



# The Old-House Journal

Restoration and Maintenance Techniques For The Antique House

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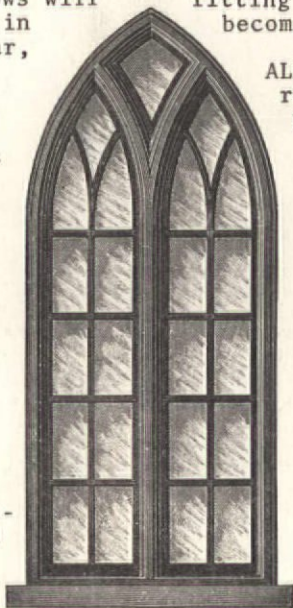
## Replacing Old Windows good news & bad news

By Patricia Poore

duplicated in replacement units...because of the high cost of new materials...and because of the still-growing concern with energy efficiency, some ingenious thought has gone into rehabilitating old wood windows. We've outlined a few of the unusual methods here. This kind a full-scale restoration and retrofitting of existing windows will probably become standard practice.

ALREADY, even large commercial building renovation jobs have made use of repair techniques, instead of replacement. For example, visually-important windows in the historic Colcord Building (Oklahoma City) were repaired and fitted with a kind of integral storm window--a second glazing layer set into existing wood sash. The fix-up process ended up costing less and being more energy efficient than the metal replacement units which initially attracted the owner. In addition, the historic windows were retained, and the owner qualified for a tax credit because the work was done in accordance with the Secretary of the Interior's Guidelines. (The metal units in this case would have disqualified them--see page 89.)

continued on p. 89



**W**INDOWS ARE SO TROUBLESOME...but they give a building its special character, and so they're worth preserving. That's what this issue is about: appreciating the variety and importance of windows, fixing and weatherizing them. So why is The Old-House Journal leading off with an article about replacing old windows?

**WE'RE MEETING THE ENEMY** head on. The advertising power of large companies is behind the sale of replacement window units, which abound. For people faced with dilapidated old windows, there's plenty of opportunity to go the expedient route. Like it or not, we know windows will continue to be eyed with replacement in mind, so we want to lay out some clear, relatively unbiased information on alternatives and selection.

**T**OO MUCH of the time, new windows are both materially inferior to the originals and a compromise to the appearance of the building. To be fair, some of the replacements are well made, thermally efficient, easy to maintain and to clean, and even appropriate. Nice to know if you've bought a building with truly hopeless (or missing) windows. Quality isn't cheap, however. It's almost always less expensive to recondition old windows, if that's at all practical.

**GOOD NEWS:** There are specific alternatives to replacement. Because old windows come in too many sizes and shapes to be sufficiently



# Love and Hate Under the Lunette

**T**HE RELATIONSHIP between many old-house owners and their windows can be likened to a torrid love affair. The original windows, when glimpsed from afar, seem attractive and romantic. It's love at first sight. But after living with them for a while, cold (literally) reality sets in.

OLD WINDOWS can have bad habits that make them difficult companions: They are wasteful (of energy), their beauty fades (as paint quickly peels), and they can be quite cantankerous when you want them to do something (like move up and down). So the inevitable reaction sets in: Love turns to indifference ...or even hostility.

IN SOME CASES, the relationship ends quickly with a case of "windowcide": The owner destroys the old windows and replaces them in his or her affections with new ones made of vinyl-clad aluminum (or is it aluminum-clad vinyl?).

IN OTHER CASES, the owner comes to an "understanding" with his

or her formerly adored original windows: They can keep their accustomed place if they will stand uncomplaining as they are hidden from public view by triple-track storm windows.

## To Re-Kindle That Old Flame

**W**E AT THE OLD-HOUSE JOURNAL think it's a shame that so many beautiful relationships should end like this... because it is not inevitable. The breakup comes from a lack of caring, or an unwillingness to put some fresh energy into the relationship.

SO THAT'S what this Special Issue is all about. With the Glossary that starts on the next page, we're trying to re-ignite your interest in the glamour and beauty of traditional windows. Then, with the various how-to and where-to articles, we're trying to show that there are many different ways to keep your original windows visually exciting--and easy to live with. --C.L.

## And Special Thanks To...

MANY PEOPLE around the country are hard at work trying to develop practical, economical alternatives to "windowcide." Some of them, who helped us with this Special Issue, are noted below—with many thanks.

LARRY JONES is Preservation Consultant to the Utah State Historical Society. Last October, we asked Larry to send along some of his thoughts about sensitive rehabilitation of wooden windows. We heard nothing further ...until December 20, when our morning mail brought a 45-page manuscript from Larry, along with a wonderful collection of photos. As a result, you'll see his name frequently in this issue.

JOHN MYERS and CHARLES FISHER of Technical Preservation Services of The Na-

tional Park Service sent along an advance copy of their case history, "Improving Thermal Efficiency: Historic Wooden Windows." They are also working on a handbook of sensitive window rehabilitation for historic structures. They encourage you to submit examples of good window rehabilitation for possible inclusion in the handbook. Contact: John Myers, Southeast Regional Office, National Park Service, 75 Spring St., Atlanta, GA 30303. (404) 246-2643.

CHARLES A. PARROTT is the Historical Architect for the Lowell (Mass.) Historic Preservation Commission. His talk at the annual APT meeting last October prompted us to ask for copies of some of the excellent photos he has of sensitive window replacement in historic buildings around Lowell.



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# Talk To Me Of Windows

...a glossary

**T**O THE CASUAL PASSERBY, windows provide vital clues to a house's personality, much as the eyes provide clues to human character: Some are complex and full of meaning; others are dull, or even hostile. For us inside the house, windows are frames that shape our view of the world beyond.

MUCH OF the history of architecture is told in the shapes and symbolic uses of windows. Even on a single street in America, windows appear in a dazzling variety of types. It is this complexity that makes old-house watching so much fun.

AS WITH ANYTHING ELSE, appreciation increases with knowledge. To fully appreciate windows, then, we should know the words that describe them. It's hard to get passionate about a beautiful architrave surrounding a window if we have to point a finger in frustration and call it merely "that thing."

