topsoil clot and it must be dried out to haul with minimum trouble. If you end up with a mountain of topsoil, cover it with a sheet of heavy-duty plastic until ready for use. At the time of construction, the topsoil came to the top level of our wall. At this point, we were to learn that sand and topsoil will settle several inches, so extra topsoil would have to be added.

WE HAVE PLANTED English ivy around the wall top and will allow it to spill at random over the wall. This will cover a lot of the yard as the length of the wall measures approximately 15 ft. from the south fence to a set of steps. There is an arc up the east side to the fence on the north side of our property. This latter stone wall is divided into 9 ft. lengths by a set of steps.

FOR THE CONSTRUCTION of the circle, George planted a stake at mid-point. To this he tied a string. He measured the length he wanted for the inside diameter and marked out a circle. On this line, he placed a line of bricks. A circular walk was formed by adding four more bricks, side-by-side. Four arms project from the circle forming four corner gardens. The north-south arms extend almost to fence and wall respectively. The east arm leads to a step down and the upper yard. The west arm flows into a walk leading to a back door. At this door we have placed a rain barrel (formerly a whiskey barrel.) George shortened the corner down drain and cut a hole in the top of the barrel. Now we have rain water for garden use. If it overflows, we just pop the side cork, using buckets to catch the flow and then distribute the water away from the house. This has helped keep water away from the corner foundation and basement wall.



This view of the garden shows the old cement walk enclosed by brick borders in a basket-weave pattern.

APPROXIMATELY 18 in.-24 in. below the stone wall, George trenched and fitted a brick border. Behind this we mulched and planted our perennials. By studying the diagram, you will notice the set of steps leading from the main patio to the lower yard on the south side. The remaining wall stones were sunk in the ground and now form a small open-stone seating area under the shade of a large, old maple tree.

THE SOUTHEAST CORNER of the yard belongs to the children's swings and outside toys. We hung a section of stockade fencing at right angles to the south fence and have the area partially hidden from view. Above this play area, the soil was hard, rocky and eroded from poor water drainage. George constructed a free-form border from the play area to the stone patio. Behind this border we have transplanted lots of old ivy given to us by a generous neighbor. This summer, we hope to fill in this area with white dogwood and king white azalea. Along the fence, I have lemon balm, mint and daylilies growing freely. Another project is to order more brick to complete edging our brick pattern. We will then line our brick circle with small shrubs.

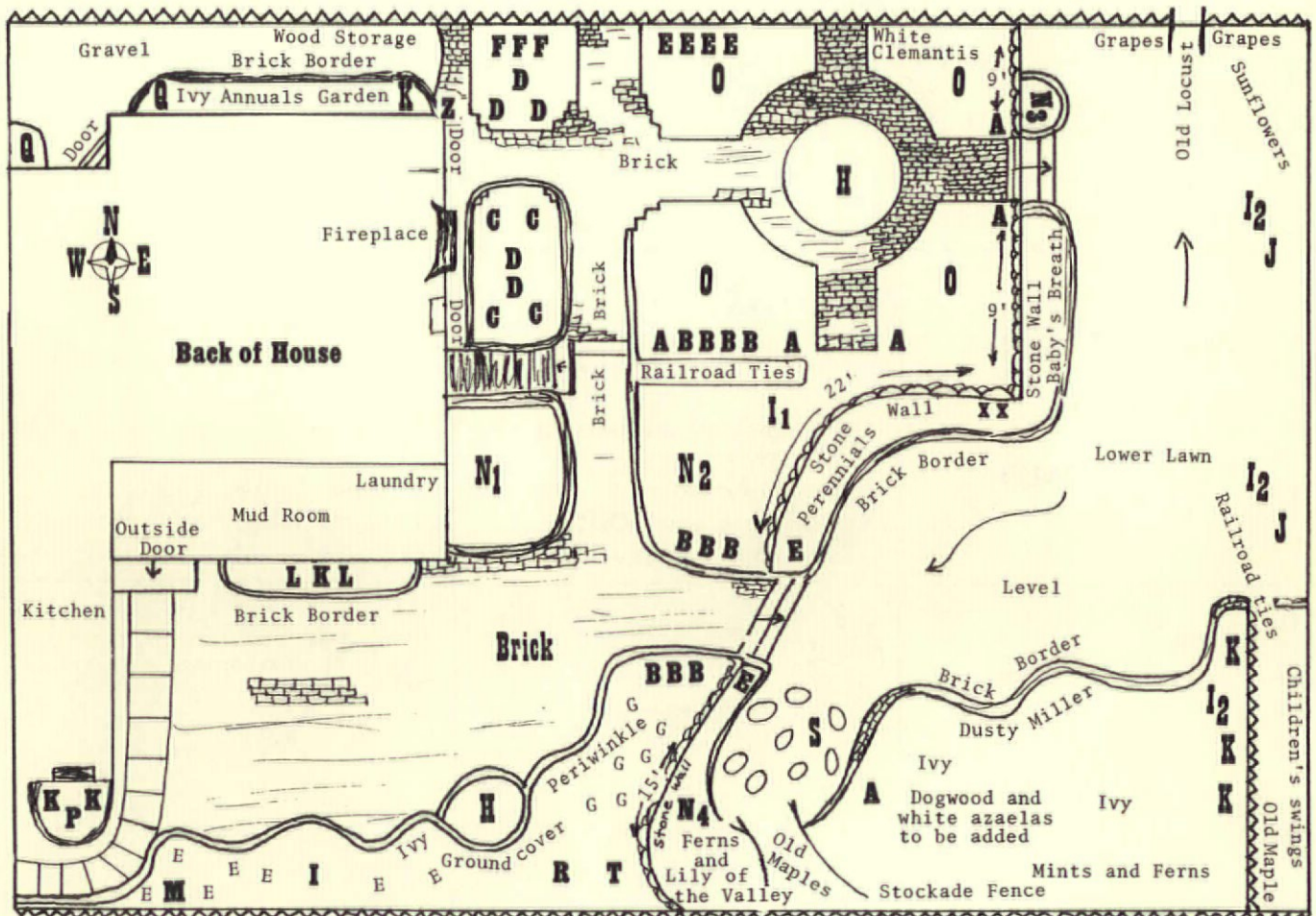
A WORD ABOUT GARDEN PLANTINGS. We talked to lots of people about the kinds of plants most acceptable for our climate as well as those needed to create the look we wanted. We did not depend on any one nursery. By watching the newspaper, we even bought lots of 1 gal. plants from discount stores. It is wise to purchase these as soon as they are offered for sale as these stores are not into "plant care" and many die soon after delivery.

IN DOING A LARGE GARDEN, look into the possibility of buying mulch by the truck load. Until ground cover is established, it is amazing how mulch is necessary to protect young plants. I prefer shredded mulch as it stays in place longer than chip and is not as heavy as nuggets. While pine bark mulch is fine for acid-tolerant plants and shrubs, I advise hardwood mulch for the herb area, as most herbs do not like acid soil. Sage, lavender, chives and thyme usually require lime dug in around their roots.

THIS WILL BE OUR FIRST SPRING to see the bulbs planted last fall--100 red, yellow and white tulips in the circle gardens and over 100 King Alfred jonquils below the rock wall. I am planning another herb area in the northeast portion to include burnet, hyssop, rue, sweet woodruff, yarrow and feverfew. Given several years, there will be no grass to cut, just gardens to trim and clip. ■

Plant List

- (A) Large Holly Shrubs
- (B) Small, Round-leaf Holly
- (C) American Boxwood
- (D) Roses
- (E) 4 or 5 different kinds of Euonymus
- (F) Burfordi Holly
- (G) Cotoneaster
- (H) Washington Hawthorn tree
- (I₁) White Dogwood
- (I₂) Pagoda Dogwood (yellow blossoms)
- (J) Canadian Redbud
- (K) Firethorn Pyracantha
- (L) Pieris Andromeda
- (M) Fosteri Holly
- (N₁) Perennial Herbs: Lavender, Sage, Marjoram, Oregano, Lemon Balm,
- (N₂) Annual Herbs: Fennel, Summer Savory, Dill, Basil, Parsley
- (N₃) Tarragon
- (N₄) Bee Balm, Chinese Lantern, Honesty, Ferns, Bleeding Heart
- (O) Ivy and Tulips
- (P) Pachysandra
- (Q) Nellie P. Stevens Holly plus Ivy
- (R) Hosta, Ferns, and Wildflowers
- (S) Stone Patio
- (T) American Holly
- (X) Korean Boxwood and Daylilies
- (Z) Old Rainbarrel for fresh water



Lovely Old Cedar

IT WAS ONLY AFTER removing the first piece that we knew for sure what kind of wood we were working with. It turned out to be western red cedar—which made us glad that we had decided to go to the trouble of stripping. Western cedar requires about 400 years growth before it is suitable for cabinetry—and it was just about all harvested several decades ago. The wood takes a clear finish beautifully, giving an amazing three dimensional feeling.

ONE DISADVANTAGE of the cedar is that it is so soft that baseboards and plinths may show scars from years of banging by vacuum cleaners and speeding Tonka toys. Thus, a slip of a crow bar can easily split or dent the delicate wood. Using the methods described below, such accidents were limited to three or four—and they cannot be detected now that the wood is back in place.

Removing The Woodwork

HERE'S WHAT IS NEEDED to remove woodwork safely: A 30-in. wrecking bar, a 12-in. bar, a keyhole hacksaw, a screwdriver, a couple of putty knives with 3-4 in. blades, a hammer, a pair of end-cutting nippers or pliers, and one glove.

STARTING WHEREVER it's convenient, slip a putty knife behind a piece of woodwork, breaking the paint or wallpaper seal between the wood and the wall. Then slip another putty knife in on top of the first one. With the hammer, gently tap the screwdriver in between the two

blades. This brings the wood away from the wall without putting any dents in the piece.

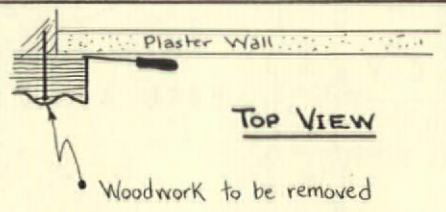
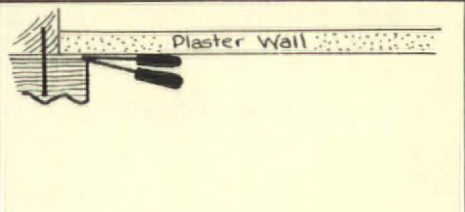
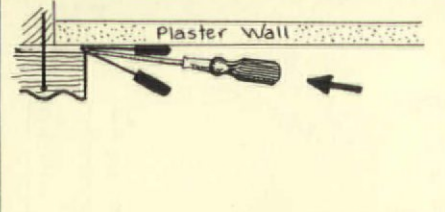
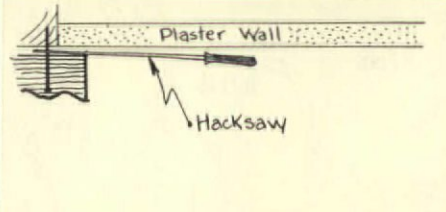
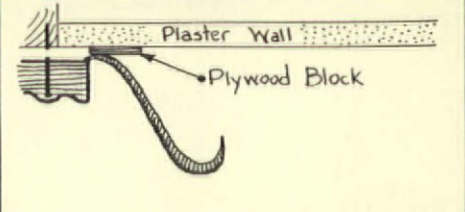
NEXT, REMOVE the screwdriver and putty knives and use a keyhole hacksaw to cut the closest nail that fastens the woodwork to the rough framing. If needed, use the short bar to pry up on the woodwork so that the saw won't bind. The one glove is needed to keep your knuckles from scraping the wall while using the hacksaw.

WHERE YOU START on the board doesn't matter; you'll soon have it loosened enough so that you can wedge your claw hammer or crow bar in for more leverage. A piece of ¼-in. plywood under the lever will prevent damage to the plaster wall.

IN PULLING THE WOOD OFF, some of the finishing nails will pull out through the piece, and others will pull through it, remaining anchored in the rough framework. The latter can be pounded all the way in. The former should be pulled with nippers or pliers from the back side of the wood. If the nail is pounded out the front side, chips and splinters will break off, making more work later on.

WHEN ALL THE WOOD has been removed, it should be inspected so that all nails—including the sawed ones—will be pulled out so the wood will not be scratched in transit. If there isn't enough nail left to grab with the nippers, a little filing will smooth it off.

SIMILAR TO The Old-House Journal reader who was delighted to find the name and date of the paper hanger pencilled under the stripped wallpaper, we were excited to discover chalked on the back of a panel "C. H. Houston--Ast." This was the name of a prominent contractor of the period. Unfortunately, these markings were lost in the stripping process.

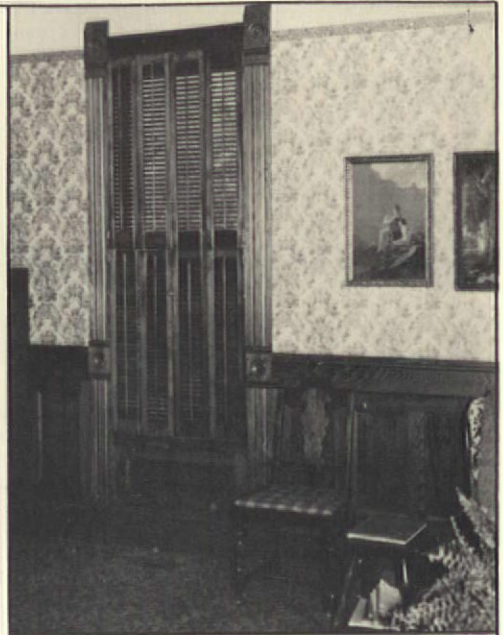
<p>How To Remove Woodwork Without Damage</p>	 <p>TOP VIEW</p> <p>Plaster Wall</p> <p>Woodwork to be removed</p> <p>1. Use putty knife to break any film of paint between wall and woodwork.</p>	 <p>Plaster Wall</p> <p>2. Insert two putty knives behind wood—one atop the other.</p>
 <p>Plaster Wall</p> <p>3. Drive a large screwdriver between Knives to loosen woodwork.</p>	 <p>Plaster Wall</p> <p>Hacksaw</p> <p>4. Cut any restraining nails with Keyhole-type hacksaw.</p>	 <p>Plaster Wall</p> <p>Plywood Block</p> <p>5. Pry woodwork off with crow bar. Plywood protects the plaster.</p>



15-ft. panel under stair balusters came off in one piece for stripping after trim pieces were removed.



Grain in top boards did not match because of previous patching. Painted grain lines hid the mis-matching.



Woodwork has a walnut hue after stripping. New pine shutters, stained walnut, blend in perfectly with original wood.

THE STEAM STRIPPING PROCESS we used charges by the approximate square footage. And because they are rushed, they like you to do the paperwork before you arrive. We laid all our pieces on the floor in an approximate rectangle to get a rough figure on square footage. We also made a careful inventory of all the pieces to make sure we got them all back.

DELIVER SMALL MISCELLANEOUS pieces in a shoebox to avoid losing them. My smallest piece was a chip no bigger than a fingernail, but it was given the same respectful treatment as the biggest panel (which measured 3 x 13 ft.). The long pieces I tied together so they would not flap around as they extended out the rear of the pickup. And I padded them well to prevent the rope from cutting into the soft wood.

THE STEAM STRIPPING PROCESS saturates the wood and gives it a wonderfully heady aroma. It took about three weeks for the wood to dry thoroughly in my basement. During that time, I took advantage of the openings left in the room to improve the wiring, add insulation and to repair the plaster. Since the steam process could crack glass, we made no attempt to strip the window sashes. Instead, we painted them with a dark brown enamel after carefully sanding them.

THE PROCESS did raise the grain on the wood and give it a slight furry appearance—especially where pieces have been exposed to sunlight, such as around the windows. This was easily smoothed off with steel wool after a coat of wood filler. Sanding took care of other damage such as splintered edges.

AFTER THE WOOD was sanded and steel wool-ed smooth, we put it back in place. Nailing the wood went quite rapidly, followed by setting all the nails and filling the holes with wood dough and sanding when dry. For a final finish, we used a satin finish polyurethane varnish and were quite happy with the results.

WE HAVE NEVER FOUND a pre-tinted wood dough which we liked with our wood—partly because cedar is two-toned with dramatic graining. To hide the filled nail holes, I have found it best to prepare a palette with black, white, brown, red and yellow paints. Colors can be mixed with a small touch-up brush as needed to match any wood tone. (Tubes of artist's acrylic paint are handy for these touch-up jobs.—Ed.)

ALTHOUGH SLOW, this touch-up work is very satisfying. It's very rewarding when you can step back a couple of feet and realize that you have caused the filled holes to completely disappear. My palette of colors also came in handy on one wall where a door had been shifted long ago. When the panelling had been moved, the graining did not match—a fact that had been hidden by the old dark varnish stain.

WITH MY PALETTE OF COLORS, I was able to paint in graining lines so that the panels matched up. With a dark brown hue, I extended various lines on both sides, feathering them out or joining them as suited me. The reflectance of the painted graining lines was totally camouflaged with the satin-finish polyurethane. ■■

Cures For A Wet Basement

By Clem Labine

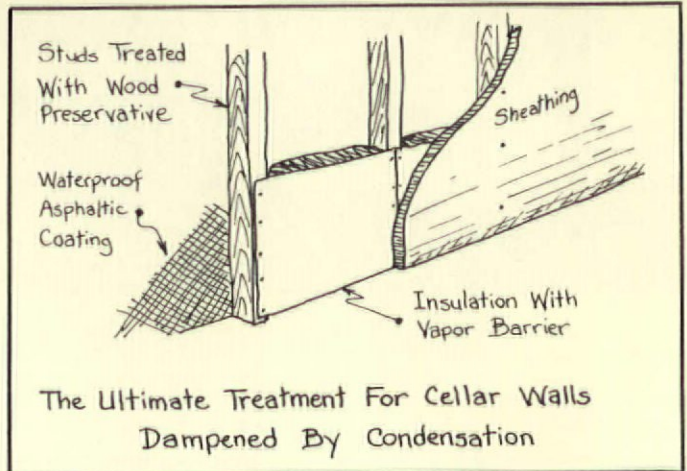
A WET BASEMENT can be a real headache—as anyone who has one knows. Remedies can be simple or complex (and expensive), depending on the nature and extent of the problem. There are three basic causes of basement moisture. Here's a description of the three, in increasing order of seriousness:

(1) **CONDENSATION**—When warm humid air in the basement comes in contact with a cold surface such as a water pipe, floor, wall, etc., water will condense on the surface. Often, this moisture will produce mold and mildew growth that will be evidenced by a musty odor (see *The Journal*, Jan. 1978, p. 7).

IF YOU CAN'T TELL whether dampness is due to condensation or seepage, here's a simple test: Tape a small pocket mirror to the cellar wall. If, after a couple of days, there are drops of moisture on the mirror, condensation is the problem. If the mirror is dry (and the wall damp) then seepage is the culprit.

TO BATTLE CONDENSATION, remove excess humidity. The most common sources are: Inadequate ventilation, leaky plumbing, and washers and dryers. Clothes dryers should always be vented to the outside. Obviously, leaky plumbing should be repaired. Open doors and windows as much as possible to ventilate the basement. If overgrown plants and shrubs around basement windows cut down on ventilation, trim them back. An electric fan can be useful in providing additional air circulation.

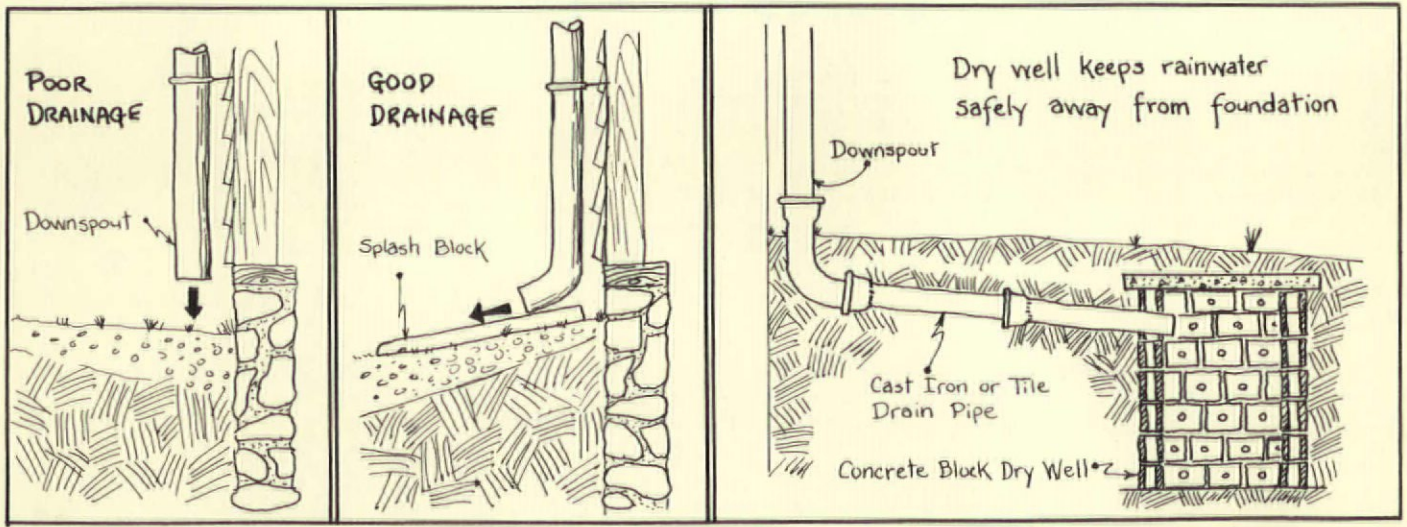
ANOTHER WAY to handle condensation is to attach furring strips to the cold wall, then place insulation with a vapor barrier between



the strips. Panelling or sheetrock can then be nailed in place (see sketch above). This procedure is usually worthwhile only when you plan to finish the basement for additional recreational space.

(2) **STORM SEEPAGE**—Water should drain away from the house during a rainstorm. But clogged drains, broken gutters, improperly graded ground, etc., can result in pools of standing water next to the house. The ground becomes saturated with water...and some of it may seep into the basement.

SOMETIMES THE CURE is as simple as repairing broken gutters and leaders. If this isn't sufficient, next step is to determine if the



downspouts are dumping water too close to the house, creating pools of standing water after a storm. The remedy: (1) Construct a trough or channel to lead water further from the house, or (2) Construct a run-off line that conducts storm water to a dry well or your house's drainage system. NOTE: If your house is connected to a septic tank, you'll have to use a dry well.

ALSO CHECK THE SLOPE of the ground around the house. Sometimes it is possible to add extra fill around the foundation to cause water to run away from the foundation. Thirsty plants and shrubs next to the house will help, too.

AFTER EVERYTHING POSSIBLE has been done on the outside to keep water away from the house, you may want to use an epoxy- or cement-based waterproofing paint on the inside of the basement walls. These waterproofing paints should be regarded as a last resort, however. Even if they succeed in stopping seepage, the water is still present inside the foundation walls and can accelerate deterioration—especially in walls with mortared joints.

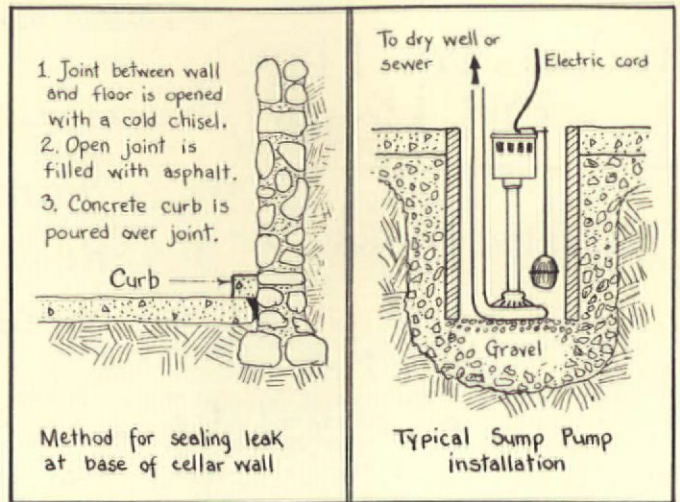
THE ULTIMATE SOLUTION to storm seepage through foundations would be to change the grading on the lot (which would require a landscape architect) and/or digging a trench around the house and applying asphaltic waterproofing compounds to the outside of the foundation walls and drainage tiles at the base of the foundation. These are major—and expensive—undertakings, and require professional contractors in just about all cases.

Seepage Through Cracks

THE THIRD SOURCE of wet basements—cracks in the foundation wall—is closely related to problems with ground water discussed above...with the added problems created by cracks and crevices in the basement wall. This problem can be especially acute in old foundations that are built up with stone and brick. If the foundation was laid up with mortar, it was likely a lime mortar if the house is more than 100 years old. Water leaches the lime out of this mortar, so if there is any seepage at all it is likely that most of the lime has long ago washed away. If the wall was laid up dry, of course, there are voids between all the stones, and these may allow water to pass when water pressure builds up in the ground.

REPOINTING THE MORTAR JOINTS or patching cracks may be all that is required to stop seepage. For smaller cracks, epoxy patching compounds—applied according to manufacturer's directions—are simplest. For larger pointing or patching jobs (where epoxy gets too expensive), clean out joints with a cold chisel and fill with a portland cement mortar mix. If you still get minor seepage, then one of the basement waterproofing paints mentioned earlier may do the trick.

ONE HANDY PATCHING MATERIAL is hydraulic cement. This material sets hard in about 30 min. and will cure in the presence of water. So if you notice a severe leak during a rain



storm, you can patch it on the spot while you see exactly where the water is coming from. Hydraulic cement should be available from building supply dealers.

IF WATER IS STILL SEEPING after the steps outlined above, it would be possible to trowel an additional layer of portland cement stucco on walls and floors (assuming there's nothing on the walls that would hinder adhesion of the cement). But if seepage is serious enough so that you are considering this step, you are probably better off abandoning hopes of ever stopping the water entirely, and turning instead to methods for controlling and channelling the water.

DRAIN TILE can be laid alongside the inside bottom of the footings. (If you have a poured concrete floor, this would necessitate breaking up the concrete around the edges next to the walls.) The tile should be embedded in coarse gravel and should lead to a drainage outlet. If you can't get proper drainage by gravity, consider installing a sump pump and pit. Another possibility (although the least effective) is a dry well in the lowest corner of the cellar.

Sump Pumps

SUMP PUMPS are used to raise water to a level where it can be carried away by the regular house drainage system into the sewer. Sump pumps are small compact units that are installed in a pit (or "sump") at the low corner or other wet spot in the basement. The sump is normally lined with a large draintile or concrete. Manufacturers of sump pumps specify the size of pit required for a particular unit.

SUMP PUMPS are designed for automatic operation. If correctly installed and not abused, a sump pump requires very little attention. Dirt, lint, trash and other waste can clog the strainer and should be kept out of the pit. ■■

Products For The Old House

Beveled Glass

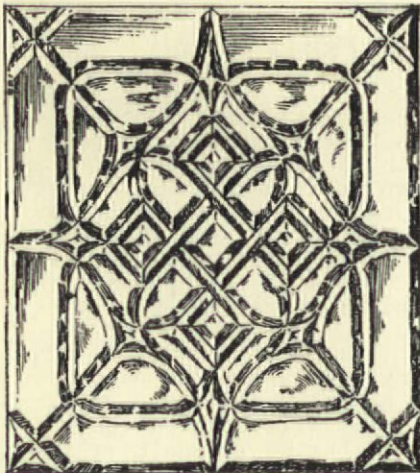
CHERRY CREEK ENTERPRISES in Denver specializing in the making of beveled glass for interior and exterior doors, windows and cabinets. They do production work for craftsmen as well as hand-made custom beveling of individual pieces for the homeowner.

THEIR CATALOG has a large variety of sizes and shapes in beveled blanks, but they will produce any size and shape needed. The price chart in the catalog will aid in figuring the cost of a custom piece.

PANELS can also be made with cut or etched glass designs, or glue chip--a process which produces a fern-like texture surface pattern. Beveled mirrors are also available. Glass can be beveled in any thickness and at any angle required for the desired effect.

CERRY CREEK also does specialty glass repair as well as jewel repair and replacement. They have a large supply of antique reproduction jewels in many shades.

FOR CATALOG, write to: Cherry Creek Ent. Inc., Dept. OHJ, 937 Santa Fe Drive, Denver, CO 80204. Tel. (303) 892-1819.



Helpful Publications

Furniture Restoration Booklets

CORNELL UNIVERSITY has a package of very good booklets available. One of the most interesting, "Three Centuries of Furniture" has 68 pages of antique furniture shown in black and white photos taken by the author in homes in New York State.

FOUR BOOKLETS are concerned with weaving and repairing chair seats with cane, rush, splint, rope and twine, and Hong Kong grass. In each case, the booklet lists the equipment needed, tells how to select the best material, and directs construction through a series of photos and carefully written instructions.

THREE BOOKLETS about refinishing furniture are included as well as a guide to making hooked rugs.

COST OF the 9-booklet package is \$3.00. To order, ask for "Antiques and Restoration" from: Mailing Room A, 7 Research Park, Cornell University, Ithaca, N. Y. 14853.

Historic Architecture

THOSE WHO feel frustrated when they encounter a word like "machiolation" when reading an article about old buildings will appreciate this new book.

"HISTORIC ARCHITECTURE SOURCEBOOK" contains clear definitions of over 5000 terms as well as 2000 excellent line drawings. Many periods and cultures are culled: Ancient, Greek and Hellenistic, Roman, Early Christian, Chinese and Japanese, etc. It is a valuable reference for serious study as well as a source of enjoyment for those who just like to know the names of things.

BY THE WAY, "machiolation" is defined as "an overhanging defensive structure at the top of a medieval fortification, with floor openings through which boiling oil, missiles, etc. could be dropped on attackers."

TO ORDER "Historic Architecture Sourcebook," send \$19.95 to: McGraw-Hill Book Co., Dept. OHJ, Suite 26-1, 1221 Avenue of the Americas, New York, N.Y. 10020.

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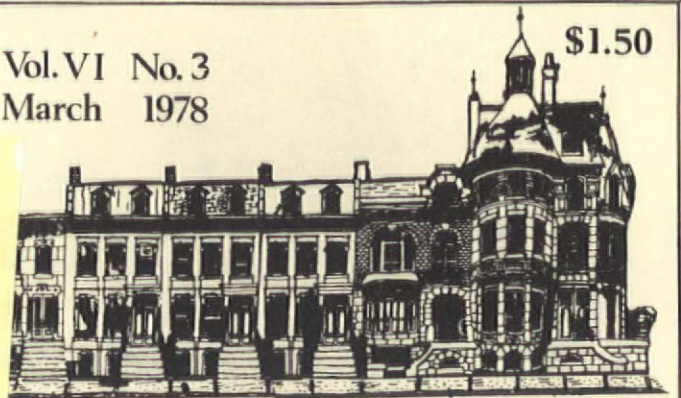
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Techniques For The Antique House



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Coming Next Month

LIGHTNING PROTECTION

made possible by technological developments: The improvement and standardization of cast iron fronts which provided a strong frame of light appearance to contain plate glass of newly expanded dimensions.

Many of our readers who have restored old storefronts have found that, as well as being aesthetically pleasing, these period restorations are good for business. The following article gives an accurate representation of the commercial architecture of the late 19th and early 20th century. It should be a great help to those involved in the revitalization of Main Streets and central business districts around the country. --Ed.

By Mara Gelbloom

1870

THE DECADE OF THE 70'S saw great innovation in storefront design. For the first time, most storefronts were distinguished from other commercial edifices by the inclusion of a large display window on the ground floor. General use of large, first storey shop windows was



FIRST STOREY CAST IRON FRONTS used in conjunction with stone or masonry were the most commonly used materials for small town commercial edifices. Popular stones of this period were brick, brick faced with sandstone, granite, and marble, the latter being the most desirable of these materials, but usually prohibitively expensive. Thus, one might find a combination of a first storey cast iron front and a facade of pressed brick with dressings of white marble.

A SECOND POPULAR COMBINATION was brick with architectural terra cotta and light stone, also used in conjunction with the first storey cast iron front. However, buildings constructed completely of stone or masonry were still erected and during this period, sheets of plate glass were often inserted in these facades.

CAST IRON was always painted to insure its protection from rust and oxidation. Initially, it was often painted white in imitation of marble, or brown in

(Continued on page 33)



The Flaming Truth About Linseed Oil

By Clem Labine

I WASN'T ALARMED WHEN I awoke at 6:45 a.m. and smelled smoke in the house. We had smelled smoke many times in the past, and the cause always turned out to be something harmless like the oven or the incinerator down the block. Nevertheless, I thought I had better check it out—just to be safe.

AS I CAME DOWN THE STAIRS, the acrid smell of smoke became much stronger. Entering the dining room, I encountered the sickening sight of our kitchen totally obscured by smoke. I tried frantically to locate the source of the fire, but the gases were so suffocating that I was driven out of the room in desperate search of air to breathe.

AFTER A PANICKY CALL to the Fire Department, I decided to make one more attempt to locate the source of the fire and have a go at it with our fire extinguisher. I was able to open a window at top and bottom in the dining room to let out some of the smoke. After taking in a lungful of fresh air I plunged back into the kitchen. Through painfully smarting eyes, this time I could see flame...coming from a paper bag under the kitchen counter.

I GRABBED THE BURNING BAG and stamped out the flames—then looked around for more fire, extinguisher at the ready.

BUT THERE WAS NO MORE FIRE. It gradually became apparent that all the smoke and all the flame had come from the single paper bag. And by the time the Fire Department arrived, I had figured out what had caused the fire...much to my chagrin. I had learned the hard way about spontaneous combustion.

THE PREVIOUS WEEKEND, I had been doing some furniture refinishing with two of my children as helpers. We were putting a rubbed linseed oil finish on an oak sideboard...applying boiled linseed oil with brushes, then rubbing it out with soft paper towels.

AFTER THE SIDEBOARD WAS DONE, we stepped back to admire our handiwork, then I told the kids to pick up the paper towels while I cleaned the brushes. I paid no attention to what they did with the debris...A SERIOUS MISTAKE.

THE OLD-HOUSE JOURNAL®

Published Monthly For People Who Love Old Houses

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Published by The Old-House Journal Corporation, 199 Berkeley Pl., Brooklyn, N.Y. 11217. Tel. (212) 636-4514. Subscriptions \$12/yr. in U.S. and Canada; \$20/yr. elsewhere. Printed at Royal Offset Co., 34 W. 15th St., NYC 10011. Contents of the Old-House Journal® are fully protected by copyright and must not be reproduced in any manner whatsoever without specific permission in writing from The Editor.

AS IT TURNED OUT, they put the linseed-oil-soaked paper towels into a paper bag—and then placed the bag under the kitchen counter next to the trash basket. The person who took the garbage out that night did not notice the paper bag tucked in the back under the counter. And so the bag was left...until I discovered it 36 hours later engulfed in flame.

I HAD HEARD ABOUT spontaneous combustion before, of course. But it had always seemed like a rare—and improbable—phenomenon. Any awareness I had was not strong enough to make me see to it that the linseed-oil-soaked paper towels were disposed of properly.

LINSEED OIL DRIES by oxidation in air. And the oxidation reaction releases heat. When there is plenty of air circulation, the heat of reaction dissipates harmlessly into the atmosphere. But when rags or paper towels are squeezed up in a tight space such as a can or a paper bag, there is no circulation to carry off the heat. So the temperature starts to build up inside the container. After a while, the mass begins to smolder with the release of much smoke...and finally bursts into flame as the ignition point of the rags or paper towels is reached.

ANY RAG OR PAPER TOWEL soaked with a drying oil should be regarded as an INCENDIARY BOMB! Besides linseed oil—which is the most dangerous—treat with caution any drying oil such as tung oil, and oil-based varnishes and paints. (Non-drying oils such as lemon oil don't pose this hazard.)

NEVER BUNCH UP rags or paper towels that contain a drying oil. There are two ways to dispose of them safely: (1) Best way is to burn the rags or paper yourself in a fireplace, or other safe disposal area. That way you are sure they are out of harm's way. (2) If you don't have a convenient place for safe burning, spread the rags or paper towels out flat and let them dry with plenty of air around them. ■

How To Plan And Plant

A Knot Garden



By Sue Frisch, Brooklyn, N. Y.

IF YOU HAVE a Tudor or Colonial house, you should plant a knot garden--a geometric design worked out in foliage plants. The lines of the design are usually made to look as if they are woven in and out or "knotted." The overall effect is of absolute serenity, though complexity of design and contrast in color and texture provide continuing interest. If you use evergreen plants the effect is carried through the entire year. Some knot plants flower, too.

KNOT GARDENS reached their height of popularity in Tudor England. Everyone had one, from the rich, who frequently used coats of arms in their complex motifs, to the cottagers, who sometimes used lavender so that sheets laid over the knot to dry would smell especially sweet. Sixteenth and seventeenth century garden books give advice and designs for planting them. A knot garden is still maintained at Hampton Court in England.

WHEN SETTLERS came to America, they attempted--as far as time and resources permitted--to reproduce the gardens they were familiar with at home. The New England Puritans planted practical gardens, but the settlers in the southern colonies planted for decoration as well as for use.

AN ELIZABETHAN KNOT GARDEN was really part of a garden room, and to be authentic, you should have an enclosing wall, hedge or fence (planted with vines such as honeysuckle.) The knot itself should be in the center, with grass, gravel or red sand paths all around and per-

haps formal beds of flowers edged with a low border. The perimeter of the knot should be square with the geometric design inside. A simple design using larger plants is the best to start with as the tighter and more complicated the design, the more maintenance it will require. Weave a line of green with a line of gray, or use foliage textures the same way.

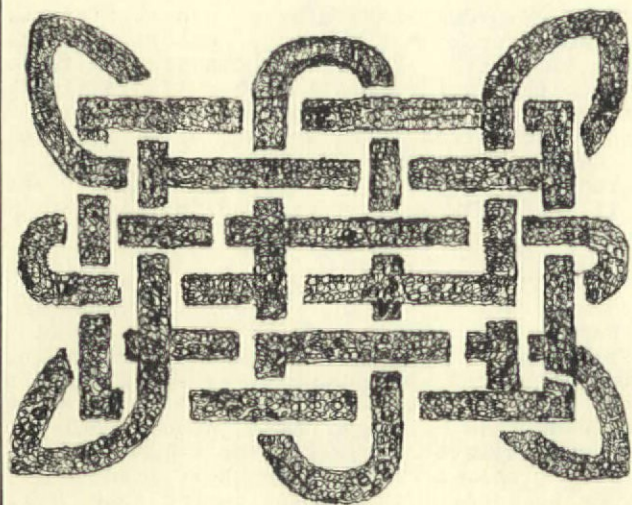
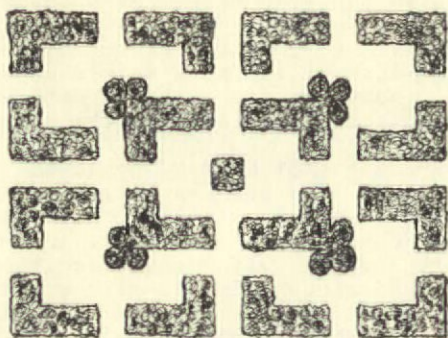
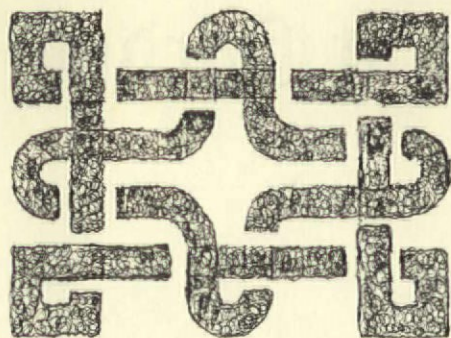
THE SITE FOR A KNOT GARDEN should be sunny and well drained. The bed can be raised and edged with pieces of slate or boards if desired. The soil should be light and mixed well with compost. If a soil test shows acidity, add enough lime to give a slightly alkaline reaction. Do not add fertilizer until the plants are growing and seem to need it.

LAY OUT YOUR PLAN on graph paper. This will help you to estimate the number of plants you will need. Unless you can start with seed, you might want to start with cuttings from a neighbor's garden or from one or two large purchased plants. Be sure to allow room for growth--tiny plants may look silly dotted along, but later they will look terrible and will not grow well if planted too closely.

WHEN THE PLANTS in the knot have developed enough, start trimming to keep the lines in shape. Time this carefully if you want flowers. You can use the cut pieces for cooking, for potpourri, in bouquets--or strew them on the path to be crushed and smell sweet as you walk on them. Trim whenever needed, but stop in mid to late July, as later trimming might force winter-tender growth. Fertilization, when necessary, should follow the same pattern.

EDGE THE SQUARE with a small hedging plant such as box, teucrium or santolina (sometimes pinks or English daisies or even oak boards were used.) Mulch the ground in the spaces left by the design, using gravel, marble chips, broken terra cotta pots, small pieces of coal or pine bark (sprinkle lime on the ground before using bark.) Although the Elizabethans sometimes planted flowers sparsely in the open spaces left in the designs, you will get a purer effect if you put them in separate beds edged like the central knot.

Designs For A Knot Garden



PLANTS THAT WERE most frequently used for the lines of the design are hyssop, santolina (gray and green), teucrium and winter savory. Others less common are artemisia, juniper, thyme and thrift. If you think these plants are dull, there are many others from Elizabethan or American Colonial gardens that could be used in a knotted pattern. For instance: Lavender, pinks, basil, rosemary (where hardy), parsley, chives, sage, rue

and sweet woodruff. Watch out for sweet woodruff--it spreads rapidly, but it is good in shade, has pretty spring flowers, and would make a dense ribbon of green if kept trimmed.

If you do plant a knot garden, try to have it visible from an upstairs window of your house. The changing aspects of the fixed design are very pleasant to watch from above. And whether you look from a distance or walk along its paths, you will be part of a tradition that has been with us for almost 500 years.