SO WE HAVE assembled here an illustrated glossary of the most common terms used to describe visible parts of windows. (Terminology for some of the unseen elements is on page 87.) We hope that by providing a precise vocabulary for traditional window types, we'll encourage more people to preserve original fenestration. After all, how could a remodelling contractor tear it out after he learns that it's an "Elizabethan-style lozenge window"?

**APRON** — A panel on the wall below a window **SILL**, sometimes shaped and decorated. *see illus. on p. 87*



**ARCHITRAVE** — The moulded frame or ornament surrounding a window, door, or other rectangular opening. Also, in classical architecture, the lower division of an entablature that rests on the column.

architrave

**BALCONET** — A low ornamental railing projecting just beyond the **SILL**, which is made to look like a balcony.



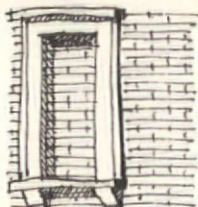
balconet



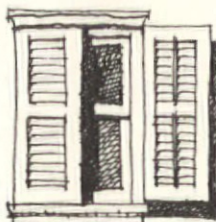
bay window

**BAY WINDOW** — A window that projects out from the surface of an exterior wall and extends to the ground.

**BLIND WINDOW** — A recess in an exterior wall trimmed with mouldings to give it the appearance of a window. Its purpose is to add symmetry or decoration to a facade.



blind window



blinds

**BLINDS** — A rectangular frame, consisting of top and bottom **RAILS** and side **STILES**, which is filled in the center with slats. **BLINDS** are used as window shades and for ventilation. *see also shutters*



bow window

**BOW WINDOW** — A rounded **BAY WINDOW**. It projects in a semi-circle from the surface of an exterior wall. Also called a compass window.

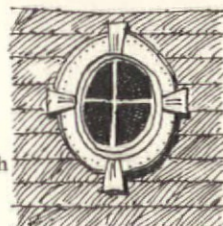
**BULL'S EYE GLASS** — A piece of glass having a raised center as a consequence of having been formed by a blow pipe. Originally considered to be inferior glass because of its imperfection, it was used in barns and secondary windows. Now it is prized because of its obviously handmade character. *see crown glass*

**BULL'S EYE WINDOW** — *see oculus*



cabinet window

**CABINET WINDOW** — A projecting window or **BAY WINDOW** for the display of goods in shops.



cameo window

**CAMEO WINDOW** — A fixed oval window with surrounding mouldings and ornament. A **CAMEO WINDOW** usually has **TRACERY** or **MUNTINS** to divide the glass. Often found on Colonial Revival houses.



**CAMES** — Lead strips to hold small pieces of glass in leaded windows. *see* leaded glass window

**CAP** — A decorative cornice covering the **LINTEL** of a window. *see also* hood

**CASEMENT WINDOW** — A single- or double-sash window that is made to open outwards by turning on hinges attached to its vertical edge. This was one of the earliest types of movable windows, used from medieval times on. Often found in Gothic Revival, Elizabethan and Tudor Revival houses.



casement window

**CATHERINE WHEEL** — *see* wheel window

**CHICAGO WINDOW** — A large fixed **SASH** flanked by a narrow movable **SASH** on either side. First used by the Chicago School architects in the late 19th and early 20th century.



clerestory

**CLERESTORY** — A row of windows mounted high in a wall. Most often refers to windows high above the nave in a church. Also used in Prairie Style houses. (pronounced "clear-story")

**COMPASS WINDOW** — *see* bow window



crown glass

**CROWN GLASS** — Large panes that became available in the 17th century and were incorporated in wooden sash windows. The glass was handblown through a pipe (pontil) into a circular disc, leaving a bubble or bullion where the pipe was inserted. Also known as bottle glass or **BULL'S EYE GLASS** when the bullion was used in a window.



Diocletian window

**DIOCLETIAN WINDOW** — A semi-circular window divided by wide uprights, or **MULLIONS**, into three **LIGHTS**. This ancient Roman motif was later used by Palladio for use in the 16th century. Also called a **THERM**. Often used in Classical Revival buildings of the early 20th century.

**DORMER** — A vertically-set window on a sloping roof; also the roofed structure housing such a window. If the roof slopes downward from the house, they are known as **shed dormers**. Flat-roof projections are commonly called **doghouse dormers**. Those with pointed roofs are called **gabled dormers**.



shed dormer



doghouse dormer



gabled dormer

**DOUBLE-HUNG WINDOW** — A window with an outside **SASH** that slides down and an inside one that goes up. The movement of the **SASH** is usually controlled by chains or cords on pulleys with a **SASH WEIGHT**. The earliest **DOUBLE-HUNG WINDOWS** were known as **GEORGIAN WINDOWS**. *see illus. on p. 87*



double window with oculus

**DOUBLE WINDOW** — Two vertical windows, separated by a **MULLION**, forming a single architectural unit. Also called a coupled window.

eyebrow dormer



**EYEBROW DORMER** — A low **DORMER** having no sides, the roofing smoothly curving upward over the dormer window. Also called an eyelid window. Commonly used on Shingle Style houses.

eyebrow windows



**EYEBROW WINDOWS** — Low, inward-opening windows with a bottom-hinged **SASH**. These attic windows built into the **ARCHITRAVE** of a house are sometimes called "lie-on-your-stomach" windows. Often found on Greek Revival houses.

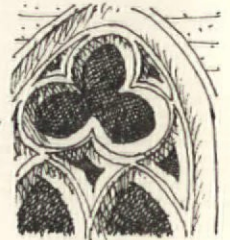
fanlight



**FANLIGHT** — An elongated, round-topped window over a door or window with **TRACERY** or bars radiating in an open-fan pattern. It evolved as an economical use of **CROWN GLASS**, which was cut in wedge-shaped pieces. *see also* lunette

**FENESTRATION** — The art of placing window openings in a building wall. It is one of the most important elements in controlling the exterior appearance of a house.

**FIXED WINDOW** — A stationary window.



trefoil

**FOIL** — A lobe or leaf-shaped curve formed by the cusping of a circle or arch. The number of **FOILS** involved is indicated by a prefix, e.g., trefoil (3), quatrefoil (4), etc. **FOILS** are encountered in the windows of Gothic Revival churches and houses.