Sources For Seeds And Plants

Nichols Garden Nursery, 1190 North Pacific Highway, Albany, Oregon 97321
Seeds and Plants

Park Seed Company, Greenwood, South Carolina 29647 -- Seeds

Carroll Gardens, Westminster, Md. 21157
Plants

Gardening Publications

TWO BOOKLETS on herbs are available from the Brooklyn Botanic Garden. One, HANDBOOK ON HERBS, contains a photo of their knot garden which consists of two different squares set together in a rectangle and surrounded by grass paths and beds of herbs. A public garden in your area might have a knot garden you could go and see. The booklets are: HANDBOOK ON HERBS (#27) and HERBS AND THEIR ORNAMENTAL USES (#68). Price is \$1.75 each, including postage. Write to: Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, N.Y. 11225.

An excellent guide to period gardens--researching and creating them--is available. Major gardening periods in the U.S. from the 1600's to 1900 are covered (as well as a brief bit on knot gardens) and a plant list for each period. To order FOR EVERY HOUSE A GARDEN, by Joy and Rudy Favretti, send \$4.95, plus 50¢ postage, to Pequot Press, Chester, Connecticut 06412.



How To Make A Wainscot

In the November 1976 issue we described how period effects had been created in The Old-House Journal's hallway with glazing and stencilled decoration. Part of that project included building a wainscot. Here, the carpenters give details on how they did it.

By Stephen MacDonald & Sunnie Singer

WE BUILT A WALNUT WAINSCOT for the brownstone offices of The Old-House Journal that almost perfectly matches the original wainscot that was installed on other floors of the house when it was built in 1883. The woodwork is truly "the kind they don't make anymore," but we believe that any competent handyperson who has some experience in elementary cabinetmaking can duplicate our results.

THE SECRET is careful planning and precise measuring. First step is to determine the design. In our case, that was simple enough since we were extending an existing wainscot. If you plan to install wainscotting where none exists, it would be wise to begin with some library research. Wainscots have been built in many shapes, sizes and materials, varying with the fashions of the times.*

ONCE YOU HAVE THE BASIC DESIGN, it has to be adapted to each wall. Here's where the careful planning begins. In our case, the wainscot we were copying was 36 in. high, topped

*The reprint editions of the 19th century architectural pattern books available from The Journal contain designs for wainscots.

by a chair rail moulding, and containing a raised panel surrounded by a picture-frame moulding. (See detail drawing on next page.)

WE WERE ABLE to extend all the vertical dimensions directly to the new wainscot. But we had to determine new panel and stile widths that would "come out even" on each wall—and yet which would remain as faithful as possible to the original. Spend plenty of time with pencil and paper planning each wall individually.

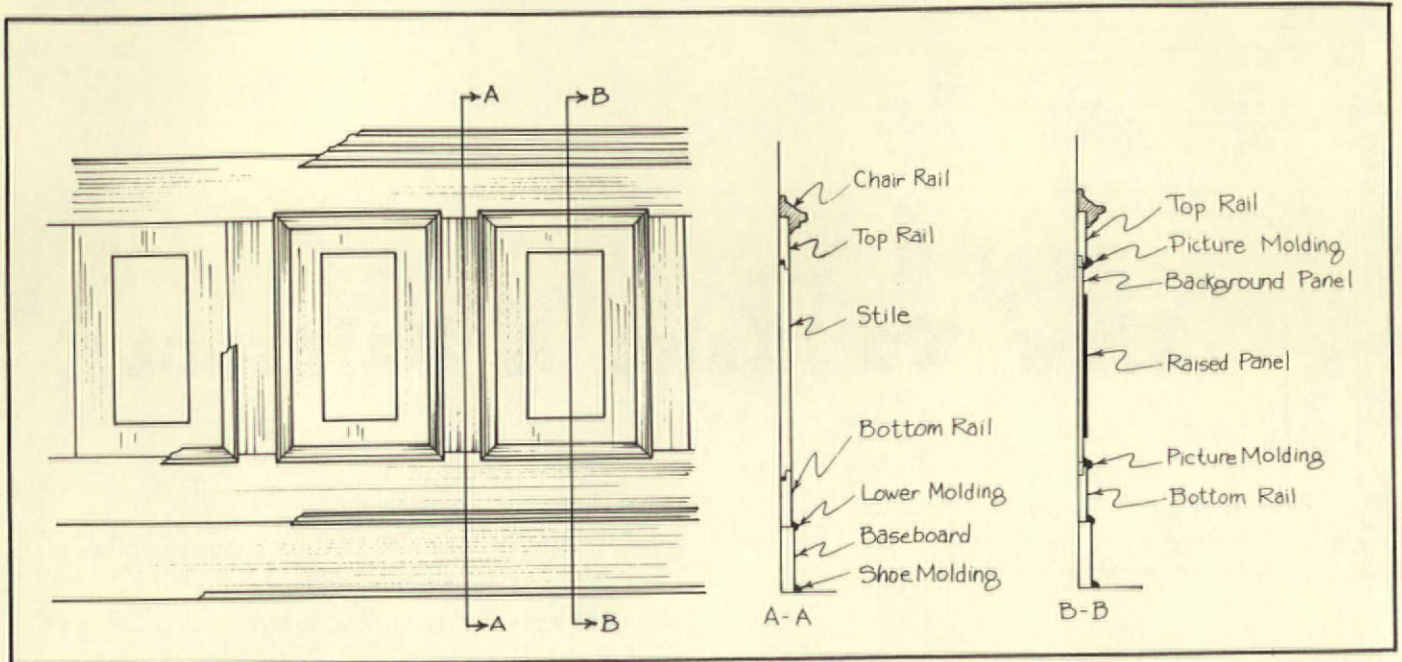
NEXT STEP IS TO FIGURE a lumber order and cutting plan. We made our rails and stiles from 3/4-in. top-quality walnut veneer plywood and our background panels of the same 1/2-in. plywood. (Solid walnut boards are more difficult to obtain—and less dimensionally stable than the veneer.) The raised panel on the wainscot was 1/4-in. burl walnut veneer, which turned out to be rare stuff indeed. Although we were told that such a product was still made, we were unable to find even a single piece in the New York metropolitan area. Eventually we found a plywood fabricator who custom-made a panel for us.

FOR OUR MOULDINGS, we made cross-sectional drawings of the existing mouldings and had them reproduced in solid walnut at a mill.

Stock Mouldings

USING THESE MATERIALS resulted in a first-rate reproduction. But you can get by with less expensive wood—especially if you aren't trying for a close match of an existing hardwood wainscot. Select a veneer plywood if at all possible. A good veneer has a fine appearance, and won't give you the warping and cracking problems that solid boards often do. You can find stock mouldings in a good lumberyard—and can combine two or three stock patterns to make a dimensionally interesting chair rail. Skillful staining or graining can work wonders with inexpensive softwoods.

AN IMPORTANT POINT in buying mouldings is that they must fit the "steps" in the wainscot. For example, the picture-frame moulding against



the background panel in our wainscot steps back $\frac{1}{4}$ in. from the front stile.

WITH ALL MATERIALS in hand, we began by making the required number of stiles and rails. We ripped the $\frac{3}{4}$ " plywood to the appropriate widths, then crosscut the stiles roughly 1 in. longer than the distance between the top and bottom rails.

USING THE DADO BLADE on our radial arm saw, we cut a $\frac{3}{4}$ -in. wide rabbet half the thickness of the material—EXACTLY—along the back of each top and bottom rail.

NEXT, measure $\frac{1}{2}$ in. from the end on the front of each stile, mark it, and then measure off the exact distance between the top and bottom rail and mark again. This should leave an exact stile length with roughly $\frac{1}{2}$ in. on each end. Use a router or dado blade to rabbet each end, this time on the front side, and again half as deep as the stock. NOTE: Check your stock thickness before you begin. Often, especially with fine veneers, plywood is slightly thicker or thinner than the nominal dimension.

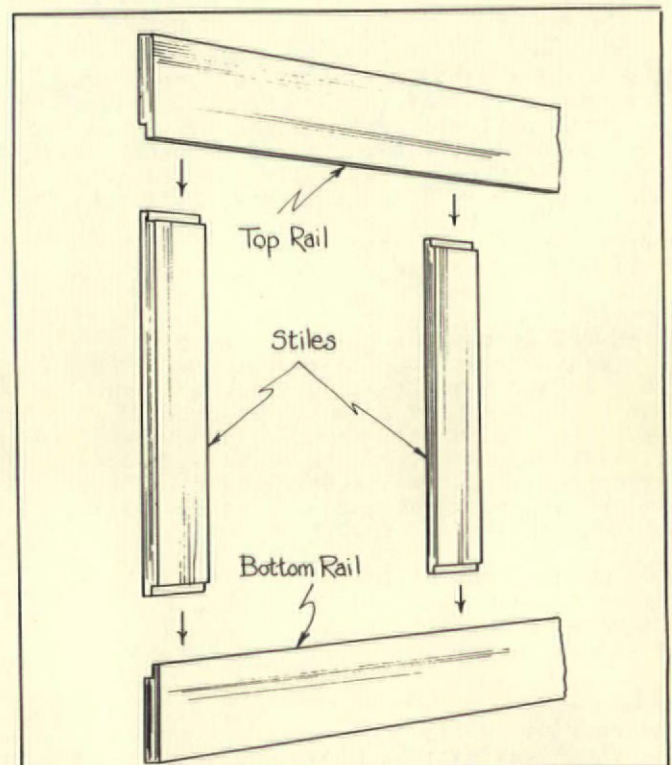
CUT THE BACKGROUND PANELS $\frac{1}{4}$ in. smaller in each direction than the height between the top and bottom rails and the width between the stiles. Cut the raised panels to their finished dimension.

QUR NEXT STEP was to experiment with stains and finishes. We knew that we would have to use different stain mixtures on the various components so that each would match its original counterpart. That meant staining each part individually, and we reasoned that the best time to do that was before they were all assembled on the wall.

WE TESTED SEVERAL MIXES on scraps, then added two coats of Minwax Antique Oil, which was to be the final finish. We weren't going to oil

the wainscot before it was assembled, but we needed to see how much the oil would change the color over the stains we were using. When we had the combinations we wanted, we sanded and stained each piece its proper color. The raw plywood edge on the burled walnut panels would show, so we sanded and filled the edges and painted them a dark walnut color.

WE BUILT OUR WAINSCOT over a plastered brick wall, assembling it directly on the plaster. If you are working on a studded wall, it will first be necessary to remove the plaster or





Finished wainscot is a faithful replica of the 1883 original. It is accented with a simple one-color wipe-line stencil.

wallboard where the wainscotting will be and install horizontal furring strips either atop or between the studs—depending on how far out from the wall you wish the wainscot to extend. Reason for this extra step is that you'll need nailing surfaces between the studs.

Installation Details

A BASEBOARD WAS ALREADY in place. We removed the moulding from the top of it, then planed and cut the bottom rail as required to get a level installation on top of the existing baseboard. We then attached the rail to the wall with nails (more about that later). Put the first stile in place in the bottom rail, and put a couple of small wire nails through the lap joint to hold it in place. Try to put nails where moulding will hide them. Measure over to the next stile location and install one there in similar fashion. Continue until all stiles are set.

NOW SET THE TOP RAIL in place over the stiles and attach it to the wall, again locating the nails where mouldings—in this case the chair rail—will cover them.

Sources

The custom-made walnut mouldings were produced by Dimension Lumber Corp., 517 Stagg St., Brooklyn, NY 11237.

The burlled walnut veneer panels were made by Yonkers Plywood Mfg. Corp., Bordentown Rd. and Cheese Quake Rd., Old Bridge, NJ 08857.

IF YOU'RE INSTALLING over furring strips, none of this should present much problem. Over plaster and brick, however, we had some difficulties. The first was that neither cut nails nor masonry nails were adequate to hold the top and bottom rails securely, although cut nails apparently did the job just fine in 1883. We struggled nobly, but eventually gave in to the inevitable: Using a masonry bit in a power drill, we bored into the brick and installed wooden plugs so that we could attach the rails with wood screws—three to each 8-ft. length.

SECOND PROBLEM was that because the plaster walls were uneven, we had to place shims behind some of the stiles to hold them tightly against the rails and make a smooth joint.

YOU NOW HAVE a framework of rails and stiles. Place a background panel into each rectangular opening and nail it to the wall—being careful to place the nails in the middle area that will be covered by the raised panels.

WE ATTACHED THE RAISED PANELS with contact cement and small wire nails. We made a stencil a bit smaller than the outline of the raised panel. We used this to apply a coat of cement to each background panel. Then we coated the back of each raised panel, let them dry, and carefully placed the raised panels on the backgrounds. Then we added two nails per panel for safekeeping.

WITH A MITRE BOX and back saw we cut the picture-frame mouldings and installed them along with the chair rail and bottom mouldings. Finally, we sank all visible nails, filled the holes with linseed oil putty colored with burnt umber and burnt sienna to walnut color, and applied two coats of oil to the whole works.

THE RESULTS ARE QUITE SATISFYING. Without looking carefully, you'd never know which wainscot is "the kind they don't make any more" and which is "the kind we just made." ■ ■

Besides being fine finish carpenters, Sunnie Singer is a child therapist working in New York City, and Stephen MacDonald is Managing Editor of Industrial Design magazine.

(Storefronts--Cont'd from page 25)

imitation of sandstone, as stone was still considered the superior material. However, there were those who believed in the intrinsic merit of cast iron and discouraged its use for imitating stone, instead recommending that cast iron be painted any color, except white or brown, that would be in harmony with surrounding architecture.

BY THE SEVENTIES, cast, wrought, rolled or galvanized iron was used for the detailing of many commercial buildings. Cast iron window sills and caps, painted in colors contrasting with the body of the building, were often used to accent the arched or square-headed windows of the storeys above the shop front. These sills or caps were most often designed in the Italianate style, the predominant style of commercial buildings of this era, but they were also designed in the Greek Revival mode or in eclectic styles.



Matt Bros. grocery store in Chicago, circa 1880-1885.

WROUGHT IRON was commonly used for window balconies or roof cresting, while rolled iron sometimes replaced the old, flammable wooden shutters. Galvanized sheet metal, often painted in imitation of stone or wood, was used for such details as cornices, grilles, window guards, railings, roof covering or ornamentation. Initially cornices, mostly Italianate in style, were produced in standard 6 ft. lengths, but in the later 70's 8-10 ft. lengths were introduced.

IN TOWNS WHERE THE POPULAR wooden mansard roof was prohibited, following the Chicago fire, a galvanized iron mansard roof of standard design might be used. Otherwise, wood was still used for the details of many buildings, as the cornice which was sometimes painted or sanded to imitate stone. Copper might also be used for the cornice or trim, and the fascia board might be either wooden or copper.

IN THE SMALL TOWN, little attempt was made at elaborate mullioning of the shop window. The display window usually appeared in only two forms: Either as a single sheet of plate glass or as a two-on-two windowpane arrangement.

THE WINDOWS OF the upper storeys were commonly divided into three-on-three or two-on-two. During this decade, the setting of the display window, obliquely, toward a recessed entrance was introduced, an arrangement which lasted throughout the subsequent decades under consideration.

THE MOST COMMON ARRANGEMENT was either a center entrance with two obliquely placed windows flanking the doorway, or a side entrance with two adjacent sheets of plate glass, supported by cast iron or wooden verticals, also set obliquely toward the doorway.

A MORE SOPHISTICATED SOLUTION that occasionally appeared were separate projecting display cases correlating with projecting bays of the upper stories. The panels beneath the display windows were wooden.

THE TRANSOM had not yet become a decorative feature as it would in the mid-1900's, though it was usually divided into leaded rectangular panes. Canvas canopies, stretched across the width of the shop front, appeared during this decade, though tin or wooden canopies still remained.

1880-1900

THERE APPEARS to be little difference between commercial front design of the 80's and 90's and that of the preceding decade.

DEVELOPMENT of the shop front continued along similar lines: A storefront open and light in appearance was desired. Thus, the use of cast iron was even more widespread, and the use of stone or masonry piers for shop front construction was eventually abandoned. Two-on-two windowpane arrangements were eliminated in favor of single-sheet plate glass. Canvas canopies now lined the street, almost completely replacing the tin and wooden canopies of the 70's.

1900-1915

COMMERCIAL ARCHITECTURE of the early 1900's was characterized by the installation of large display windows in buildings of the preceding decades. The sight of masonry or stone resting on large expanses of plate glass with no visible support created a visual incongruity that was, in fact, much criticized in contemporary architectural journals.

A SECOND ARCHITECTURAL PHENOMENON of this period was the construction of flat-roofed, one-storey commercial blocks, built specifically to accommodate the large display window. The building appeared as almost all window, merely providing a frame of masonry and metal for purposes of support. In the display windows of both these types of storefronts, strips of metal replaced cast iron or wood for structural framing. The window was usually subdivided by the metal stripping, creating two or three rectangular panes above the major expanse of plate glass. The arrangement of the obliquely set display window leading into the recessed entrance was still retained.

1915-1920

THE VISUAL INCONGRUITY of masses of masonry or stone resting on a sheer expanse of plate glass, much criticized in preceding years, now was overlooked as the shop window became accepted as a distinct architectural entity in itself. It was therefore, during these years, that transom lights and glass panes placed above the display window became quite decorative, a feature anticipated in earlier years by the simple leaded rectangular panes set above the display window.

IN ORDER TO ALLOW MAXIMUM vision into the display area, the ideal storefront window of this era contained no visible structural supports. Cornice posts and obvious metal strip-



A Chicago street, circa 1917. Photo by Charles E. Barker. (All photos supplied by The Chicago Historical Society.)

ping were eliminated in favor of simple metal clamps or clips that fastened the plate glass, either lapped or beveled at its ends. The base or sill of the window was usually 2 ft. above the sidewalk, extending in height about 6 to 10 ft. above that point, and projecting about 3 or 4 ft. into the interior of the store.

THE DISPLAY WINDOW had begun to advance several feet beyond the facade of the building, and as in former years, its sides were set obliquely, thus creating a passageway into the store, in conjunction with the recessed or splayed entrance. The wood panels that had previously covered the space beneath the shop window were often replaced by iron grilles used to ventilate or light the basement.

DURING THE PERIOD, there was an interest expressed in the use of brighter colors for commercial architecture. But color was sought through the use of materials that would be bright and varied in appearance, rather than through the use of paint. As all interest was concentrated on the display window, plate glass, metals and light colored marble trim were considered appropriate for lively looking fronts, while stone was condemned as ponderous and dingy.

GALVANIZED IRON soldered together and painted to represent oxidized copper was popular. One might find a frieze of veined marble above a shop front, copper cornices, wrought or cast iron ornamentation around the display window or architectural terra cotta. In almost universal use was stained, leaded, or prismatic glass as decorative features for the

transom or for areas immediately above the display window. The canvas awning, extending across the entire width of the shop window, was retained as a fixture that lent visual variety.

Graphics 1870-1920

THERE WAS GREAT VARIETY in lettering styles during the period under consideration, and several different types of lettering were often utilized within one advertisement. But the lettering employed was seldom of the P. T. Barnum style that is often mistakenly used today in the hopes of authentically reproducing graphics of this period. Serif lettering, instead, most commonly appeared.

SEVERAL DIFFERENT FORMS of signage also existed during this period. It was quite usual to find advertisements or signs painted over the surfaces of brick buildings. Bold lettering advertising the name of a hotel or restaurant was painted, between the upper storeys, on the surfaces of these establishments.



The Women's Shop on South Halsted Street in Chicago, circa 1921. Photo by Charles E. Barker, courtesy Chicago Hist. Soc.

Mara Gelbloom is an architectural historian with an M.A. from the University of Chicago. She currently manages an historic preservation rehabilitation program for a development corporation. This article was derived from research done while she was an intern for the Midwestern Office of the National Trust for Historic Preservation.

Graphics were frequently painted, or less often, stencilled in gold leaf on display windows or on office windows above storefronts. Otherwise, signs might be found hung from balconies, crowning rooftops, or affixed to fronts of buildings. In the latter case, these signs were rectangular with segmental arches.

ALMOST UNIFORMLY used were signs printed on the edge of canvas awnings. Symbolic three-dimensional signs were rare, though an eye-glass or a boot painted on brick or plate glass could occasionally be found. Projecting vertical signs only sporadically dotted the streetscape.

VISUAL CHAOS along the streetfront because of poorly designed or inappropriately placed signage was as much a concern during this period as in the present decade. Lettering painted on every available space of a brick front, and unwieldy signs hung on balconies and projecting from rooftops were unsightly. Then, as now, architectural critics desired an effective, but unobtrusive advertisement.

A SUGGESTED SOLUTION of the early 1900's was that space for graphics be included in the design of the storefront. A wide strip of marble or other stone, which could serve as a decorative feature if unused, was recommended for graphic space. Prior to 1900, space for graphics was included as an integral part of the design of more expensive commercial buildings. Thus, graphic styles or forms of signage must be chosen carefully. ■ ■

More On Storefronts

"MAIN STREET - The Face of Urban America" is a new book that presents a diverse portrait in text and pictures of 7 towns and their main streets from 1850 to the present. The excellent photos will aid those involved in Main Street restorations. To order, send \$20.00 to: Harper & Row, Publishers, Inc., Mail Order Dept., 10 East 53rd St., New York, N. Y. 10022.

A LEAFLET is available to help store owners improve their properties in a way that is architecturally and commercially attractive. Copies of "A Practical Guide to Storefront Rehabilitation" are available for \$1.00 postpaid, from the Preservation League of New York State, 13 Northern Boulevard, Albany, N. Y. 12210. Special rates available for large orders.