**FRENCH WINDOWS** — **CASEMENT WINDOWS** carried down to the floor so as to open like doors.

**GEORGIAN WINDOWS** — *see* double-hung windows

**GLAZING** — The process of installing glass panes in window and door frames and applying putty to hold the glass in position. Also, the glass surface of a glazed opening: "Double-glazed," therefore, refers to a **SASH** with two layers of glass.

**GLAZING BAR** — A vertical or horizontal bar within a **SASH** to hold glass. Same as **MUNTIN**.

**GOTHIC-HEAD WINDOW** — A window topped with a pointed arch. Same as Gothic-top window. It is not as tall and narrow as the pure Gothic **LANCET WINDOW**.



Gothic-head window

**GUILLOTINE WINDOW** — The first double-sash window, with only one movable **SASH** and no counterweights. A peg was inserted through a hole in the movable **SASH** and into a corresponding hole in the frame. Its tendency to come slamming down led to the colorful name.

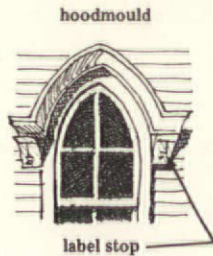


**HEAD** — A somewhat ambiguous term used generally to denote the top or upper member of any element or structure. In windows, it refers to the top of the frame, as in **ROUND-HEAD WINDOW**.

**HOOD** — An ornamental cover placed over a door or window to shelter it. *see also cap*



hood



hoodmould

label stop

**HOODMOULD** — The outermost projecting moulding around the top of a door or window to discharge rainwater. Also called drip mould, headmould, label. Hoodmoulds are a prominent feature of Gothic Revival architecture. *see label stop*

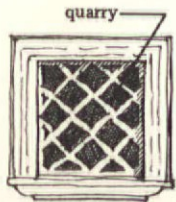
**JAMB** — The top and side members of a window or door frame. *see illus. on p. 87*

**LABEL STOP** — An ornamental projection on each end of a HOODMOULD. It often takes the shape of a gargoyle or other decorative carving.

**LANCET WINDOW** — A tall, narrow window with a pointed-arch top, very often with diamond-shaped LIGHTS. Characteristic of Gothic architecture.



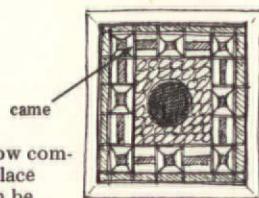
lancet window



quarry

lattice (lozenge) window

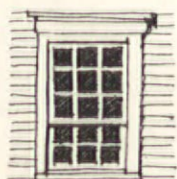
**LATTICE WINDOW** — A window with diamond-shaped LIGHTS. Also called a LOZENGE window. It has its origins in medieval architecture, when the lattice was formed by lead CAMES. In some revival architecture, the GLAZING BARS in a LATTICE WINDOW are made of wood.



came

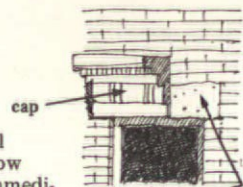
leaded glass window

**LEADED GLASS WINDOWS** — A window composed of pieces of glass that are held in place with lead strips, or CAMES. The glass can be clear, colored, or stained.



lights (nine-over-six)

**LIGHTS** — The panes of glass in a window, as in an eight-light or twelve-light window. DOUBLE-HUNG WINDOWS are designated by the number of LIGHTS in upper and lower sash, as in six-over-six.



cap

lintel

**LINTEL** — A piece of wood, stone, or steel placed horizontally across the top of window and door openings to support the walls immediately above.

**LOOP WINDOW** — A long, narrow, vertical opening, usually widening inward, cut in a medieval wall, parapet, or fortification for use by archers. Also called a balistraria. Sometimes interpreted in Romanesque Revival architecture.



louver window

**LOUVER WINDOW** — A window having louvers, or slats, that fill all or part of an opening. It's used to provide ventilation.

**LOZENGE** — Any diamond-shaped ornament or design. Also, an obsolete term for a diamond-shaped pane of glass. A window composed of diamond-shaped panes is called a lozenge window. *see quarry*



lucarne

**LUCARNE** — A small DORMER window in a spire or steeply-pitched roof.

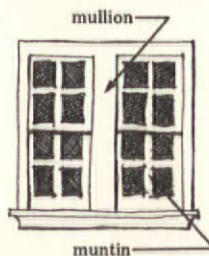


lunette

**LUNETTE** — A crescent-shaped window framed by mouldings or an arch.

**MEETING RAILS** — The bottom horizontal member of the outer SASH and top horizontal member of the inner SASH of a DOUBLE-HUNG WINDOW. *see illus. on p. 87*

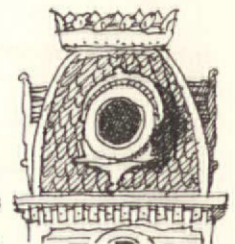
**MULLIONS** — The vertical dividing members between multiple windows. The term is sometimes used to designate what should be called MUNTINS.



mullion

muntin

**MUNTINS** — The wood strips that separate the panes of glass in a window SASH. The term is sometimes confused with MULLION.



oculus

**OCULUS** — A round or oval window without TRACERY or MUNTINS. A round OCULUS is also called a BULL'S EYE WINDOW, from OEIL-DE-BOEUF. *see also rose window, wheel window, and cameo window*

**OEIL-DE-BOEUF WINDOW** — A small, fixed, round window without TRACERY; literally, BULL'S EYE WINDOW. *see also oculus*

**ORIEL** — A window projecting from the wall and carried on brackets, corbels, or a cantilever. Unlike a BAY WINDOW, the projection of an ORIEL doesn't extend all the way to the ground.



oriel



Palladian window

**PALLADIAN WINDOW** — A tripartite window composed of a central, main window having an arched head, and on each side a long, narrow window with a square head. Used extensively in Georgian, Classical Revival, and Colonial Revival architecture. (Also called a VENETIAN WINDOW).



**PARTING BEAD** — A vertical guide strip on each side of a **DOUBLE-HUNG WINDOW** frame which separates the **SASHES**. *see illus. on p. 87*

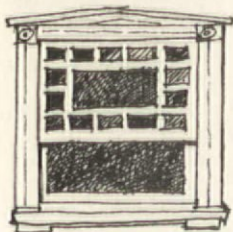
**PEDIMENT** — A triangle-shaped crowning ornament, meant to suggest the front of a Greek or Roman temple. Often used as **CAPS** or **HOODS** on windows in Classical Revival and Colonial Revival buildings.



pediment

**PRIME WINDOW** — As distinct from a storm window, this is the primary window in an opening, including frame and **SASH**.