Canvassing A Porch Floor

By Linda Sessions, Los Angeles, Calif.

WE HAVE A LARGE two-storey Mediterranean house that is relatively old by Southern California standards. During the first rain after we had moved in, we discovered a massive leak. Water was pouring through the flooring of a 9 x 13 ft. second-storey porch into the room below. We immediately set out to repair the leak—but soon found out that it presented some unusual problems.

THE PORCH, which forms the roof for the room below, has a wood floor of closely laid boards. When the house was built, a waterproof canvas covering was laid over the floor before the stucco walls and tin edging were finished. The canvas extended under the stucco wall, and this left a nice flat covering with no edges to fray. Fifty years later, the canvas had rotted, providing as much waterproofing as a sieve.

PREVIOUS OWNERS had put down loose layers of tar paper and covered it with a green indoor/outdoor carpet. Although it didn't look bad, it did not afford any protection in a heavy rain.

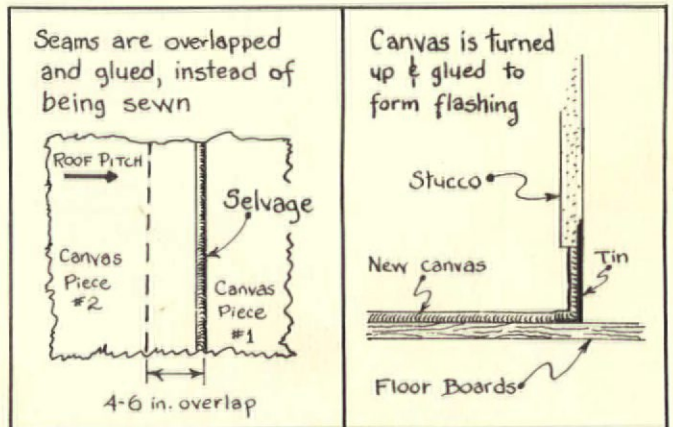
AFTER STUDYING VARIOUS re-roofing alternatives, we concluded that re-canvassing would be best. Canvas gives a trim-looking waterproof surface that can be walked on in all weather, without tearing or becoming gummy in the summer. But we learned that no one did canvas roofs anymore as the cost of labor would be prohibitive. An awning manufacturer did outline the procedure for us, which was not difficult—but tedious. Fortunately, Rich is a sailboat enthusiast and knew that our new canvas roof would be similar to a canvas boat deck. So we bought canvas at the awning company and all the other supplies in a marine store. We purchased:

- 10½ yd. of 60-in.-wide #4 Duck Canvas, costing \$72.50
- Several cans of waterproof marine adhesive and several cans of marine paint (\$66.80)

HERE'S WHAT WE DID: Rich pulled up the old canvas, cutting it where it went up under the wall. He scraped the floorboards clean of any old glue, leaving a smooth, clean surface.

WE KNEW THAT we could not cut and sew the canvas to exact porch size as had been done originally, nor could we tuck the edges up under the wall. We decided to overlap the seams 4 to 6 in., leaving the uncut selvage as the exposed edge. We then ran it up over the tin to meet the wall, a rise of about 4 in. on all sides.

WE CAREFULLY LAID OUT the first piece of canvas, then rolled back one end. We applied glue to the floor boards liberally, then smoothed the canvas into place. Next, we rolled back the other end and started to glue out from where we had left off. This enabled us to sit on the part that we had initially glued down.

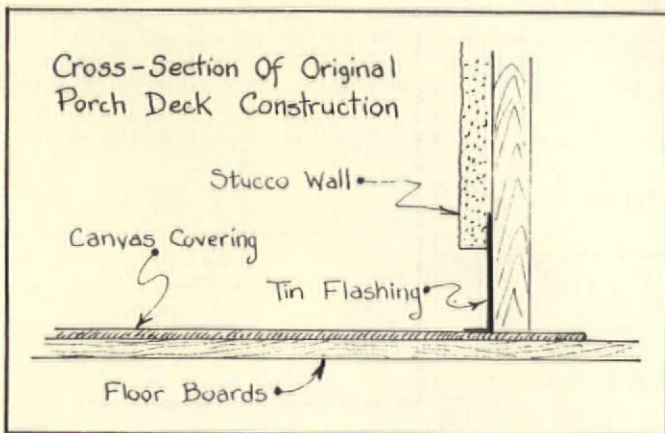


WE DID THE PIECES on the sides last. We had cut the pieces several inches longer than the actual measurement to allow for shrinkage during gluing. But it turned out that the canvas did not shrink, so we had plenty of material.

WHEN WE FINISHED with the floor, we started gluing up the side walls, making sure the canvas was pressed into every inch of the metal. We cut the cloth right at the stucco and gave it an extra coat of glue to stick well at the edges. For the corner drain, we cut and fitted the canvas right down into the pipe and glued it in place.

NEXT, Rich coated the entire canvas surface with two coats of adhesive, letting the first coat dry overnight. This waterproofed it.

LAST STEP was to put on two coats of marine paint over the glue coats. The instructions are to renew the top paint coat when it begins to look dull after several years. We have had several good rains since re-canvassing and nary a wet spot below.



Products For The Old House

Architectural Mouldings



SAN FRANCISCO VICTORIANA has a new catalog of architectural mouldings available. They produce 150 Victorian redwood mouldings in 26 categories.

THESE MOULDINGS CAN be used for restoration or in new construction to restore or create authentic Victorian styles. The 26 moulding categories were used by architects and builders of 1850-1920 vintage houses in San Francisco and around the country.

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TO ORDER THIS CATALOG, send \$1.50 to: San Francisco Victoriana, Dept. OHJ, 606 Natoma Street, San Francisco, California 94103.

Helpful Publications

Housebuilding In Early Canada

"**B**UILDING A HOUSE IN NEW FRANCE" is an unconventional account of housebuilding in early French Canada. It describes the social background of popular architecture and shows how the evolution of the "Canadiens" was mirrored in the houses they built.

ALTHOUGH the author, Peter N. Moogk, provides a scholarly account of building techniques before 1760, he has also written a human and lively story. Anyone who enjoys reading about how houses were built, and why, will find this book fascinating reading.

THERE ARE MANY 17th and 18th century maps and illustrations and superb line drawings of the typical French Canadian houses by Toronto artist Carole Richards.

THIS BOOK has won the Sainte-Marie Prize given by the Ontario government and the Ministry of Culture and Recreation has worked closely with the publisher to produce a high quality publication.

TO ORDER "BUILDING A HOUSE IN NEW FRANCE" send \$10.95 (includes postage and handling) to: Ministry of Culture and Recreation, Huronia Historical Parks, P. O. Box 160, Midland, Ontario L4R 4K8, Canada.

Home Insulation

THERE is information available, from the National Mineral Wool Insulation Assoc. in cooperation with the Better Business Bureau, to aid the home owner who is trying to save energy and trim fuel costs.

"FACTS ON HOME INSULATION" (BBB-04-135) contains an insulation checklist, explains the "R" value of various insulation materials, and facts about doing it yourself. Price is 40¢ and a stamped, self-addressed envelope.

"HOW TO SAVE MONEY INSULATING Your Home" gives practical instructions and advice on doing the job yourself or hiring a contractor. It also discusses insulating, weatherstripping, storm doors and windows, and caulking. Price is 30¢ plus stamped, self-addressed envelope.

WRITE TO: National Mineral Wool Insulation Association, Inc., 382 Springfield Ave., Suite #312, Summit, N.J. 07901.

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Window
Glass

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Coming Next Month

SOLAR HEATER FOR THE OLD HOUSE

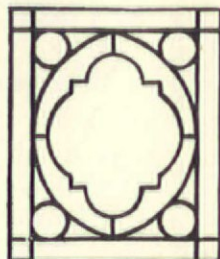
By H. Weber Wilson

OF ALL THE MATERIALS that make up an old house, window glass is probably the most taken for granted. Without a complete pane in every window, a building today is considered a derelict, yet just a few hundred years ago window glass was something only the well-to-do could afford. Today we can so easily obtain glass in all shapes, sizes, colors and textures that it is hard to realize that without it, a house would be little better than a cave.

WINDOW GLASS has come a long way since the discovery in about 3000 B.C. that heating sand (silica) and soda produces a liquid which will cool into a hard, transparent material with many utilitarian purposes. For the first few thousand years, however, glass was only worked as a viscous liquid--the craftsmen taking long "pulls" as if from a pot of taffy, and wrapping them around a clay mould.

THIS "CORE-WINDING" process produced beautiful bowls and other vessels, but it wasn't until about 50 B.C., when glass blowing was discovered, that flat glass became a possibility.

SHEET GLASS was still centuries away, although some Romans saw the possibilities of using "cast" glass in windows.



The pieces they installed were 1/2 in. thick or more and almost opaque. This early window-fill was also of such uneven thickness--and was so full of air bubbles, pits and other imperfections--that for many generations after St. Paul one had no choice but to "see through a glass darkly."

AND GLASS was usually too expensive to be used for such mundane purposes as windows. By the year 1100 A.D., a square foot of glass cost \$1.50. The average weekly wage was 25¢.

BUT IT WAS THE PEOPLE of the Dark Ages who saw the luminating possibilities of glass in window openings. Stained glass windows began to decorate churches and cathedrals around the year 1000, and reached their aesthetic high point in the 13th and 14th centuries. Small pieces of colored glass were held together with lead strips called "came" and figures, scenes, and decorative details were painted on the glass.

THE RESULTING RELIGIOUS ARTWORK did not serve as windows in the practical sense, as they were normally placed high above eye level and were designed to be looked at, not through.

(Continued on pg. 42)

A Log Farmhouse Lovingly Restored

HIGH IN THE POTOMAC HIGHLANDS of West Virginia, the 123-year-old log farm house of Mr. and Mrs. Robert Snyder has a special meaning for the whole family. This log house has not only belonged to the patrimony for over a hundred years, but it is continually the witness of a common effort by the whole family for its restoration.

THE HOUSE ORIGINALLY on the site was built in 1853. Noah Snyder, the present owner's grandfather, purchased the property in 1856. In the late 1860's two other log cabins on the property were moved and added to the main house--one aligned with the original house and the other placed at a right angle. Some time around 1870 the three separate units were joined together to form a single "L" shaped house, all weatherboarded, painted white and under a metal roof.

THE PRINCIPAL RESTORATION of the house began in 1973 when Bobby Snyder and two of his friends, after completing their studies in New York, decided to test their knowledge. Bobby's great-grandfather Noah's farm gave him the perfect opportunity as he was also anxious to restore the farm for his parents to live in in their retirement. They had spent the past 35 years overseas and had not had the time to modify the farm for their future needs.



WHEN THEY BEGAN, the farm was a typical representation of a poor 19th century mountain farm dwelling in a definite state of neglect. Since the fireplaces had been plugged, now there was only makeshift kinds of heating. There was no insulation, the mortar between the logs was crumbled and the windows were not what one could call weatherproof. The wooden floors of the living room, downstairs bathroom, porches and kitchen were weathered and uneven.

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Published by The Old-House Journal Corporation, 199 Berkeley Pl., Brooklyn, N.Y. 11217. Tel. (212) 636-4514. Subscriptions \$12/yr. in U.S. and Canada; \$20/yr. elsewhere. Printed at Royal Offset Co., 34 W. 15th St., NYC 10011. Contents of the Old-House Journal® are fully protected by copyright and must not be reproduced in any manner whatsoever without specific permission in writing from The Editor.



The fireplace in the dining room (the old kitchen) contains the fireplace that Bobby's great grandmother used for cooking. The original chairs were re-woven with oak splits and are gathered around the original walnut table.

There was no liveable space on the second floor which had been used as a storeroom for papers, antiques, furniture and other accumulated artifacts for the past twenty years.

IT TOOK A GOOD BIT OF REFLECTION—but they eventually decided to take down the boards covering the interior walls and ceiling of the living room. Visiting relatives, spending vacations at the farm, helped with the labor. As dust flew everywhere, they found that the space between logs and boards had been an animal cemetery for everything from squirrels to rats.

IT WAS EXCITING TO DISCOVER the primitive appearance of the room as it was several generations ago. The logs were still whitewashed, and the mortar between them was crumbling. They called in a local plasterer who was reputed to be skilled in matching old mortar. After much back-and-forth, they selected a composition of plaster and cement mixed with carbon black giving a dark grey.

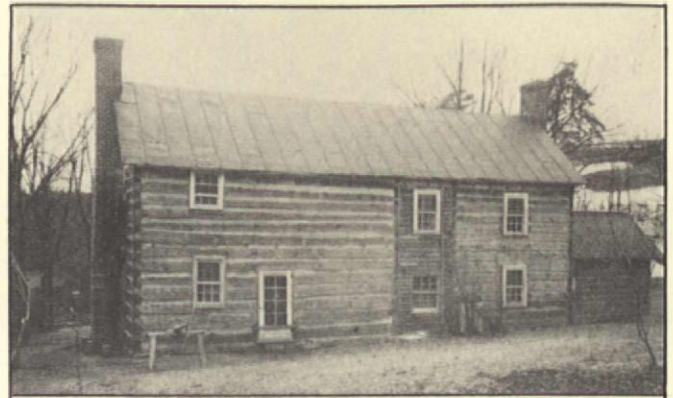
WHILE IN THE MIDST of demolition, they decided to redo the living room floor, which was composed of boards on sleepers. The old floor, warped and uneven, was taken up and replaced with rock and dirt fill covered by a 4-in. layer of concrete. This was topped with paving bricks, chosen for durability and a color that complemented the rusticity of the logs.

CLEANING OLD WHITEWASH off the logs was quite simple: They brought a hose into the house and hosed it off. It was tedious, however, digging out the residue encrusted in the cracks. Ceiling and walls then received a coat of boiled linseed oil. The result of this operation was remarkable: The logs changed from a pale brown to a honey color marbled by the natural grain of the pine. The feeling in the entire room became much warmer. Too, hand hewing marks—the work of earlier Snyders—became much more visible.

IMPORTANT CHANGES were made in the kitchen. Originally, it had been separated from the



Spinning wheel belonged to Bobby's great-grandmother and African artifacts were brought back from overseas by his parents.

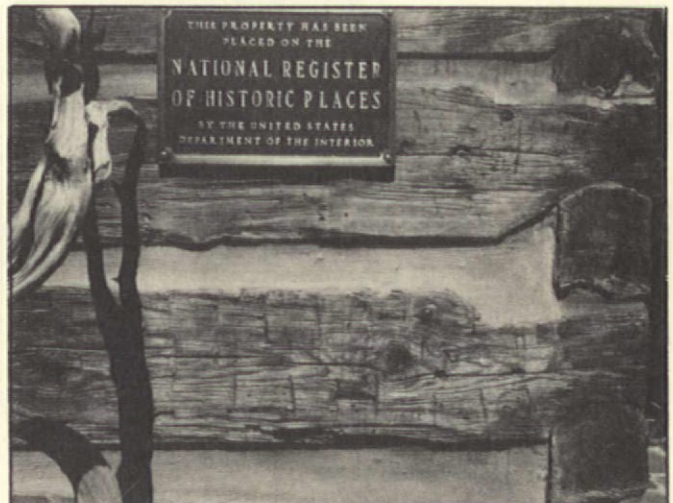


Back view showing the three original log houses, plus (at the right) the recent addition that houses the furnace, water-pump and hot-water heater.

rest of the house. Annie and Bobby decided to saw an opening in the logs on the north wall, giving access to a breezeway that they converted to the kitchen. To give additional access to the main living room, they added a vestibule-walkway enclosed by French windows and door. The old kitchen was then turned into the dining room.

SO MANY TASKS were completed by Annie and Bobby (and their relatives) that they can't be described in one article. Among the projects: Stripping "Civil War Gray" paint from mantels and door frames; removing weatherboards from the exterior to expose the logs; building a split-rail chestnut fence; adding another ten rows of bricks to the chimneys for aesthetic reasons; refinishing and repairing the house's furniture; rebuilding the porch on a new brick platform; repainting the roof its original barn red.

ALTHOUGH MANY PROJECTS remain, they provide a splendid reason for the family to reunite in the summer at Noah Snyder's Farm. ■■



The Noah Snyder Farm was put on the National Register of Historic Places June 10, 1975.

Stopping The Burglar With A Do-It-Yourself Alarm System

By Ronald W. Pilling, Baltimore, Md.



HE'S AFTER YOUR TELEVISION, your stereo, your jewelry, and if he is sophisticated enough, he's after your antiques. "He" is the sneak-thief. Although often associated with downtown neighborhoods, he is also thriving these days in the suburbs and in many small towns. The homeowner can secure his property to some extent with hefty locks. But many restorationists are investing in the added security of an alarm system.

THE MAJORITY OF BURGLARIES are perpetrated by amateur thieves—desperate and careless criminals who are probably more scared than their intended victims. Residential alarm systems capitalize on this, as their clanging bells, blinding lights and whooping horns are intended to put to flight the terrified intruder.

ALL BURGLAR ALARMS have three components: A master control, a means of detection, and a warning device. The most space-age of those on the market is the ultrasonic motion detector, a system that projects an inaudible field of sound waves throughout your chosen room. The control analyzes the wave patterns, reacting to any motion in the field, and activates any combination of ear-splitting alarms.

THIS SYSTEM IS EASIEST to install—you just plug it in and aim it. It is not inexpensive, however. Montgomery Ward lists a 3M ultrasonic alarm in their catalog for \$150. It only protects a limited area—normally just the room in which you put it. There is another major drawback: The crook has to be inside the house to set it off. In addition, the motion detector is subject to false alarms caused by moving curtains or pets who wander into the sonic field.

Wireless Systems

OTHER WIRELESS SYSTEMS include those with small radio broadcasting detectors at each window and door. Since there is no wire to run, installation is simple. Again, this device is subject to false alarms (in this case from random radio signals). Neither is it

cheap, with each window switch costing \$40 and up.

ALL MAJOR ALARM INSTALLATION companies, such as ADT, rest their reputations on the standard wired system. The detection loop consists of wires leading into various detectors: Magnetic switches, foil tape for window glass, pressure-sensitive door mats, and vibration detectors. Current circles the loop perpetually, and when the circuit is broken (or closed, depending on the type of system used), the alarm goes into action.

Wired Systems

WE CHOSE JUST such a wired system after deciding that a burglar alarm would be a wise investment. We installed it ourselves—at about one-quarter the cost of a professionally installed alarm. We used a system marketed by Radio Shack, and manufactured by Universal Security Instruments, 2829 Potee Street, Baltimore, Md. 21225.

EACH WINDOW AND DOOR is armed with a magnetic switch mounted on the frame. Several basement windows are further protected by foil tape. The master control box hangs on the wall in the vestibule (we have two pairs of front doors). The master control includes the electronic components, a powerful 8-in. bell, the battery which powers the system, and a key-operated on-off switch, all in a tamper-proof steel box.

HERE'S HOW IT WORKS: When leaving the house, the system is activated with a key after the last door is closed. This means that the master control box must hang outside the last guarded door. If a would-be thief disturbs a circuit, the bell issues a window-rattling warning, and keeps ringing until it is turned off with a key. At night, the alarm can be turned on with a switch from inside, preparing each of the detectors for a possible intrusion.

WE LIKED THE RADIO SHACK system because it offers thorough protection at a reasonable

price. The basic alarm sells for \$70, and in addition to the master control box it has six magnetic switches, wire, window and door decals, and a "panic button." This button can be mounted anywhere in the house, and when pushed it sets off the alarm. Thus, if an intruder gets into the house without setting off the system and you hear him, pressing the "panic button" will set off a racket that will send him on his way.

Flexible System

YOU CAN PUT AS MANY detectors on the system as you need—and install additional bells or sirens so that the alarm will deafen everyone within four blocks. Any detector intended for a 12-v., closed-circuit system will work. Installation can be done gradually. You can begin with a simple loop on a couple of doors and windows, and as restoration work proceeds from room to room, you can add more detection apparatus.

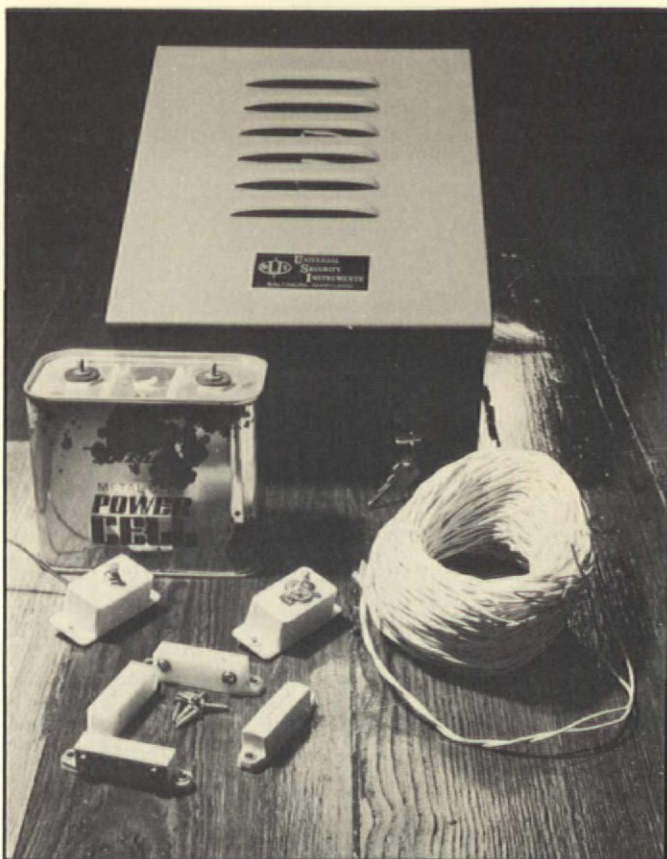
HEAT DETECTORS can also be wired into the alarm. The manufacturer has a broader selection of peripheral devices than Radio Shack. USI will send a catalog and installation hints if you write to them.

OF COURSE, it is necessary to run wire from switch to switch, beginning and ending at the master control box. This makes the wired system the most tedious of all to install. Tedious—but not difficult. As it is a low-voltage system, you need use only light bell wire, and the detection loop is only a one-wire circuit. It's easy to slip this thin wire behind baseboards, etc., and even if you have to gouge out the plaster to get the wire to a window sill, only a very thin slot is necessary. In fact, with a little ingenuity you can make the whole system almost invisible.

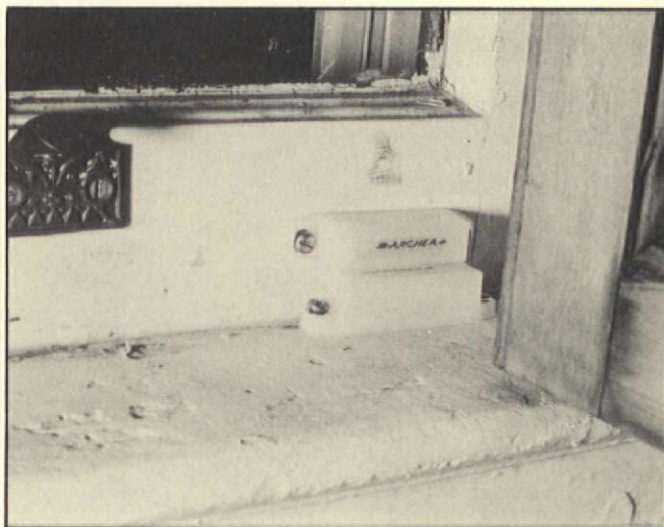
ALTHOUGH THE FIRST FLOOR will be your major concern, don't forget that other doors and windows may be accessible. Your opponent may be a "second-storey man" or a "porch climber." The switches are cheap, so plan one at every window and door with even the remotest chance of intrusion.

THE SYSTEM IS TOUGH for a crook to disarm. If all the wires are well-concealed, he won't be able to find them and short-circuit the detector. If he severs a wire, the alarm goes off. If he tries to meddle with the master control box, his ears will ring for days. The odds are, though, that after seeing the decals on your doors and windows, the thief will just walk away, looking for an easier target.

YOU CAN EASILY become a fanatic about protection when you see all the devices you can attach to your system. There's a hospitable-looking doormat which, when stepped on, lets the prowler know he should depart. A vibration detector will trigger the alarm when the wall to which it is attached vibrates. You can even devise your own detectors. For example, if you securely attach a wire to a valuable object, so that the wire has to be broken in order to make off with the prize, a thief will trigger the alarm. ■■



Basic components of the wired system: Master control box (top) contains battery, bell and electronic components. Magnetic switches are in foreground. System is turned on by key in bottom of master control box. A trusted neighbor should have a spare key in case alarm goes off while you are away.



Magnetic switch guards each door and window. Magnet in top half keeps switch in bottom half closed in normal position. Wires are brought into bottom half—and are concealed to prevent tampering.

But this was the precursor to installing glass as an invisible plane between the interior and exterior environments.

FROM THIS EARLY USE of stained glass in churches, the wealthier class began to put similar windows in their homes, often replacing religious motifs with heraldic symbols and other secular decorative patterns. The less wealthy saw the value of glazed windows, and the well known casement type window made of diamond shaped "quarries" or "quarrels" held by lead strips emerged as the first widely used domestic window.

BUT THE QUALITY of this glass had advanced little beyond that of ancient times, being thick, wavy, and invariably of a greenish tinge due to the iron oxide found in most sand. Indeed, the search for a clear or "water-white" glass became one of the great scientific challenges of the Middle Ages.

THE VENETIANS eventually discovered that the secret was to add "decolorizers"--instead of trying to make glass from something other than sand--and succeeded in making a greyish glass which was nearly transparent when blown very thin. This glass they called "cristallo" and the formula and other glass manufacturing secrets were jealously guarded on the island of Merano where Venetian glass production was kept isolated.

EVENTUALLY the secret of making clear glass spread across Europe and with it came improved production methods which made possible the increased use of glass in residential windows. It was discovered that if glass was blown, and the end of the resulting bubble cut off, it could be spun or twirled so that centrifugal

force would produce a flat disc. The best quality glass made in this fashion became known as "crown" glass, and if produced in 4 or 5 ft. diameters, had a considerable thin, flat area which could be cut into panes or other useful sections.

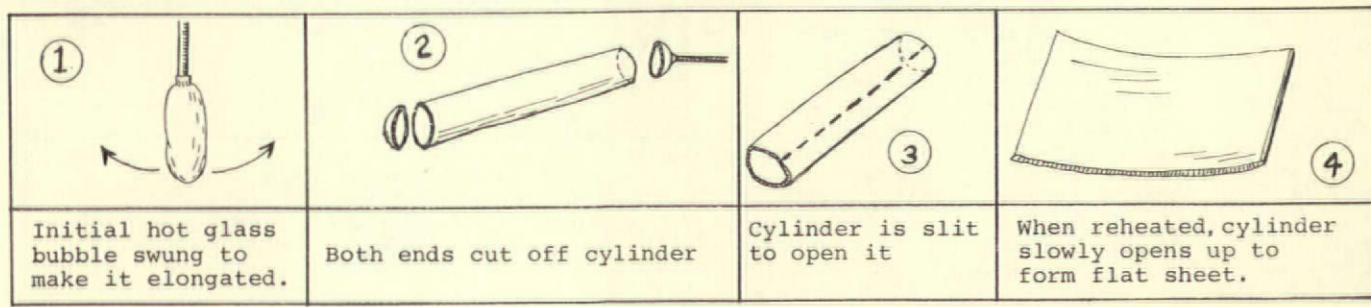
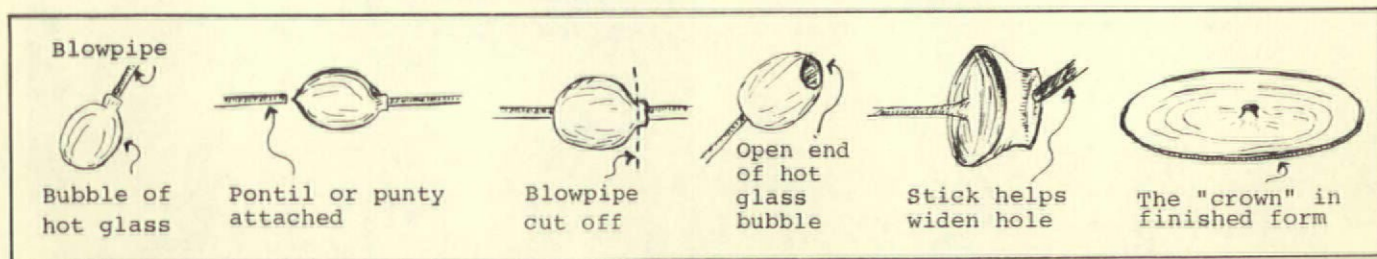
THE CENTER OF THE GLASS DISC, where the iron "pontil" or "pundy" had been attached, was considerably thicker and more irregular. It was not suitable for looking through, but in deference to the cost of manufactured glass, it was used with other "bulls-eyes" to make up a panel section, or set above an entranceway to let light into the otherwise dark central hall.

IN LATE VICTORIAN TIMES, the spun glass "roundels" again became popular, but usually in colored glass. Also referred to as "bullions," these special decorative pieces are frequently found in both simple leaded art glass windows as well as many produced by Tiffany studios.

CUTTING UP THE LARGE SPUN CROWNS into segments formed natural "fan lights" which were widely employed because of the small amount of wasted glass that resulted. These semicircular windows were very popular in the Classical revival movement that took over domestic architectural design beginning in the late 17th century. But even at this time, in both Europe and the American colonies, window glass was still considered a luxury.

GLASS MANUFACTURING in America was the first industry tried--but one of the last to succeed. Among the settlers in Jamestown in 1608 were eight Polish and Dutch glass makers who tried but failed to produce glass profitably. Some window panes were produced by Caspar Wispar in New Jersey in 1739, but it wasn't until 1792

Two Methods of Producing Early Flat Glass



that glass manufacturing was successful in America.

DURING THIS TIME window glass was expensive but not scarce in the colonies. Flat glass was a heavy product that packed well, and helped by favorable tariff rates, was a staple cargo aboard the vessels that called on the ports of the New World. The first Pilgrim houses were built without panes, but by the mid-1600's it was not unusual for a timber frame dwelling to boast casement windows with traditional leaded quarries.

AROUND THE BEGINNING of the 18th century a new manufacturing technique greatly advanced the production of flat glass. Instead of spinning roundels, hot glass was blown into an elongated bubble, which then had both ends cut off. This left a cylinder or "muff" of glass which, when slit down one side and reheated, would open up into a rectangular sheet. The broad glass, as it was sometimes called, was streakier, less brilliant, and more brittle than spun glass, but it had a more even thickness, and its great efficiency in producing window panes is apparent.

WINDOW PANES became standardized at 6 in. wide and 8 in. high and were set in narrow wooden "mullions" or "muntins" within a sash which could slide up and down. All this happened gradually with the first use of multipanes appearing four wide and two, three, or four rows high in each sash. Then the 12-over-12 windows gained acceptance as "proper"--until glass became available in larger panes and the 6-over-6 window became the vogue.

WINDOWS WERE OFTEN UPGRADED to meet architectural fashion, so dating a house strictly by the number of panes per sash is not reliable. But old glass per se can be quite easily spotted due to its optical irregularities and the peculiar metallic iridescence that comes only from long years of weathering. Another tell-

tale sign of age is glass that has turned pink, lavender or yellow. Often termed desert glass, this phenomenon is caused by the sun's ultra-violet rays reacting with manganese which was used in old glass as a decolorizer.

THROUGH THE MIDDLE of the 19th century, then, most windows contained basically the same thin, hand-blown, often very irregular glass. It took the industrial revolution to bring about the next dramatic change--the production of relatively inexpensive plate glass which made possible all manner of changes in architecture and the use of glass as a decorative element.

UNLIKE BLOWN GLASS, plate glass was machine-made. It began with the same basic ingredients but, instead of being fashioned by hand, it was poured onto a metal table, then flattened with a multi-ton roller, and slowly annealed or cooled until emerged as a sheet of very hard glass with uniform thickness and very few imperfections. Not yet transparent, plate glass then went through an even more complex procedure--the grinding and polishing of each surface so that the sheet became not only brilliantly shiny but almost optically perfect as well.

PLATE GLASS was not new in the late 1800's, but it took the advent of the machine age to devise machinery which could properly grind and polish sheets of glass as large as 10 ft. x 20 ft. and not do more harm than good.

IN 1880, not a single sheet of profitable plate glass had been produced in the United States. By 1883, however, the cost of plate had been cut in half, thanks mostly to the fledgling Pittsburgh Plate Glass Co. whose "Works No. 1" were located at Creighton, Pennsylvania. By the turn of the century, the American glass industry had made quantum jumps in the quantity, quality, and variety of window glass available to homeowners and shopkeepers.



A 19th century reproduction of a medieval-type window. Note the typically geometrically shaped pieces of thick, irregular glass. Windows such as these were designed to set in casements and let in light; looking through them was rather impossible.

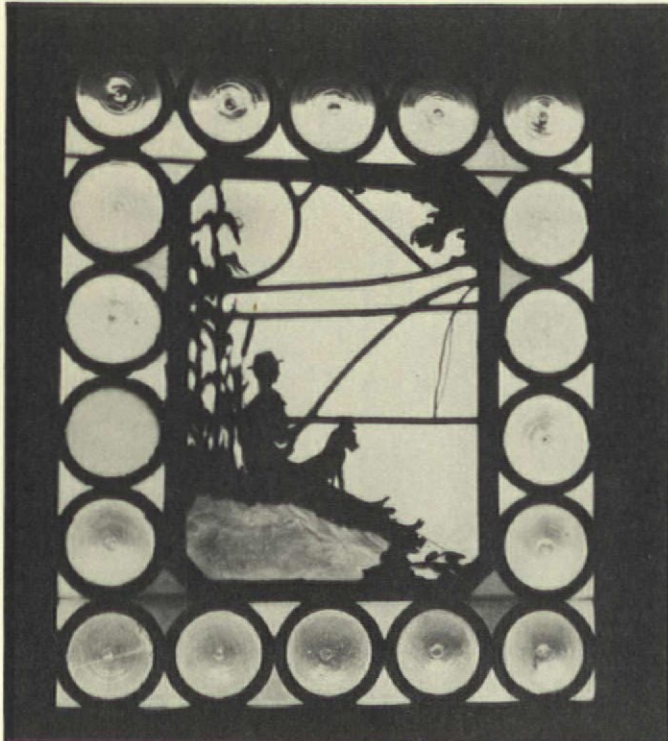


A typical Georgian style fanlight from above a front door. When glass was a scarce commodity, segmental windows such as this made very efficient use of crown glass, which was clear enough to see through although frequently wavy.

PLATE CONTINUED to be an expensive item and was never the primary glazing material of middle class houses. But it was used extensively for commercial purposes, and the resultant all-glass store fronts transformed the streetscapes of American cities and towns. Common window glass was also undergoing significant improvements, as attested by the adoption of heretofore unbelievably large window panes. Today we think nothing of houses with windows 3 ft. x 4 ft. or larger, not to mention the all steel and glass of modern high-rises; just 100 years ago, such expanses of glass would have been considered extravagant beyond belief.

DURING THIS ERA of increased quality and quantity and decreased price, glass also experienced a short but dazzling period when decorative windows were an accepted--even expected--part of any architectural project. Best known are the colorful stained glass windows (called "leaded art glass" windows by the firms that sold them) but there were several other special decorative methods employed, especially using only "white" (clear) glass.

THE EXTRA FANCY applications of bevelling, etching, and cutting will be discussed in a following article. Here are listed several additional glass treatments which are often overlooked but add significantly to the architectural appeal of Victorian and post-Victorian buildings.



A leaded art glass window from the early 20th century using a border of roundels. In medieval times, the entire panel might have been composed of thick centers of spun crowns. These roundels have tiny pontil marks and finished edges, attesting to their being "modern" although handblown.

Types Of Fancy Glass

SANDBLASTING produced a smooth, milky finish and was often used to give special border effects, especially for interior glass partitions of commercial buildings. In houses, many different stencilled patterns were sandblasted onto transom windows and door lights. Sandblasted glass has a frosted look similar to etched glass, but the surface remains even, the sand only dulling it not eating into the glass as is the case when acid is used.

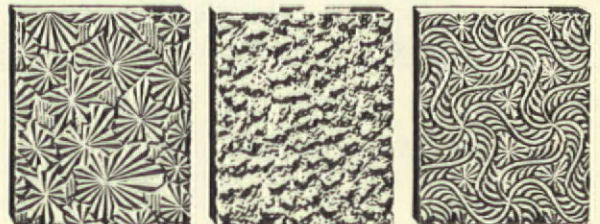
GLUE CHIP GLASS looks like frost has settled on the pane. This rough but elegant surface was obtained by first grinding or sandblasting the glass and then coating it with glue. When the glass was heated, the glue shrank and shriveled off, each flake taking a sliver of glass with it. Often the same sheet was treated a second time, creating a "double chip" glass. This glass is especially attractive when the edge is bevelled and polished.

ROLLED AND FIGURED GLASS was made in a vast assortment of ornamental patterns, the objective being to provide a source of light while still retaining privacy. The pattern was pressed or rolled onto one side of a piece of plate glass while it was still in the plastic state. The resulting figured glass was not further polished, but it can be a very interesting decorative touch when used with discretion. Figured glass can be found in colors other than white, almost always pale tones.

BENT GLASS is produced by taking a flat sheet of plate glass, heating it over a mould of the curve desired, and allowing the hot glass to sag into the desired shape. It must be carefully cooled, after which it is as strong as flat plate. Any special detail work must be done while the glass is still flat, and due to the risk of breakage, fancy curved panels that include cut and polished designs are not frequently found.

ROLLED GLASS PATTERNS

From a late 19th century
Pittsburgh Plate Glass Catalog



REPLACING SANDBLASTED GLASS means having a duplicate made, but most cities have at least one specialty shop which does modern reproductions. Check the Yellow Pages under "Carved" glass if there are no listings under "Sandblasting." A few calls to local stained glass studios will also often turn up the names and numbers of these studios.

ANOTHER POSSIBILITY is talking to the local monument (tombstone) maker. They do a lot of sandblasting and may be able to help if you come up with the stencil design.

GLUE CHIP GLASS is being produced by the Boulder Art Glass Co., 1920 Arapaho, Boulder, Colorado 80302. They also do specialty sandblasting.

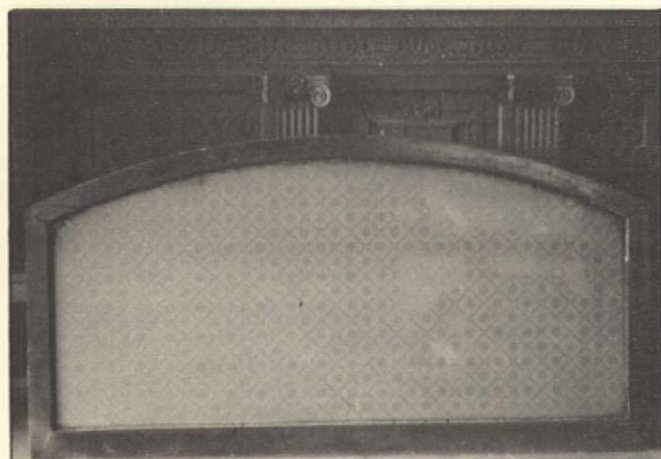
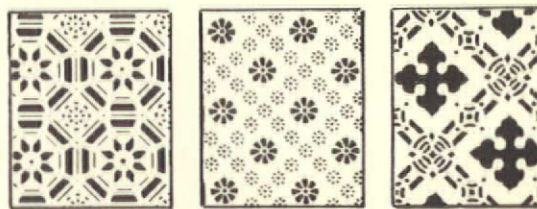
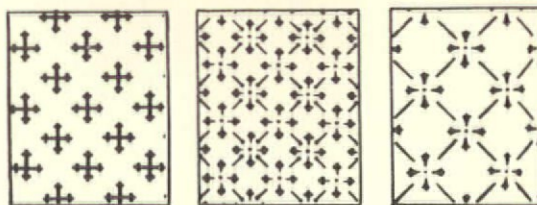
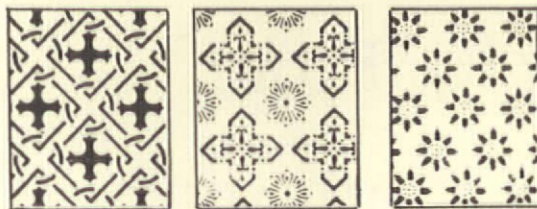
ROLLED AND FIGURED GLASS was once a common product of glass shops, but both its use and availability have greatly declined. Larger glass shops will often have at least smaller panes of old stock, and with some searching, its likely you can find at least a close match to the pattern you need.

BENT GLASS can usually be ordered from a large glass shop, although the cost is high, about \$40-\$50 just for the set-up of preparing the mould. There are really no standard sizes in curved panes, as each replacement usually requires a new pane be made in order to be the exact fit. Measurements are very important when ordering: Normally the width across the curve is given first, then the height, or straight dimension. Be sure to double check the measurement details with whomever takes your order.

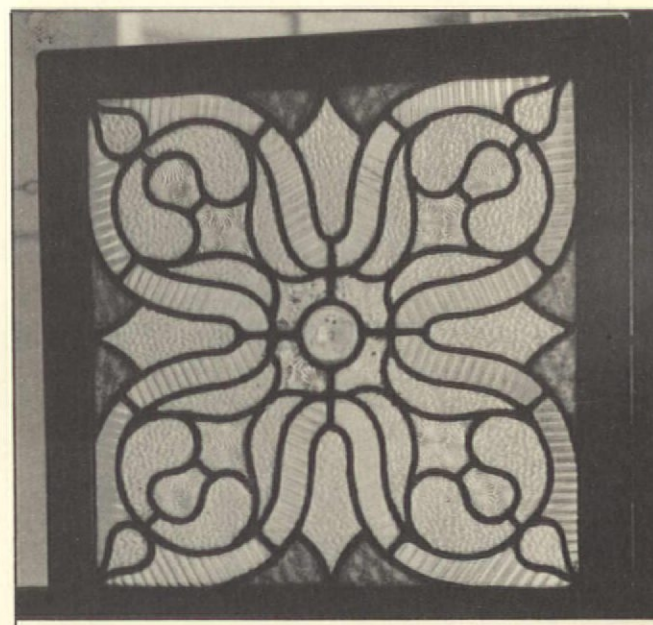
IF YOU HAVE TROUBLE finding bent glass, try B&L Antiqueries, 25011 Little Mack, St. Clair Shores, Michigan 48080, or Heritage Art Glass Company, 1404 E. 3rd, Tulsa, Oklahoma 74120. ■

Etched Glass Patterns

These patterns for etched glass panels are from a late 19th century catalog of the Pittsburgh Plate Glass Company.