**QUARRY** — A diamond-shaped pane of glass. Also called quarrel—the medieval term for the small panes of glass set diagonally in Gothic windows. *see also lattice window and lozenge*



Queen Anne window

**QUEEN ANNE WINDOW** — A window with small glass window **LIGHTS** arranged in various forms and usually only on the upper **SASH**.

**RAIL** — A horizontal member in a door or window **SASH**. *see illus. on p. 87*

**REVEAL** — That part of a **JAMB** or vertical face of an opening for a window or doorway between the frame and the outside surface of a wall. Also, the interior space used to enclose paneled interior **SHUTTERS** that fold back when open.

**ROSE WINDOW** — A round window with **TRACERY**. *see also wheel window and oculus*



round-head window

**ROUND-HEAD WINDOW** — A window with a semi-circular or curved top. Used most often in Romanesque Revival, Italianate, and Classical Revival buildings.

**ROUNDEL** — A very small circular window. In **GLAZING**, a circular **LIGHT** that resembles the bottom of a bottle. *see also oculus*

**SADDLE BAR** — Light steel bar placed horizontally across a window to stiffen leaded **GLAZING**.

**SASH** — The framework of **STILES** and **RAILS** in which the panes or **LIGHTS** of a window are set. *see illus. on p. 87*

**SASH WEIGHTS** — A lead counterweight that, together with the **SASH CORD** and pulley, holds a **SASH** in the raised position. *see illus. on p. 87*

**SHUTTERS** — Like **BLINDS**, **SHUTTERS** are rectangular frames consisting of top and bottom **RAILS** and side **STILES**. These are filled in, however, with a solid panel designed to actually 'shut up' the house for protection.



shutters

**SILL** — The bottom crosspiece of a window frame on which the bottom **SASH** rests. The **SILL** is of heavier stock and slopes to shed water. *see illus. on p. 87*

**STAINED GLASS WINDOW** — A window with a painted scene or pattern that has been fired into the glass. Windows with plain colored glass set in lead are most often (inaccurately) called stained glass.

**STILE** — Each vertical side member of a window or door frame. Also, a vertical side member of a **SASH**. *see illus. on p. 87*

**STOOL** — The **STOOL** caps the **SILL** on the inside of a window frame. Potted plants that sit "on the windowsill" are really on the **STOOL**. *see illus. on p. 87*

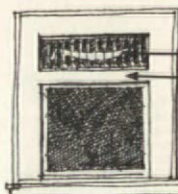
**STOP** or **STOP BEAD** — A strip on a window frame against which the **SASH** slides. *see illus. on p. 87*

**THERM** — *see Diocletian window*

**TRACERY** — Delicate intersecting lines of **MUNTINS** or **GLAZING BARS** that form ornamental designs in a window. Originally, the term related to the patterns in the upper part of Gothic windows, but it can also refer to the delicate glazing patterns in some Georgian and Colonial Revival houses.



tracery



transom window  
transom bar

**TRANSOM BAR** — A horizontal member separating a small upper (**TRANSOM**) window from a larger, lower window.

**TRANSOM WINDOW** — Any small window over a door or another window, often containing **STAINED**, **LEADED**, or beveled glass. It was usually operable, to allow ventilation.

**TRIPLE WINDOW** — Any tripartite group of windows with square heads. These are frequently found on Colonial Revival houses; they suggest **PALLADIAN WINDOWS** but are less expensive to build.



triple window



wheel window

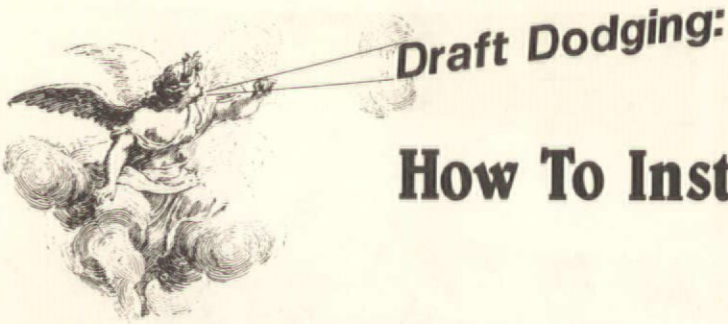
**WHEEL WINDOW** — A round window with **MUNTINS** radiating from the center, as in the spokes of a wheel. Also called **CATHERINE WHEEL**. Those with **TRACERY** are generally known as **ROSE WINDOWS**. *see also oculus*

**VENETIAN WINDOW** — *see Palladian window*

*Illustrations by Leo Blackman*

The title for this glossary came from F. Palmer Cook's "Talk To Me Of Windows, An Informal History." All our readers who love the romance of old windows—old English windows in particular—will enjoy this charming and informative book. Published in 1970, it is now out of print, but you should be able to find it in your local library.





Draft Dodging:

# How To Install Weatherstripping

By Larry Jones, Salt Lake City, Utah

**A** LOOSE-FITTING SASH is responsible for the worst energy losses a house can suffer. It will permit the entry of cold wind and the escape of heated air. If your leaky windows are creating these infiltration problems, it's up to you to stop the leaks.

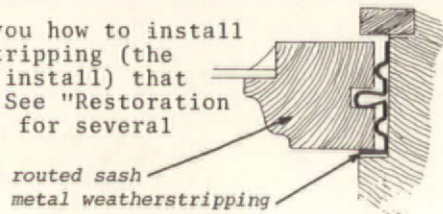
THE SUREST WAY to seal a window is with caulk. If the window is almost never opened, use an acrylic latex caulk and keep it caulked shut all year long. If you want to use the window during the summer, use a good, temporary roll-type caulk such as Mortite and seal it just for the winter.

IF YOU NEED AN OPERABLE WINDOW for all seasons, then you'll have to weatherstrip. There are numerous types of weatherstripping available, and as far as quality is concerned, you get what you pay for. The plastic or adhesive-backed foam types, although cheap and easy to install, have a relatively short life span.

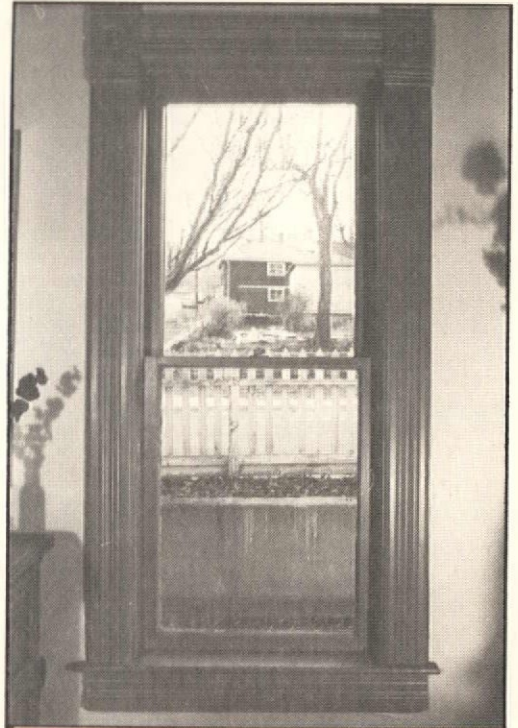


Casement windows are hard to weatherstrip. Those at left were rarely opened, and so were permanently caulked shut (right). Roll-type caulk can also be used for seasonal sealing.

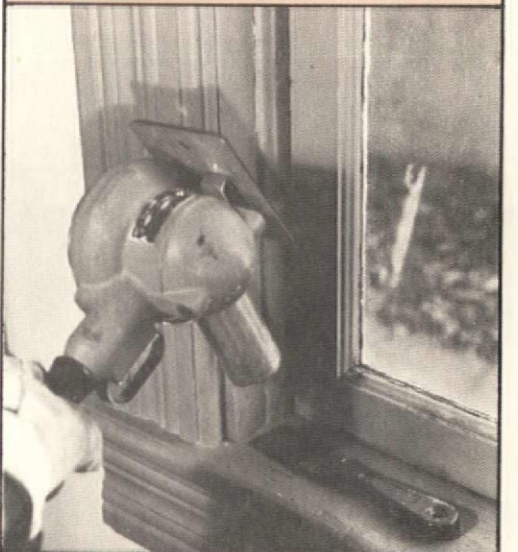
THIS ARTICLE will show you how to install metal integral weatherstripping (the kind carpenters usually install) that will last for decades. See "Restoration Products News," page 92, for several sources.



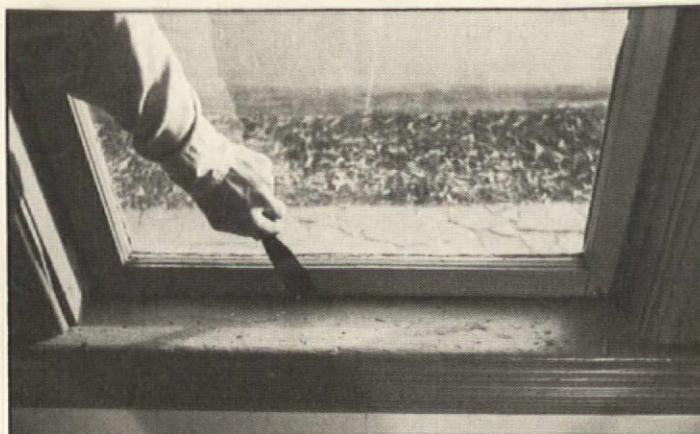
**B**EGIN BY SELECTING one window on which you will try out the following procedure from start to finish. When removing the stops, be sure you have replacements that match the originals. If a stop is attached with, say, barbed nails, you're better off discarding it rather than attempting to remove it intact. Replacing the stops also eliminates the need to strip paint from them. You can use a thin-bladed putty knife or pry bar to separate the stops from the frame.



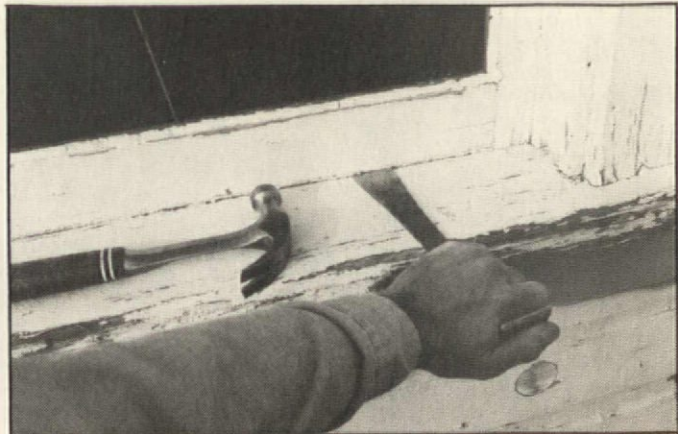
Above: This typical double-hung window has been painted shut. The curtains, shade, and hardware have all been removed to facilitate removal of the sash. Below: A heat gun is employed to break the paint film on the interior sash stops and the frame to which they are attached.







After removal of the left stop, the paint film holding the lower sash is broken by working a thin putty knife along the bottom, sides, and meeting rail of the sash.



Above: Outside, a thin pry bar is carefully worked under the sash to break the paint film. Paint along the edges is then removed with a heat gun. Below: Here's the lower sash after being removed from the frame. Note the old sash cord in the upper right corner of the sash.

USE A PUTTY KNIFE to free the lower sash. Do not try to force open a stuck sash; you could accidentally damage the glass or the frame. If you're using a heat gun to strip the paint holding the sash, be sure not to direct it at the pane--it can crack the glass. Remove the lower sash from inside and loosen and tie off the sash cords. Remove built-up paint on the upper sash, parting bead, and exterior blind stop. Carefully pry out the parting bead. (Don't worry if it breaks--you can easily replace it with lumberyard stock.) Once you slip out the parting bead on one side, you can slip the upper sash out of the window frame.

WITH THE SASH REMOVED, finish stripping all paint from the window, especially from the sash runs, sill, and parting beads. You now should make whatever repairs the frame and sill may require. Sand the frame and sill. If you feel a wood preservative is needed, use Cuprinol Clear; if all you need is a water-repellent without a fungicide, use Thompson's Water Seal. Allow to dry and then apply a suitable primer to all surfaces. Caulk and fill any cracks that could trap moisture. Inspect the sash cords. If they're deteriorating, remove and replace them with chains or new nylon cords. (Never paint sash cords; they work much better when they remain flexible.)