A transom light salvaged from an 1880's house. The pattern was sandblasted onto the glass using a stencil.



This c. 1900 window, originally in a front door, combines three different types of white patterned glass with a pale yellow middle and a white roundel in the center.

Avoiding Hazards From Lightning

By Frederick Herman, A.I.A.

HERE ARE TWO SUBJECTS about which people are greatly misinformed and which they fear: Snakes and lightning. Since snakes don't have much application to old-house restoration, I'll confine my remarks to lightning—and when it's advisable to install lightning rods.

THE QUESTION OF whether you need lightning rods on your old house is not a simple one to answer. A U.S. Government publication, for example, declares: "Experience has proved that when the equipment (lightning rods) is carefully selected and installed the protection is almost complete." This does not tell you, however, whether you need lightning rods in the first place and, if so, WHERE you need them.

FIRST POINT to recognize is that the needs of city dwellers are far different from those of a homeowner in the country. Second, today's houses are built far differently (as regards conductivity) than they were in Benjamin Franklin's day when lightning rods were first developed.

LIGHTNING ROD SYSTEMS provide a path of low resistance for the harmless discharge of a lightning bolt to the ground. In Franklin's time, houses contained no such paths. Today's houses are filled with such paths in the form of metal plumbing lines. Plumbing vent stacks usually extend above the roof—and the soil lines to which they are connected are well grounded in the earth. Too, there is a maze of electrical wiring—all of which has to be grounded according to the requirements of building codes. If you are the owner of a TV antenna you have what is in fact a grand lightning rod (assuming the unit has been properly installed).

CITY DWELLERS usually are surrounded by structures and things such as power lines that are much more attractive to lightning than a small home. What might be much more threatened than your house could well be that lovely tall old tree in your yard. Unless you are really ter-



rified of lightning and feel that you need protection to calm your nerves, city dwellers might as well dispense with lightning rods.

Hazards In The Country

IF YOU LIVE OUT IN THE COUNTRY, the hazards are more real. Most of the damage done by lightning occurs in rural areas. In his book "Lightning Protection," J. C. Marshall states that lightning is "a major cause of farm-building fires and is responsible for about 80% of all livestock losses due to accidents."

ONE SHOULD, however, keep a sense of perspective. Lightning is not a sinister force wreaking unspeakable havoc across the land. Yet, annual losses in the U.S. run to around 600 killed, 1,500 injured and \$100 million in property damages (including forest fires and livestock losses). Worldwide, losses run to 6,000 killed and \$1 billion in property. While these are small numbers compared with the annual highway carnage, and damages from earthquakes and other natural disasters, the losses are still appreciable. (Fatalities from lightning, for example, are far greater than from shark attacks, which caused such mass hysteria a couple of years ago.) None of the statistics mean much, of course, if you happen to be a victim.

IN EVALUATING NEED for lightning protection, rural dwellers should bear in mind that you are protecting two different things: You and your property. Lightning protection is usually more intended for the safety of the occupants

of a structure rather than for the prevention of material loss.

REGARDING your own protection, common sense can help as much as a lightning rod. If you are indoors during an electrical storm, not much can happen to you if you avoid the obvious like not operating electrical tools, and not picking that moment to keep a firm grip on a radiator or to take a bath. (Both the radiator and the bathtub are connected to the grounded plumbing system—which is a likely path for any lightning bolt.)

AS FOR YOUR HOUSE, the old saying is largely true: If the shadows of the trees fall on the roof of your house, the house is safe from lightning strikes. (The house is safe—but the trees aren't.) If your house stands in solitary splendor, by all means get a lightning rod system installed.

Menace To Outbuildings

BARNs, SILOS AND OUTBUILDINGS are more threatened as they contain very few of the conductive materials (piping and electrical wiring) that provide some protection to dwellings. Here, lightning rods may be a good investment.

THERE IS NOT MUCH you can do about livestock wandering around in a thunderstorm. About the only precaution you can take is to make sure that your wire fences are properly grounded. Lightning bolts can travel as much as two miles along non-grounded wire fences—and woe to the animal (or person) standing next to such a fence that gets hit.

AND OF COURSE, if you find yourself outside during a thunderstorm, don't stand under trees or upright in open fields or on beaches.

Checking Out The System

IF YOU BUY AN OLD HOUSE that is equipped with lightning rods, first thing to do is to call an expert on lightning rods. This is emphatically NOT a do-it-yourself project. You are dealing with electrical forces that can exceed 200,000 amps, reach a million volts, turn the sap in living trees to steam, heat wood to ignition temperature, melt wires and rods, and leap a mile or more through the air.

YOU ARE PROBABLY BETTER OFF without a lightning rod system than an improperly installed one or one that has been allowed to deteriorate. If in doubt, get rid of the thing until you can get an expert to put in a proper one. A close visual inspection should show whether or not the conductors are all in one piece, whether or not someone laid a new roof over the top of them (don't laugh—I have seen it), whether the whole system is firmly fastened in place, and whether the system is properly grounded. Proper grounding in deep soils of moist loam over clay or similar soils means an in-ground conductor 8-10 ft. long. In dry soils the problem gets far more complicated.

A piece of pipe stuck a foot or two into the ground is first rate evidence that your system is defective!

Trees In Peril

OFTEN OVERLOOKED, but just as important as protection for your building, is protecting major trees on your property. This, unfortunately, is a complicated—and not inexpensive—project. You just don't stick one lightning rod in a tree and call it quits. On the other hand, a hundred-year-old tree can't be repaired like a house can. Too, the damage lightning causes to trees is usually much greater than the damage caused to a house. Special attention should also be given to trees close to your house—which might send limbs through your roof if they were struck.

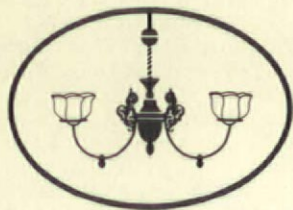
HERE ARE SOME guidelines should you opt to have lightning rods installed. They are taken from a U.S. Government publication "Lightning Protection For The Farm."

- HAVE the work done only by an experienced installer. Installation of a lightning protection system IS NOT a do-it-yourself job.
- DON'T be hurried into buying a lightning protection system. It is an installation of vital importance and should be bought from a responsible company. Check and record the identification of the lightning protection salesman. Verify his connection with a responsible company.
- OBTAIN the names of three customers for whom the company has made installations and check with them as to quality of work.
- DON'T allow work to begin without proof that the company carries Workmen's Compensation Liability Insurance.
- PERSONALLY verify that the rods, cables, ground rods and connectors used in the system carry the Underwriters' Laboratories label, and that the lightning arrestors carry the manufacturer's name.
- MAKE sure that you sign an application blank for a U/L "Master Label." The installer should have the form. You will receive the "Master Label" plate (4 x 2½ in. brass plate) in the mail from Underwriters' Laboratories through the manufacturer of the equipment.
- INSIST on a contract listing all of the parts in the system.

IF YOU WANT to bone up on technical details before contacting an installer, you could consult the book "Lightning Protection" by J. L. Marshall published by John Wiley and Sons in 1973. ■■

Frederick Herman, A.I.A., is a partner in the architectural firm of Spigel, Carter, Zinkl, Herman in Norfolk, Va. Besides his extensive professional involvement with restoration, Mr. Herman has also served as chairman of the Virginia Historic Landmarks Commission.

Products For The Old House



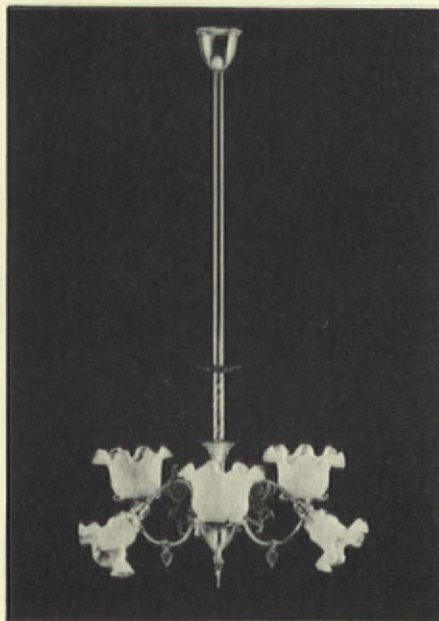
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Chimney Brushes

ANYONE WHO uses a fireplace or stove to burn a lot of wood eventually requires either a chimney sweep or a chimney brush--if you plan to do it yourself.

THE ACCUMULATION of creosote and other combustible materials will inevitably lead to a chimney fire. And if it doesn't burn the house down, it will probably wreck your chimney and scare you half to death.

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IT DISCUSSES, with illustrations: Removing paint, replacing broken windows, how to finish dry wall joints, taping cracks, removing old wallpaper and preparation for papering.

THE FULL RANGE of Hyde Tools is pictured and explained--tools for scraping, puttying, and knives for craft projects.

THE BOOKLET, "How To Prepare Surfaces For Painting & Decorating," is 50¢ from: Hyde Mfg. Company, Dept. O, 54 Eastford Road, Southbridge, Massachusetts 01550.

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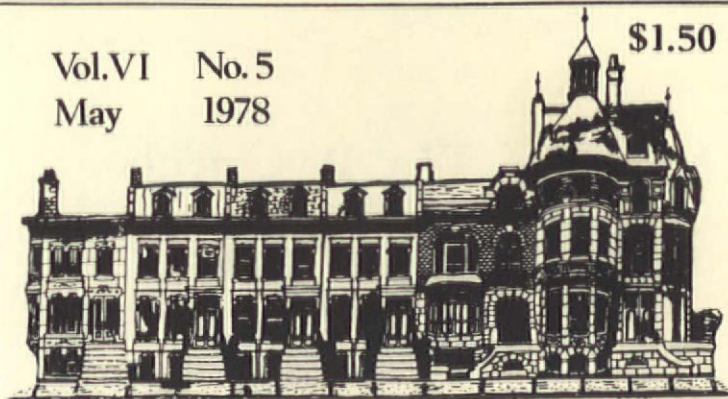
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Restoration And Maintenance Techniques For The Antique House

Solar Heater For An Old House

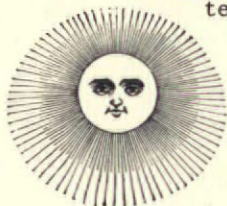
Combining solar collectors with old architecture is quite a design challenge. In the following article, the author describes a simple, unobtrusive unit he designed and installed that acts as a preheater for his hot water system.

By Kenneth M. Turner, Sacramento, Calif.

USING THE SUN'S ENERGY as a hot-water heat source is hardly a new idea. There were companies in California and other sun belt states making solar water heaters shortly after the turn of the century. But most of them went out of business during the recently ended era of cheap energy.

I HAVE USED some simple turn-of-century technology to install a passive solar hot water preheater in my 100-year-old home in Sacramento. The system consists of a heating coil on the back porch roof and a storage tank in the attic. It heats water to about 20 F. higher than the daily maximum temperature as a pre-heat to the regular electric water heater. Water circulates through the coil by convection. No pumping is required.

THE COIL CONSISTS of 215 ft. of galvanized steel pipe painted black. A 16-year-old boy with no previous experience with plumbing put the coil together. As shown in the photo on the



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Coming Next Month

THE KITCHEN COMPROMISE

following page, there are 10 standard 21-ft. lengths of pipe laid level about 2 in. above an aluminum painted roof. (The aluminum paint reflects additional heat to the pipe coil.) The cold water supply is connected to the lower end of the coil. Hot water is returned to the top of the tank from the high end of the coil.

THE PIPE HEATING COIL is laid with a slight upward tilt from the bottom (cold end) to the top (hot end) so as not to stop the convective flow. Stop and drain valves are provided to permit draining the coil to prevent freeze damage.

THE TANK used as an accumulator in my system is a modified version of tanks used to accumulate pressurized water from wells. Hot and cold water are prevented from mixing through installation of 90° bends in thinwall conduit as shown in Figure 1. These are soldered to the inside of reducing bushings. I did a do-it-yourself insulation job on the tank, wrapping it in fiberglass insulation bats.

OPERATING EXPERIENCE WITH this preheater system indicates that the coil I'm using has the potential to heat 2-3 times more water than my storage tank will hold. Current plans call for expanding the heat storage capacity of the system by adding a second storage tank as shown in Figure 2.

(Continued on page 56)

More On Wet Basements

To The Editor:

ONE RECOMMENDATION made in the article on wet basements (OHJ Feb. 1978) could cause problems and some qualifications should be added.

THE SUGGESTION WAS MADE that serious water problems could be treated laying drainage tile alongside the inside bottom of the footings, which might require breaking up the concrete floor adjacent to the footings. There are two possible dangers in this course:

(1) IF THE WALL is under high hydrostatic pressure, it might crack or fall inward when the restraining influence of the concrete floor slab is removed.

(2) IF A TRENCH is excavated below the level of the footings and immediately alongside, the footings and wall could settle sideways into the trench.

THE RISKS can be reduced by taking certain precautions, such as doing a short section at a time. But readers should be aware of the chance they take, and act accordingly.

David Morley, Fort Steele Historic Park
Fort Steele, B.C.

To The Editor:

REGARDING THE ARTICLE on wet basements, there is no assured solution to a water seepage problem short of removing the source of seeping water. This can be done by:

(1) REDIRECTING surface water away from the foundation wall through surface regrading, use of splash blocks and/or piping downspouts to a storm water drainage system. If the ground water table is high enough to cause seepage, a dry well probably will not be dry and very likely won't work. Piping storm water into a sewer system is governed by local ordinances. There's a chance your local sanitary engineer will not be amused if you start overloading his sewage system with storm water.

(2) INSTALLING subsurface drainage systems to carry water away from the foundation wall. Typical systems are drain tiles, French drains, or a combination of both. Care must be taken to insure that such drains carry water away from, and not toward, the foundation. Again, these should not discharge into sewage piping.

(3) REPAIRING AND SEALING the exterior surface of the foundation wall. For minor problems, repointing deteriorated masonry may prove sufficient. An exterior waterproof membrane or coating may be necessary.

THE OLD-HOUSE JOURNAL®

Published Monthly For People Who Love Old Houses

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Published by The Old-House Journal Corporation, 199 Berkeley Pl., Brooklyn, N.Y. 11217. Tel. (212) 636-4514. Subscriptions \$12/yr. in U.S. and Canada; \$20/yr. elsewhere. Printed at Royal Offset Co., 34 W. 15th St., NYC 10011. Contents of the Old-House Journal® are fully protected by copyright and must not be reproduced in any manner whatsoever without specific permission in writing from The Editor.

A NUMBER OF CAVEATS should be discussed:

(1) EXCAVATION around very significant houses may be undesirable, especially houses on the National Register of Historic Places. An opinion from your state historic preservation officer could be useful in determining whether excavation might damage valuable archeological resources in the process of installing foundation waterproofing systems.

(2) THE USE OF high-strength portland cement mortar, especially as a stucco, is quite risky when dealing with old brick and stone masonry, whether in building or foundation walls. I recommend seeking advice from a preservation technologist or restoration specialist so that the wall is not inadvertently damaged. There are other hazards as well. According to my local gas company, portland cement repointing of my 1909 house foundation wall 20 years ago led to a corrosive deterioration of the natural gas service piping under my porch. I was fortunate to discover the leak before we had a tragedy.

(3) ANY COATING that might trap moisture in the wall will damage it. This includes cement stucco, waterproof paints or whatever. They should not be a last resort—they should not be ANY resort! As a matter of fact, I do not know of any reliable interior treatments for seepage problems that do not risk longterm damage to the foundation wall.

MY POINT is that half measures are not satisfactory over the long run and may create a larger problem than the one you are trying to solve.

John W. Kinney, Jr. AIA
Consulting Architect,
Historic Sites Section,
South Carolina Dept. of
Cultural Resources

An 1834 Landmark House Finds A New Home



By Barbara Schiller

ALLAN AND LEN RAYBURN'S LOVE for their Greek Revival house is quite literally a moving story. The city of Rochester, N.Y. owned the vacant, fire-damaged brick house and was willing to sell it to the Rayburns for one dollar if they would move it from its site.

THE RAYBURNS were delighted until they found out that it would cost \$25,000 to move the 150 ton, 20x50 ft. brick house. Back they went to the city officials. The Rayburns are determined people who were intent upon realizing their ambition to live in an old house in an urban restoration neighborhood.

THEIR ARGUMENTS WERE GOOD and they were not afraid to fight city hall. Their dream house was in the way of a new road, but because it was a landmark house the city could not raze it. However, its landmark status made the house eligible for Federal restoration funds.



The house as it was on its original site. There had been no indication that the back wing was an addition until it began to move away from the house when it was lifted onto the wheels.

These could be used for the moving costs. The several months that it took for reason to prevail over red tape were by far the most trying part of the Rayburns' experience.

HOUSE MOVING COMPANIES are easy to come by--just look in the yellow pages under "House and Building Movers." They have been at their trade at least since the Revolution, for the British expressed surprise at the colonists propensity for moving their houses around.

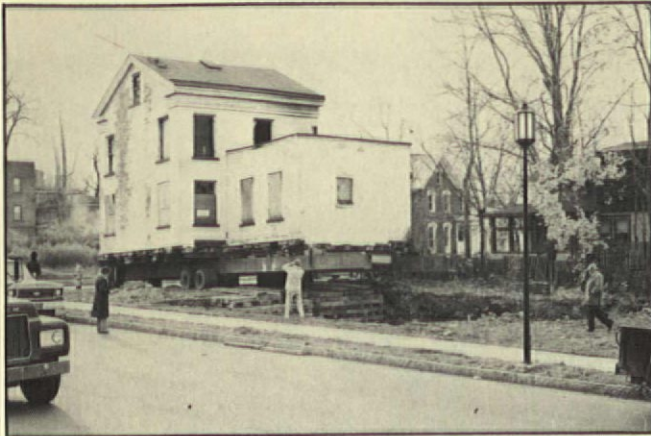
ONCE THE MOVER has been hired, the house owner (if one is the type) can sit back and relax. The moving company is responsible for getting the necessary licenses and permits and for taking care of any problems of clearance, such as overhead wires or tree branches. The company assumes total responsibility for the house; indeed, they buy the house from the owner for the duration of the move.

BECAUSE THE RAYBURNS' HOUSE was built with walls three courses thick and thus was unusually heavy for a house of its size, the choice of a mover narrowed down to the company that had the equipment to do the job.

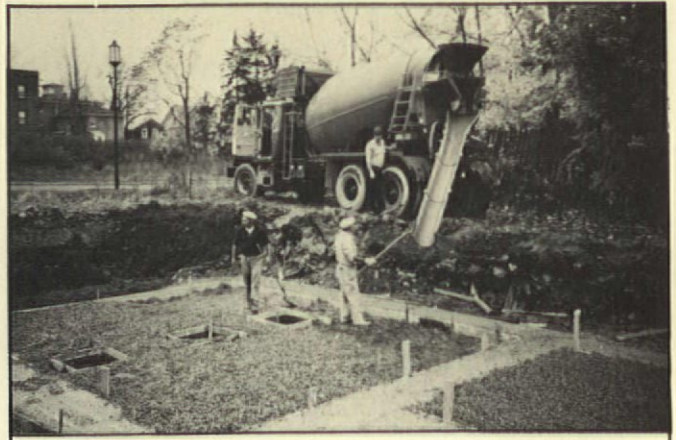
BEFORE THE MOVERS and their million dollars' worth of sophisticated equipment appeared on the removal site, the interior was gutted and the damaged frame wing bulldozed. Then the movers bulldozed everything around the house.

MOVING A HOUSE is an undertaking expressed in engineering terms--mass, weight, stress--and so it was that the Rayburns spent several days watching the crew of seven "play around" with the various procedures involving these factors.

TWO STEEL GIRDERS were pushed the length of the house. The old foundation was removed a block at a time and hand jacks inserted. Then 35 foot steel girders were placed every two feet under the 25 ft. width of the house. Next, wedges were inserted above each girder all around the house at the stone lintel separating the bottom course of brick from the foundation.



House being lifted onto 28 airplane wheels attached to axles running through girders.



Meanwhile, at the new site, footings are being poured and crushed stone brought in.

HOUSE-RAISING TIME had been reached. In the course of the several days preceding the trip to the new site, the house was to be raised as much as four and a half ft. up in the air by strategically placed hydraulic jacks.

MEANWHILE, AT THE NEW SITE, the foundation had been excavated and footings built. On their architect's advice, Allan and Len had the foundation purposely overbuilt to avoid settling. The footings were reinforced as if to support an apartment building.

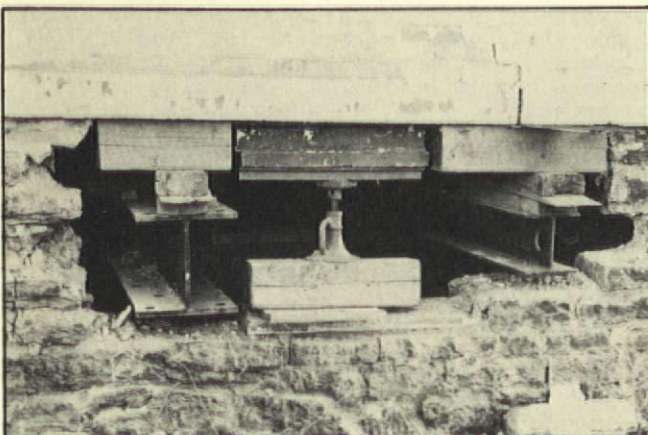
THE HOUSE WAS TO TRAVEL on its own wheels-- 28 airplane wheels attached to axles that ran through holes in the two main girders. One of the hazards in house moving can occur when the building sits on its wheels for the first time. It can crack. As the Rayburns watched, they heard a loud noise and saw a crack grow as the back wing moved a full two inches. It was eased back into place by driving the wedges in further. Prior to this unwelcome sight there had been no clue that the trip was not an integral part of the 1834 structure.

A ROAD LIKE THE ONE at the removal site was built. The house was set on jacks and cribbing was constructed in the excavation. The 4x4 oak beams were placed under the bearing walls to support the house until the masons laid the foundation blocks.

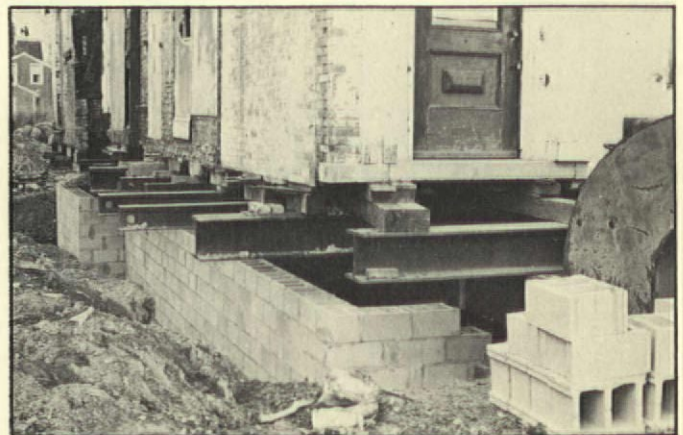
THE MOST IMPORTANT PIECE of advice Allan feels he can give is: "Get a good mason... A man who has a record of doing this sort of work successfully."

A ROAD OF 6x6 OAK BEAMS similar to railroad ties was built from the site to the street. The house, gooseneck attached, was now ready to travel behind a special low-g geared truck with a built-in torque convertor. Moving at a walking pace, the trip took two and a half hours to travel five city blocks.

FILL-IN UNDER THE HOUSE required 12½ courses and eight days' work. The first eight courses were laid in the conventional way. But for the last four and one-half courses the movers returned with a crane and a flatbed trailer. As the steel girders were pulled, blocks were laid three at a time all around the house. The last half course was the trickiest because the blocks had to be hand-laid and the mortar stuffed in by hand.



Temporary jack inserted to hold sill until house is lifted--note crack in mortar.



Close-up of foundation being built. Note wedges above girders to insure support.

PHOTO at right shows the house in its new site--with paint removed from the brick, small-pane windows restored and new twin chimneys.

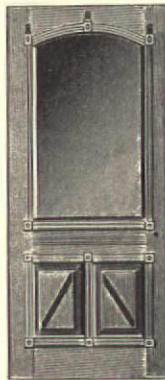
WOULD THE RAYBURNS do all this again? They not only would, they have. To save a lovely Greek Revival cottage from demolition, they purchased it solely to preserve another of their neighborhood's architectural treasures. The differences in cost are instructive.

WHEREAS THE BRICK HOUSE cost \$25,000 for moving, backfill and seeding of the old site, the frame house cost \$4,300. The other costs--excavation and backfill, \$1,000; the hooking up of water and sewer lines, \$1,000--are standard and were the same for both houses.

SO ENTHUSIASTIC is Allan about moving houses that he invites any Old-House Journal reader with questions about the subject to call him at his home after 8:00 p.m. (716) 546-1726. ■■



Protecting Exterior Doors With Varnish



IF YOUR EXTERIOR DOORS are natural wood or are grained (a painted imitation of wood) it is necessary to have a good coat of varnish on them at all times to protect the wood or the graining from being attacked by the elements--and particularly, the sun.

THE PROBLEM is sun and weather also attack varnish. When this happens, your front door can quickly become unsightly. We have had many readers call us and tell us that their doors, beautifully refinished or grained only two or three years ago, are now badly deteriorating--flaking, discolored spots, peeling patches, etc.

THE SOLUTION to the problem is to maintain the varnish in tip-top condition. This means varnishing at least once a year. If your door is in a particularly sunny spot, it could mean varnishing even twice a year. Varnishing a door in good condition is a simple, brief procedure.

BEFORE APPLYING A NEW COAT of varnish, the old finish must be sanded. If the previous finish is still in good condition, you must sand to take down the slick finish to a rougher condition in order to get good adhesion.

IF YOUR OLD FINISH is in poor condition, you have, of course, a bigger sanding job on your hands. But sand until it is even, leaving no peeling patches or discolorations. Remember to sand with the grain of the wood--sanding across the grain will cause scratches.

AFTER SANDING IS FINISHED, all dust must be removed by wiping with a tack rag. You can buy one at a paint store or make one with any piece of dry, lint-free cotton cloth. On the cloth, sprinkle varnish that has been diluted with 25% turpentine. Fold tightly, then wring the cloth out until almost dry.

IT IS ESSENTIAL to a good varnishing job that everything be absolutely clean--brushes, materials and surfaces as well as surrounding area.

WEATHER ALSO PLAYS an important part. A temperature below 70 degrees is likely to cause trouble. Humidity is also a problem and can cause "blooming"--a thin deposit of foreign material--caused by moisture in some form on the varnish while it is drying.

USE A VARNISH THAT is clearly labeled for exterior use. This can be a spar varnish--a very durable varnish designed for severe weather conditions. It gets its name from its original use on the spars of ships. There are also varnishes, not as heavy as spar, that are intended for exterior use such as McCloskey's Exterior Satin Varnish. ■■



Combating Decay In Shingle Roofs

By Theodore H. M. Prudon

EXPERIENCE HAS SHOWN that modern cedar shingle roofs are not lasting as long as the ones built in earlier times. Research into the causes for this shorter lifespan indicates that some additional notes should be added to C. R. Meyer's article on the use of western red cedar shingles for roofing (OHJ Aug. 1977).

NEW WESTERN RED CEDAR shingles are free of any living organisms. Although they possess a natural resistance to decay and fungal attack, it appears that some of this resistance is lost after a period of years. This loss of decay resistance has been attributed to water leaching out the natural chemicals that repel fungi attack.

PROBLEMS WITH SOFT ROT have been discovered primarily in moderate climate areas. Shingles were found to be soft and crumbly. Repairs became difficult because removing a shingle for replacement caused adjacent shingles to break because of their deteriorated condition.

RESEARCH HAS INDICATED that the reasons for more rapid decay are to be found not so much in the shingles themselves as in the way the shingles are applied.

SUBSTANTIAL CHANGES have taken place in the way wood shingles are applied when you compare historical and contemporary methods. Historically, shingles were nailed into small wooden slats that ran parallel to the ridge of the roof. Usually a double—or even a triple—decking was desired (Fig. 1). Generally, no sheathing was used.

THIS TYPE OF CONSTRUCTION is relatively open and leaves enough space for adequate ventilation. Of course, it makes the attic space quite drafty.

THIS DRAFTY assembly method is not desired in modern construction because most people want to insulate and use the attic space. As a result, the roof is completely closed by applying continuous wooden sheathing over the rafters. On top of the sheathing, a building paper or other impervious sheet material is attached to provide more protection against drafts, leakage and wind-driven rain (Fig. 2).

BY ELIMINATING THE VENTILATION, the shingles aren't dried as rapidly or as easily as in the historic construction. Any moisture that

penetrates the shingle decking is contained on the building paper underneath the shingles. Obviously, the shingles will remain wet longer or, in some cases, will not dry out at all.

THIS CONTINUOUS PRESENCE of moisture will increase the rate of leaching out of the chemicals that give the shingles their natural rot resistance. Thus, the shingles become more prone to decay.

ANOTHER ASPECT has to be considered. Most historical roofs have quite a substantial pitch. As a result, runoff would be good and water would not linger on the roof. Modern roofs have a more shallow pitch—and therefore a less quick runoff. This can also contribute to faster decay.

CONSIDERING these possible problems in wood shingle construction, it is necessary to find ways to minimize the decay hazards. A number of options are open—and the choice of one or the other depends on the conditions encountered.

OMITTING THE CONTINUOUS sheathing and its cover of building paper is one consideration in new construction. If the roof cover is well maintained, the chance of leakage is limited, especially if a triple decking is used.

BECAUSE THE ATTIC SPACE would become drafty in this method, sheathing or insulation can be placed underneath or between the rafters. The latter method will allow the rafters to be seen as a decorative element but, because of the frequently uneven spacing of the rafters, making the sheathing fit will be very labor intensive (Fig. 3). This configuration allows the roof deck to remain ventilated, while the draft problem is mitigated.

WHEN SHEATHING and its protective layer of building paper is already in place, another possibility can be considered. Slats can be nailed on the sheathing at regular intervals and parallel to the ridge of the roof. In this way, a limited ventilation and drying out of the shingles can be obtained (Fig. 4).

THIS SYSTEM HAS one disadvantage. Water that does penetrate cannot easily run off because the slats form a barrier. This could be partially alleviated by raising the slats on small nailers...leaving an open space underneath the slats. This system makes the roof cover very complicated, however. Another possibility is to break the slats horizontally, leaving openings where water can possibly run down further. This is of only limited value, however.



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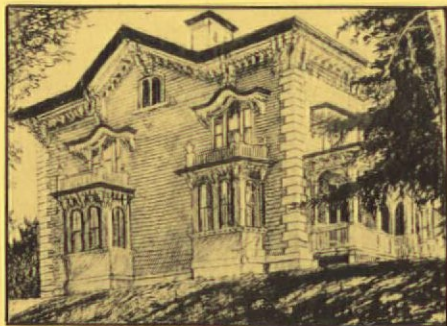
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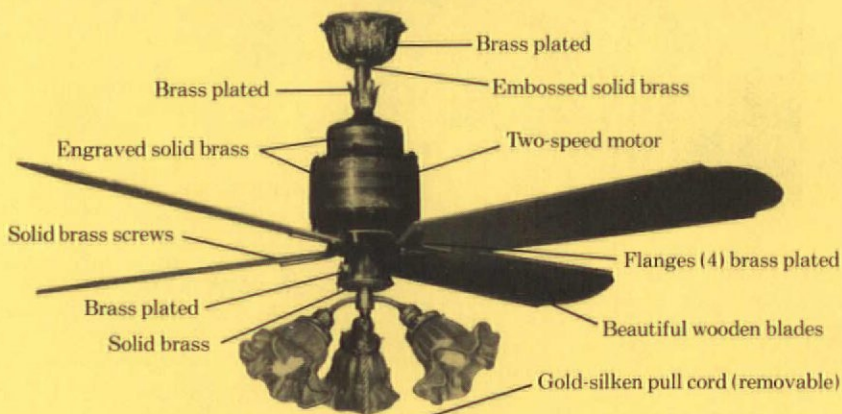
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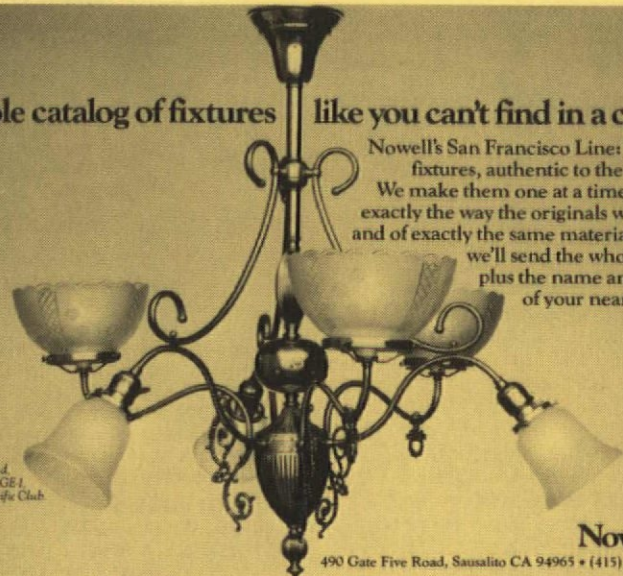
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FOR FURTHER INFORMATION, contact the Mohonk Mountain House, New Paltz, N.Y. 12561 or call (914) 255-1000 to request a free Hudson Valley Holiday brochure describing the program in detail. Special package rates are available.

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Victorian Gardens For Victorian Homes

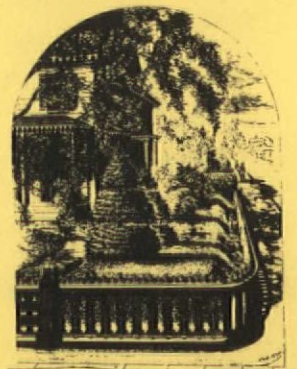
VICTORIAN GARDENS FOR VICTORIAN HOMES, published in 1886 as "Suburban Home Grounds," covered every aspect of landscaping the suburban house—laying out, planting and maintaining trees, shrubs and flowers. This important book was reprinted many times in the late 19th century and was widely used by Victorian homeowners as a guide to landscape gardening.

FRANK J. SCOTT, the author, covers many topics: Decorative planting, types of grounds suitable for businessmen, suburban neighborhoods compared with country places, dwellings, out-buildings and fences, faults to avoid, walks and roads, lawns, plans, and bedding flowers.

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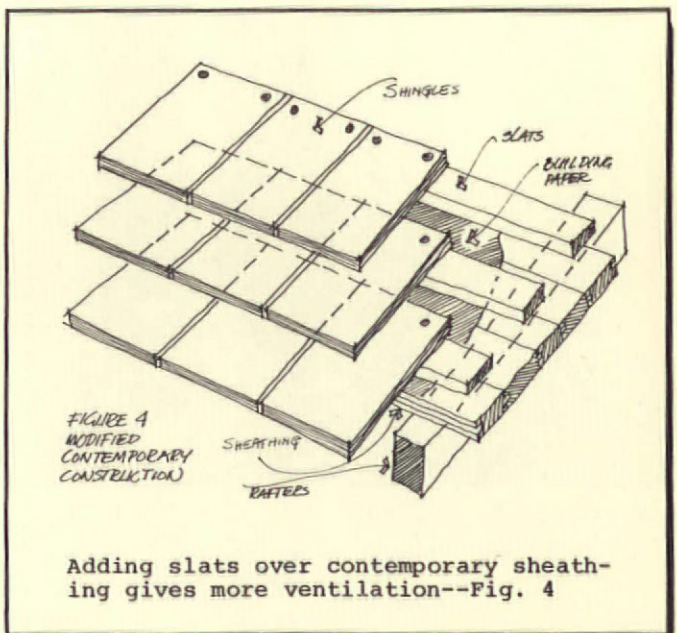
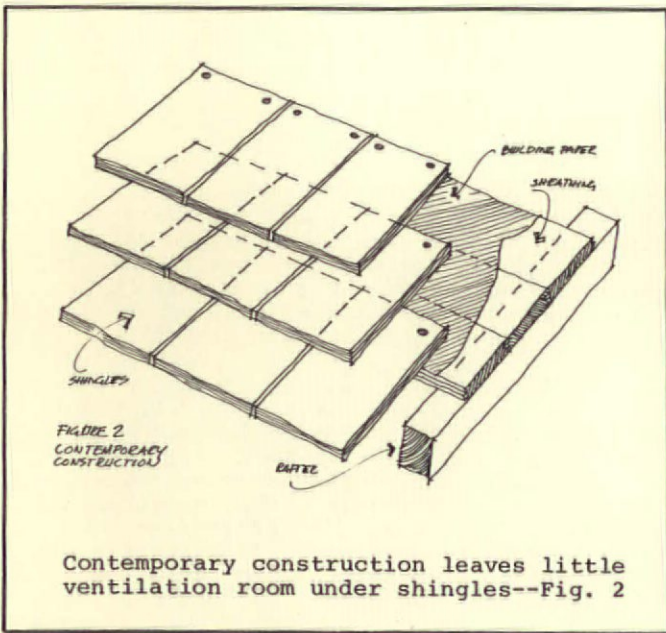
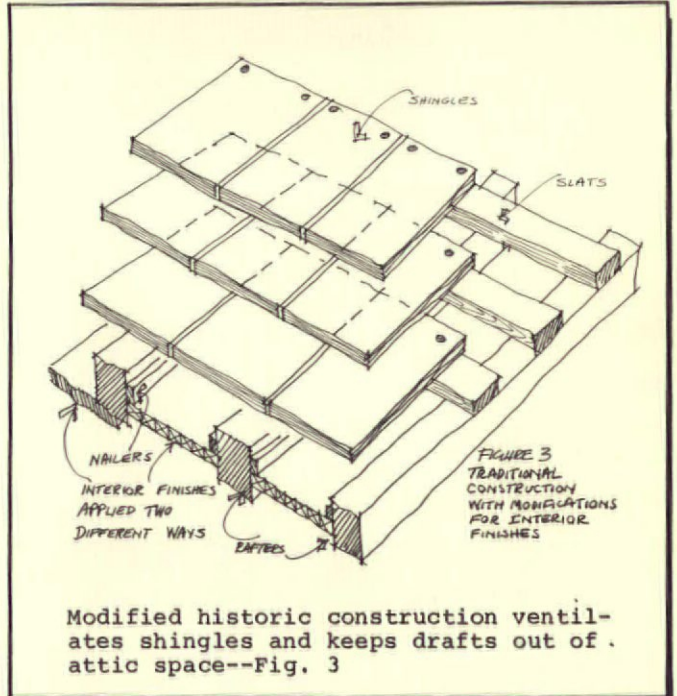
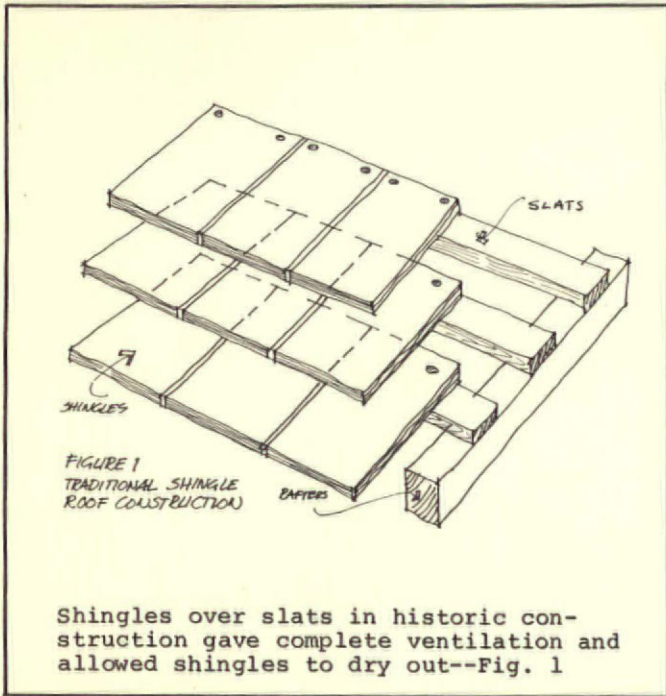


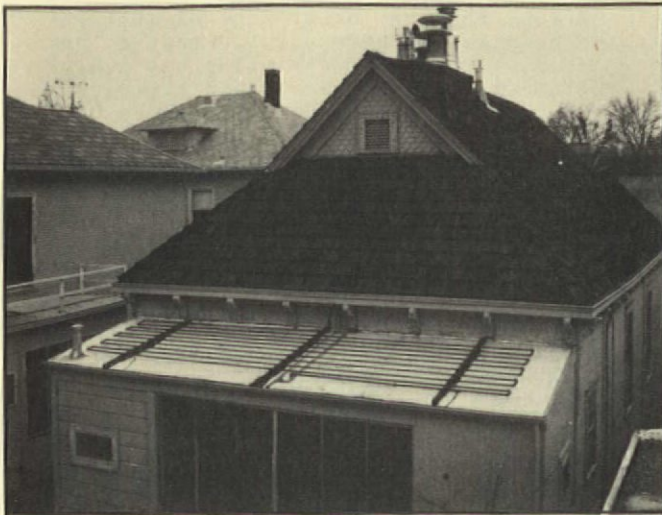
WHETHER OR NOT such construction methods are possible, consideration should also be given to using pre-treated shingles. Most common treatments are based on pentachlorophenol or different copper arsenate salts. Some leaching out of these preservatives by water will occur, but after a short period this will stabilize.

EVEN IN DECAY-PRONE areas, the pre-treated shingles will give a substantial increase in lifespan. In some cases, a reapplication of a wood preservative by brush or spray can be done while the roof is in place. Such applications, however, are not as effective as pre-treatment.

IT IS OBVIOUS that the occurrence of soft rot in shingles makes it necessary to remove the old roof cover before new shingles are applied. The old shingles will contain a substantial amount of moisture and fungi, which will more quickly attack the new shingles. In addition, the soft crumbly old shingles are an inadequate base for nailing the new shingles.