MEASURE AND CUT metal strips for the top and upper sides, taking care to mitre the corners. The weatherstripping can be cut easily with

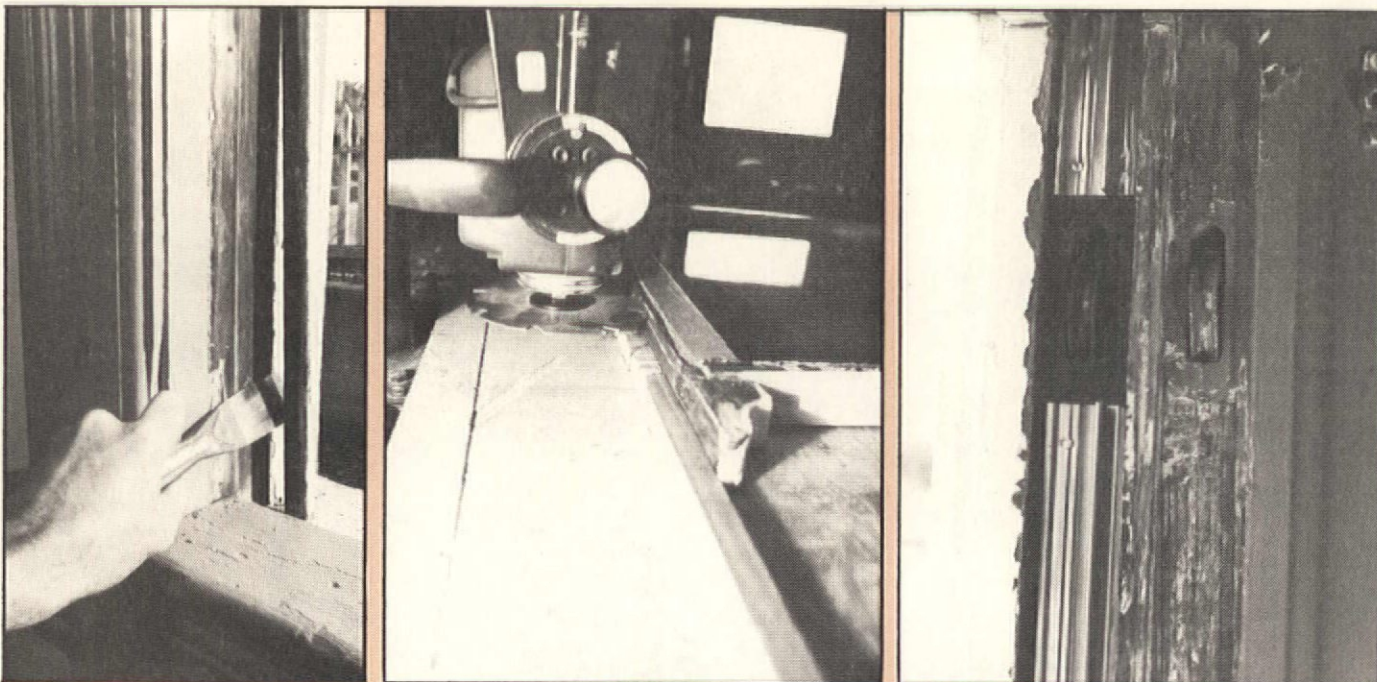
#### Tools Required To Install Weatherstripping

1. Heat gun (for paint removal--optional)
2. Putty knives (for paint removal and loosening of stops)
3. Thin pry bar (for loosening sash)
4. Hammer
5. Punch or nail set (for driving nails)
6. Tape measure
7. Drill and small bits (for pre-drilling weatherstripping--optional)
8. Drop cloth
9. Extension cord
10. Table saw, radial arm saw, or router (for cutting channels into sash)
11. Tin snips (for cutting weatherstripping)



The heat gun is used to remove built-up paint from the sash run and center parting bead. The upper sash is almost always painted shut. Use a putty knife or a Red Devil "Windo-Zipper" to break the paint seal.





Left: The parting bead is usually nailed or just pressed into place. Carefully pry it out, starting at the sill and working your way up to the bottom of the upper sash. Then lower the sash to its lowest position and loosen the bead from the top down. Center: The sash is cut to fit the new weatherstripping. Use a carbide-tipped blade on a radial arm saw to cut the approximately 1/8-in. wide slot re-

quired to fit the weatherstripping. (The saw guard was removed in this photo to show the procedure.) Right: Space must be left for sash pulleys when installing weatherstripping. In some cases, it's possible to trim the weatherstripping in such a way that the projecting metal strip can run continuously up beside the sash-rope pulley without binding.

tin snips, or on a radial arm saw with a metal-cutting or carbide blade (not a carbide-tipped blade). Install the head strip first; then nail the weatherstripping into both sides of the upper sash run.

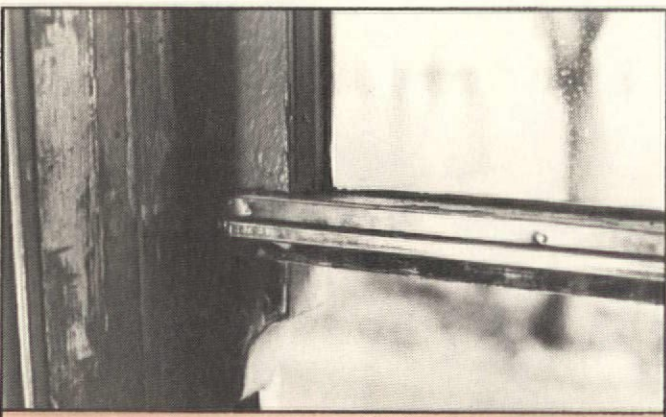
THE UPPER SASH is cut across the top rail and down the sides; the lower sash, across the bottom rail and up the sides. Cut them carefully so you can get a tight fit that still allows the sash to slide freely in its track. The saw is set into the horizontal position and should be set to cut a 7/16-in. deep slot. You can also use a table saw or router with a 1/8-in. veining bit to achieve similar results.

CUT THE MEETING RAILS of both upper and lower sashes. Use either a simple router cut or a dado cut on one or both rails to allow the meeting-rail weatherstripping to be attached. This stripping is then cut to length and applied to each sash rail. Check for proper meshing of the two sashes before assembling them in the frame.

**I**NSTALL THE UPPER SASH into the frame by inserting it from the bottom. Test it for a good fit; then remove it, install sash cords, and slide the upper sash into its sash run and push it up into position.

NOW INSTALL the lower vertical weatherstripping to the sash run of the lower sash. (Needle-nose pliers will prevent mashed fingers when you're driving nails into the weatherstripping in those narrow channels.) With the sides installed, proceed to measure, cut, and install the lower sill strip. Slip the sash into its run from above and slide it down over the weatherstripping in the lower frame.

MAKE SURE the sashes slide without binding or catching. Now install the interior stop. Most stops are nailed into place, but I always suggest installing brass tapered woodscrews with tapered washer seats about every six inches in tapered, pre-drilled holes. This arrangement allows for easy window-sash removal, should it be required in the future. Also, if stops are loosened during subsequent repainting of the window and trim, they won't become attached to the window frame with a paint film. 🏠



Metal weatherstripping is fitted to both the upper and lower sashes at their meeting rails prior to the installation of the sashes in the frame.



# Storm Windows

## Do You Really Need Them ?

### ■ YES ...but should I buy

inside-mounting	wood-framed
outside-mounting	metal-framed
glass glazing	magnetic
acrylic glazing	removable
storm/screen combination	fixed ...?

### ■ NO ...I'd be better off

just caulking & weatherstripping  
using movable insulation  
double glazing existing sash  
buying replacement windows  
buying a new hot water heater

By Patricia Poore

**I**T USED TO BE that there were two choices in storm windows. You could either live with the heavy old wooden ones that came with the house, or you could pay a handsome price for triple-track storms. If you're in the market for storm windows today, you have more choices. ("Triple-track" refers to the permanently-installed windows that have a track for the lower storm sash, another track for the upper sash, and a third for a screen.)

WE GET LETTERS from people asking "which is best?". There is no one kind of window that's best in all situations. So what this article will do first is sort out the advantages and disadvantages of each option. Then, we'll show some solutions that worked for other subscribers.

**L**ET'S RUN DOWN the list of things you might be better off doing. First, storm windows are an awfully expensive substitute for caulk! Caulking, weatherstripping, and reglazing are all inexpensive, do-it-yourself procedures that should be done whether or not you buy storms. After you've stopped the air leaks, you may very well find that storm windows are not a high priority.

IF YOUR PRIME windows are good and tight, movable insulation could be more economical and effective than storms. The disadvantage of movable insulation is that you have to remember to move it. See page 88.

IF YOU'VE DECIDED to recondition your prime windows anyway, you might be able to rework the existing sash to accept double glazing. This of course adds cost to the reconditioning, but afterwards your second glazing layer is an integral part of the window--more effective than a storm window. (Double-glazed inserts can be purchased as a hermetically-sealed unit.)

WE FIRMLY BELIEVE that most windows can be fixed. But there's always the hopeless case. No matter how good a storm window is, it can't take the place of weathertight prime windows.

AS YOU APPORTION your energy retrofit budget, be aware that adding storm windows to existing glazing merely changes the R-value from .9 to

2.0. (The average uninsulated wood-frame wall is R-4.5.) They will cut down on drafts and make you "feel" warmer, but think hard about adding storms as an "obvious" retrofit. Let's say you spent last winter cutting down considerably on infiltration losses, by caulking and weatherstripping. If you don't yet have, say, a separate, insulated hot-water heater... storms can wait.

### Options: Inside Or Out ?

**M**ORE AND MORE PEOPLE are putting their storm windows inside the house. This allows your prime windows to face the world in all their glory, solving the "blank stare" problem encountered with multi-light windows: The unique thing about all those separate panes of glass is that each reflects light a bit differently, so passers-by see a dancing reflection. That effect--subtle but important--is lost when a single sheet of glass is placed over such windows.

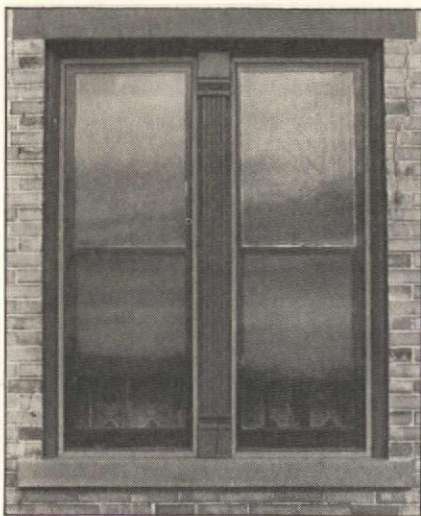
OTHER ADVANTAGES of interior storms: They're generally cheaper and easier to maintain than exterior windows, because they don't fight the weather. Storms that are stored in summer are easier to take down and put up if they are mounted inside. Exterior storms, of course, protect the prime windows from water and baseballs. And they don't interfere with any interior window decoration.

DON'T FORGET the "temporary solution": plastic sheeting stretched in a pine frame, or taped to the interior window frame. (Careful--tape may mar the paint.) If they're neat and un abused, these can become a semi-permanent solution.

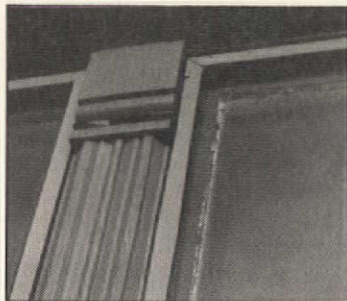
### Glass Or Acrylic ?

**H**ERE ARE the advantages of each: Glass is a proven material. We know it resists weather, dirt, and scrubbing and still stays clear. It's relatively inexpensive. It is easy to buy in almost any size. On the other hand, acrylic is very light, and it doesn't break into shards.





↓ A neoprene gasket seals between glass and the aluminum frame.



↑ When a narrow aluminum frame is "painted out" to match house trim, it's almost unnoticeable. These custom-made storms are non-operable, caulked between aluminum and wood casing.