Theodore H. M. Prudon is a lecturer in Columbia University's Graduate Program for Restoration and Preservation of Historic Architecture. He is also a principal of Building Conservation Technology in New York City.

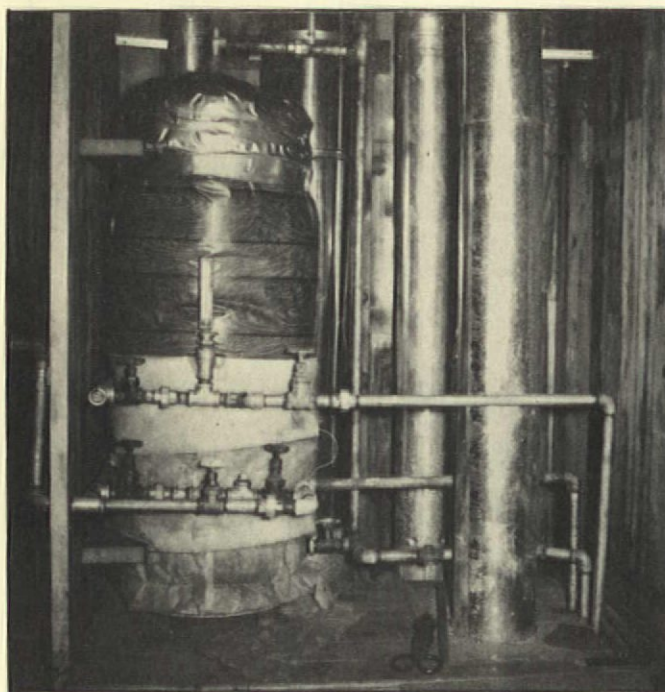




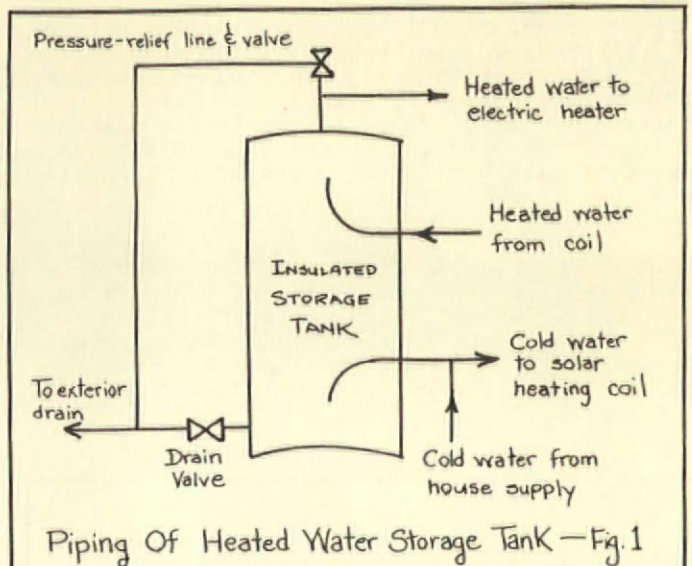
Heat collection coil is tucked on a back porch roof where it doesn't affect the appearance of the house. Aluminum paint on roof reflects heat back up to the black painted pipes.

(Solar Heater—Cont'd. from pg. 49)

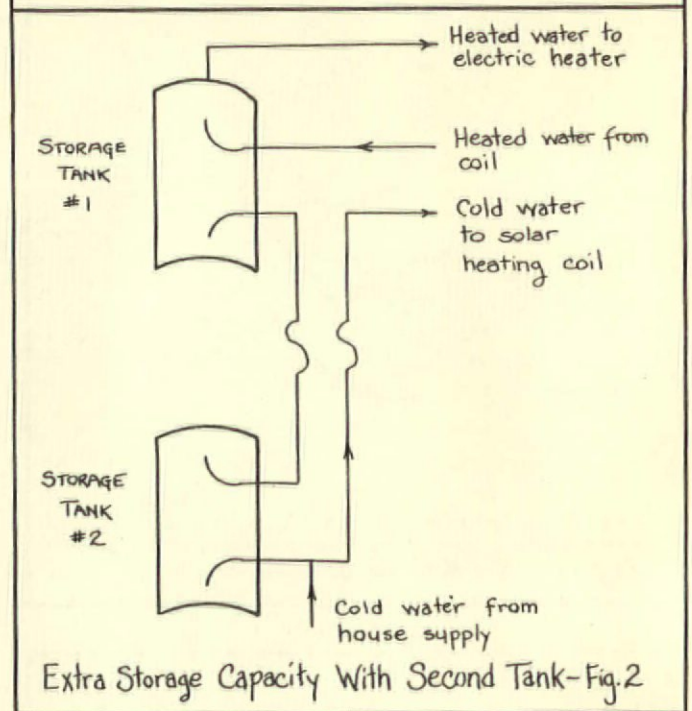
COST OF MY SYSTEM was minimal because I purchased most of the parts at salvage yards, auctions, flea markets and—as a last resort—cut-rate plumbing supply dealers. If all the components were purchased new, the cost would run about \$450 (based on prices in Montgomery Ward's Fall 1977 catalog). The key element—the storage tank—can be



Storage tank in the attic. Insulation is two layers of 1 in. x 9 in. fiberglass pasted to tank with wheat paste and wrapped with vinyl adhesive wall covering and duct tape.



Piping Of Heated Water Storage Tank—Fig. 1



Extra Storage Capacity With Second Tank—Fig. 2

purchased from any supplier of equipment for domestic wells (including Ward's).

THERE'S ABOUT 40 HOURS of labor involved in assembling the system. I was fortunate in running the piping from the storage tank in the attic to the electric water heater in the basement because I was able to put the pipes in the wall when the plaster had been stripped off in the kitchen for another project.

ELECTRICITY SAVINGS amount to about \$23 per year right now. Three facts should be noted about this figure: (1) The coil heats a tank of water in 2-3 hours. If there were more storage capacity, savings would be greater; (2) Electricity is fairly cheap in Sacramento (2.4¢/kwh.) Savings will be greater where electricity costs more; (3) Electricity costs will probably be going up faster than costs for material and labor used in the solar pre-heater system. ■ ■

Finishing A Victorian Parlor

By Roberta S. Crane

WE'VE BEEN IN OUR OLD HOUSE almost five years now and have taken on the endless tasks that come with any conscientious restoration. After jacking up floors, repairing--yet carefully preserving--the original plaster, refinishing much-abused and painted woodwork, as well as other major projects, we hoped that putting the final decorative touches on the parlor would be easy.

WE'VE SINCE DISCOVERED that sanding a floor is mild compared to achieving an authentic window treatment or finding the right wall-paper. No one truly afflicted with old-house fever ever tires of leafing through book after book of restored homes and museums. Every room seems so perfectly balanced, every fabric and paper exquisite.

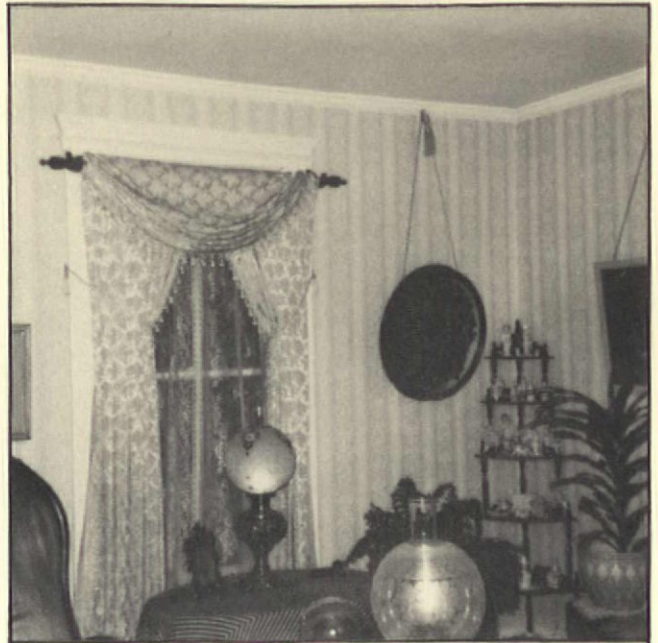
THESE PICTURES prove that it can be done, but we found that makers of custom draperies consider such proofs to be science fiction. In The Second Treasury of Early American Homes, by Dorothy and Richard Pratt, published by Hawthorn Books, Inc., on page 76, you will see the lovely drawing room of the "House of History," an Adamesque house in New York State. That is the very formal window treatment we chose. Perhaps too formal for our middle class Victorian home, but then the Victorians liked to put on airs.

The Fabric

NOW WE WERE DETERMINED to have even a similar fabric that would hang gracefully with the look of fine polished silk. The professionals told us that this entire statement was a contradiction of terms.

MODERN SILKS have no sheen. They are usually "slubbed" or purposely snagged at intervals to take away the gloss--now out of fashion and considered "cheapening." The same runs true with most satins and both are stiffened. They would no more fall into graceful folds than would Herculon tweed. Even the damasks bore huge, cumbersome prints and could double for upholstery material.

THE COLOR SELECTION WAS just as limited. We wanted "Dusty Rose." No one had ever heard of it. You could have "Baby Pink"--take it or leave it! We hunted in every fabric shop, interior design studio, discontinued fabric warehouse and even costume suppliers until thoroughly discouraged. If Providence had not intervened, we would still have bed sheets on the windows.



The Crane's parlor is lighted only with antique lamps. Their love of antiques even extends to house plants--an authentic strain of aspidistra, "the cast iron plant" and the original "Parlor Palm," a difficult variety of palm to acquire these days.

NONE EVENING, friends invited us to a musical program at a nearby college. A Renaissance Consort was to perform on antique instruments and in period dress. There were our polished damasks, satins and silks and, most important, the costumes looked newly made.

IMMEDIATELY AFTER THE RECITAL I cornered the best dressed musician and, after the customary remarks on her playing, I asked about her gown. She had gone to a little drapery shop, scarcely two miles from our home which we didn't know existed.

THE SHOP WAS FILLED with remnants of discontinued lines of the kind of fabric we had been looking for. There was a beautiful dusty rose moire with the look of watered silk. It had an over-design of delicately embroidered flourishes and flowers. The effect was similar to the silks seen on Japanese kimonos.

THE FABRIC NOT ONLY SHINES, but the background sheen contrasts with that of the pattern so that every detail catches the light and there are three shades of rose in the embroidery so that each little flower stands out. It could not have been more perfect.

HOWEVER, THE PROBLEM of transforming this wonder into actual draperies remained. Again, the professionals stood firm. Draperies must have sewn-in pleats, swags must stand out like awnings, and curtain rods must meet standards.

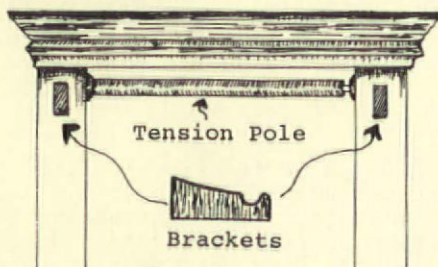


Straight draperies are shirred and hemmed on top and the pole is run through the opening while the swag is actually draped over the pole with wooden counterweight behind to hold it in place.

WE HAD WOODEN RODS with turned finials and wanted the drapery panels simply hemmed and gathered loosely with no pleats. This wouldn't do. The rods were on brackets so they stood out from the window about 3 in. The ends of the drapes could not, therefore, come up flush with the moulding. This would give an unfinished look to the treatment, we were told, and no swag can just hang in its natural folds. These must be rigidly sewn in. Again, the picture books were insufficient evidence.

FINALLY, ONE POOR, HARASSED SEAMSTRESS agreed to hem and line the material. The swag was too much for her abilities and she refused to run the fringe through her machine. Neither my husband nor I had ever done any sewing so patterns and diagrams did us little good. Somehow after hours of trial and error my husband managed to put together one swag, while I hand-sewed all the yards of fringe.

THE SWAGS ARE STAPLED TO A THIN STRIP of wood and the fabric at each end is gathered into folds with a few basting stitches and tacked



to the wood with upholstery tacks. The edge of the swag with the wooden strip is then simply laid over the pole and acts as a counterweight. I am sure they are done all

wrong, so it would be better for those of you who are more adept at such things to study the "How-To" articles that have appeared before in The Journal and do them the right way.

OURS WILL HAVE TO BE COMPLETELY taken apart to ever be cleaned, but our windows look beautiful to us--as close to the picture as we could ever hope. The undercurtains are real antique lace. I found them at a house sale for 25¢ a pair which somewhat compensates for our efforts with their elegant companions.

Wallpaper

AS I SAID BEFORE, I would rather attempt a major structural problem than a minor decorative one. And selecting wallpaper is no exception. Our parlor is approximately 15 ft. x 13 ft. and broken up by three windows, two doors, and an archway. You cannot use a wallpaper pattern with a large repeat in a room so small with so many openings.

MOST DOCUMENTARY PAPERS have large patterns as they come originally from mansions with huge rooms. The other extreme is the tiny print taken from the lining of an old trunk or hat box. There is very little available in between. Documentary papers of any kind are not in abundance. If you haven't already visited the average wallcovering establishment you had best be prepared for book after book of vinyls, foils, burlaps and worse. That is why they call it wallcovering.

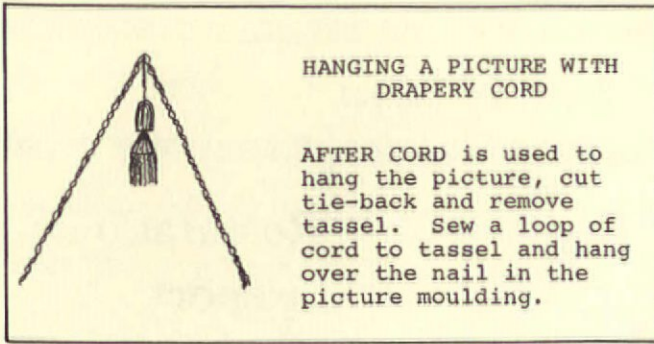
WALLPAPER IS BECOMING a thing of the past and just when we want to re-create that same past. I don't think anything compares with the authenticity of honest-to-goodness paper.

IF, LIKE US, you cannot use a large pattern, there is always the stripe. There are quite a few reproduced papers using stripes. They can fit in a small room, work around openings and make your ceilings seem higher. The next difficulty is the color. All is vivid scarlet, bright gold, royal blue, and even black. But almost lost are the mauves, saffrons and periwinkles. We thought a modest white print on a beige field would be best suited to the clutter of our Victorian parlor and blend well with our hard won draperies.

BEIGE SIMPLY DID not exist. It is called off-white and a white-on-white effect can give you eye strain, trying to focus on a design which is constantly trying to slip away back into the background.

THIS TIME WE ENDED our search in a remote paint store. The paper is striped, white on a pale mocha ground. Miraculous! There are flowers within wreaths and, the best treat, a two-handled urn which exactly matches the elaborate finial on our cast iron parlor stove. We were very lucky this time. The paper is of English origin, c. 1790.

I WANT TO EXPLAIN why we chose an 18th century paper for a late 19th century house. Most reproduced lines go no further into the Victorian



HANGING A PICTURE WITH DRAPERY CORD

AFTER CORD is used to hang the picture, cut tie-back and remove tassel. Sew a loop of cord to tassel and hang over the nail in the picture moulding.

period than the 1830's, so it is virtually impossible to find late papers. By using descriptions from old Sears catalogs, we discovered that every age has had its traditional fashions, based on principles of long standing.

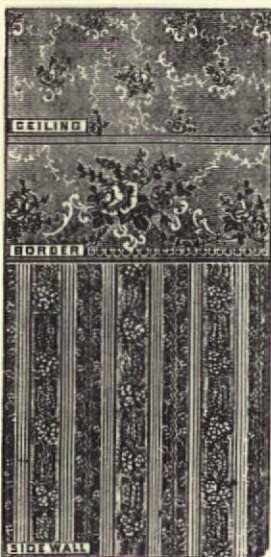
NOT EVERYTHING CAN BE completely inventive and modern. And it would seem that even as late as 1900, papers were being sold which incorporated well-tried motifs of earlier years. For this reason, although usually purists, we feel justified.

Finding Wallpaper

THE WALLPAPER THAT Roberta Crane used in her parlor was manufactured by The Birge Co., but was discontinued about five years ago. This type of early 19th century pattern can be found in the lines of Birge, Old Stone Mill, Reed, Schumacher and Katzenbach and Warren. All of these companies are listed in the 1978 Old-House Journal Catalog.

The advertisement below is from a 1902 edition of the Sears, Roebuck Catalog. Typical of the way wallpaper was used around the turn of the century, the striped paper is accompanied by border and ceiling paper.

906 SEARS, ROEBUCK & CO.,



Our 9-Cent Marie Antoinette Paper for Parlors.

For a handsome, new stripe effect, in a rich paper, at a low price, for parlors, bedrooms, libraries, halls. In fact, for an all purpose paper we especially recommend this new number. This is a Marie Antoinette stripe on a drab background. The flowers are treated in different shades of purple, producing a very dainty effect.

The great value of a striped pattern is to change the appearance of a room having a low ceiling, making it appear much higher. This is a very rich, dainty paper, and must be seen in the sample to be appreciated. The border is a handsome 9-inch border, the colors blending perfectly with the side wall from a very light shade of cream to a soft drab, beautifully decorated with purple and green floral and striped effect. The ceiling is a very light cream background with neat leaves of green and purple rosebud effects.

From the 2-cent sample book you can tell exactly what the side wall paper will be; or you can order direct from the catalogue, with our guarantee that the paper will please you; or, from the dealers' big book, you can get a good idea of the side wall, ceiling and border.

No. 37R3328 Price for side wall paper, per double roll.....9c
 No. 37R3330 Price for ceiling, per double roll.....9c
 No. 37R3332 Price for 9-inch border, per single yard.....1 1/2c

EXCEPT FOR THE DRAPERIES and wallpaper, everything in our parlor is antique. We installed a picture moulding so that all our pictures could hang from cords as was frequently done in the Victorian era. We use our parlor stove, "Hot Blast Florence" as she was aptly named and stamped by the manufacturer. We have been very grateful to her this winter.

EVENTUALLY we'd like to paper the ceiling and restore a beaded portiere to the archway. We believe that it is this kind of attention to detail that makes a room furnished with antiques into a restored parlor and despite the many frustrations, we wouldn't have it any other way.

Hardware & Accessories

WE PUT THE CURTAIN RODS together ourselves. We bought all the necessary parts at a building material and home supply center. The rod is a wooden pole with an outside diameter of 1-3/8 in. The finials and brackets are made by the Gould Mersereau Company. (If you cannot find these in your local store, write to them at 35 W. 44 St., New York, N.Y. 10036, and they will send you the name of your nearest distributor.) Their terminology calls them "wood pole ends" and "wood pole supports." The size of the pole ends is 1-3/8 in. and the supports are 1-3/8 in. x 3 in. They come unfinished, painted and stained. We bought unfinished ones and stained and varnished them to our liking.

THE UNDER-CURTAINS are hung from a tension pole--a common hardware store item. It fits between the inner sides of the windows and is held in place by pressure only, a method which avoids damage to the woodwork with unnecessary nail holes.

OUR PICTURE CORDS are all old ones, found mostly at garage sales. I would suggest checking stores specializing in plate glass mirrors where such cords were once common articles. A drapery tie-back can be adapted to serve the purpose. Ready-made drapery departments in most any department store carry such tie-backs. They are made of a very heavy cord which can support a picture. Actual picture cords are reinforced with wire so I would not use anything but a very heavy cord as a substitute. We did not use a ready-made tie-back for our draperies. The color selection in these is very limited. We had to match our shade of light rose so we bought a thinner cord, by the yard, and separate tassels to make our own. Drapery cord by the yard, tassels and fringe are stocked by most fabric shops. ■■

Roberta S. Crane lives in a turn-of-the-century house in Olmstead Falls, Ohio. Its builders were influenced by earlier homes and it is known as a late Western Reserve Colonial. Roberta is not only an avid antique collector but has taught classes in antiques for seven years.

Products For The Old House

Mirror Re-Silvering

ABOUT 7 YEARS AGO, Shirley Platts and her daughter Cheryl were looking for a company to re-silver some antique mirrors they were working on. When they were unable to find anyone to do this kind of work they decided to start their own business.

AFTER A GREAT deal of study, research and experimentation, they can now offer a re-silvering service using the same process as that of the 1700 and 1800's. They use all silver and the work is done by hand, not with a spray as today's mirrors are done.



TODAY'S MIRRORS also contain some aluminum and have only a 78% reflective power compared to the 98% the Platts' method produces.

UPON RECEIVING A mirror, they completely remove the old silver backing. It is impossible to patch or replace part of the silver. Next is the preparation of the glass, a very important step in obtaining a gleaming coat of silver. Then the silver formula (a secret one the Platts will not divulge) is applied. After the tricky process of drying, the mirror is then given several backing coats.



THE COST OF re-silvering is \$16 per sq. ft. and \$16 for any mirror less than a sq.ft. All sizes and shapes can be re-stored. Work will take about a month.

FOR FURTHER information write to: Chimpunk Hollow, Millbury, Massachusetts 01527, or call 1-617-799-0760.

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