The very best in custom-made wood storm sash, with a curved top rail, and hinged to allow ventilation on warm winter days. The top pane is fixed, but the bottom one is an aluminum-framed screen insert; a glass insert is substituted in winter. →



Photo courtesy Restoration Workshop

THE DISADVANTAGES? Glass is heavy. Acrylic is a little more expensive and, depending on the quality of manufacture, will yellow and "cloud" in more or less time. It takes special care in washing. You might not be able to find acrylic sheets locally in all sizes.

### Wood, Metal, Or Combination ?

**B**OTH WOOD- AND METAL-FRAMED windows have their advantages. Wood is a much better insulator than metal. It can always be repaired or partly replaced. And it's prettier. Metal-framed windows are light weight and very easy to buy as stock items.

DISADVANTAGES? Wood has to be kept painted or it will rot. It's heavier than metal--a consideration if you plan to handle the windows often. Metal is a terrible insulator, and while there are insulated metal frames available, these are costly and unfixable once the seal is broken. And unlike wood, repair of metal windows (when it's feasible) is not in the realm of the average carpenter or do-it-yourselfer. You may need parts that are no longer made.

VINYL-CLAD ALUMINUM and aluminum with a factory finish are maintenance-free for some years. But when the vinyl breaks down (and it will), the window will be a mess. Factory-applied enamel finishes will eventually need painting, just like wood.

WE OHJ EDITORS found something we really hate: aluminum-clad wood. Again, they are being sold as "maintenance-free windows with the insulating qualities of wood." They'll be okay for a while. But as soon as the aluminum is damaged, it will be a perfect water trap, unseen and unfixable. To us, these combine the worst features of wood and metal...you're stuck looking at aluminum while you wait for the wood to eventually get wet and rot!

NOW FOR SOMETHING we really like. Storm/screen inserts do combine the best features of wood and aluminum, with fewer mechanical and visual problems than triple-tracks. Interior or exterior wood frames are left in place year-round. In winter, you insert aluminum-framed glass panels. In summer, glass is replaced by aluminum-framed screens. Here are the potential drawbacks: You still have to store something, though inserts are much less unwieldy than entire storm windows. Also, gasketing should be provided and checked yearly to ensure a tight seal between the narrow aluminum frame and the wood. (See page 95.)

### Magnetic, Removable, Or Fixed ?

**N**OW YOU CAN BUY a removable interior storm window that's attached to the frame or interior casing with magnetic strips. Light-weight acrylic glazing and snap-together vinyl frames are cut to exactly fit the window. They're not heavy-duty, but many immediate advantages come to mind. They are easy to install, fit most any window, do little damage in installation, and come off quickly if your window is suddenly a fire exit.

THEIR MAJOR DISADVANTAGE is lack of a track record. Will the magnetic strips stay stuck to the window, and will the magnet stay magnetized? If they somehow wear out, will the company still be around to sell you new magnetic strips? We sure don't know.

REMOVABLE storm windows give the opportunity for maximum ventilation in summer, and minimum visual impact for the months they're stored





Photo: Alan D. Kruser

Aluminum triple-track storm windows can be reasonably unobtrusive on the average window, provided they're painted or factory-enameled to match the house trim.

away. The disadvantages are obvious: They have to be fiddled with spring and fall, and they have to be stored. Fixed (but operational) windows, such as triple-tracks, are practical but in evidence all year.

YOU DON'T HAVE TO settle on just one kind of storm window. Here's an example: A three-storey house, air-conditioned only on the bedroom floor, with very pretty multi-light prime windows on the first storey. Perhaps an unused attic bedroom would do fine with plastic or an insulated panel. Second-storey rooms might take permanent exterior storms (left alone in summer because of the air conditioning). The downstairs windows could be fitted with interior combination storm/screen windows. In spring, the storm window inserts are removed and carted one flight to cellar storage and the screen inserts are installed in their place.

## Where Do I Buy Them ?

**D**ESPITE the number of options, you may still find aluminum being offered most consistently. Before you take the word of your local window contracting place, make some phone calls and consider mail-order suppliers. On page 95 in this issue, we've listed a few reputable companies that are off the beaten path. The companies listed under "Prime Windows," too, are often manufacturing storm windows similar to their prime-window product line.

IF YOU'VE DECIDED on wood storms, by all means contact local millworks and lumberyards. In some cases, your lowest bid will be for custom wood sash built exactly to your specifications locally. An added advantage is that you can have them installed by the firm that made them. There are some custom millwork companies listed on page 93 which specialize in windows.

IN EVALUATING TRIPLE-TRACK storm windows, rarely do people focus on the spring-loaded latches. These are sometimes the troublesome component — and are difficult to judge in advance. The latches have to operate smoothly year after year for the windows to work as advertised. Often, they don't.

Seven years ago, I bought top-of-the-line black aluminum triple-tracks for my four-storey row house. I am very satisfied with the look of the windows, but dissatisfied with the way they work. Even though they were supposedly the best windows available, the latches never worked well and have gotten worse with age. (This problem may be worst on higher-priced windows, which have "hidden" latches.) To operate my storm windows, you need the deft hands of a surgeon to make sure the lugs on the latches are mated securely into the frame. Neither my family nor the fellow who washes the windows have the required touch.

This scenario has been played out at least a dozen times: Someone raises the lower storm sash and thinks it's securely latched. (It isn't.) Minutes or hours later, it comes crashing down. The result is either a broken pane or a broken aluminum frame. I also have latches that lock in place and won't release, no matter how hard I pull. On a scale of 1 to 10, I'd rate my triple-track storm windows a 2.

— C.L.

Aesthetics is not the only consideration when you buy stock storm windows — mechanical and design details count, too. Above, a tale of woe.

A WINDOW OR GLAZING contracting company is a good bet if you know what features you want. They carry and install storm windows from the big manufacturers--Pella, Andersen, Coradco, Marvin. These companies offer high-quality windows that are quite suitable for some circumstances. The average contractor may be very good at getting you "the best deal," but won't be looking out for aesthetic impact. That's up to you.



Photo: Mary C. Lambert

This 1880s Homestead/Queen Anne house belongs to OHJ subscriber Mary Lambert. For a couple of seasons, the Lamberts struggled to make a decision on what kind of storm windows to buy. Storms were deemed necessary for the northeastern Maryland climate, but none of the usual options seemed appropriate.

Glass and wood, a likely combination, would have been too heavy to handle. The Plexiglass and vinyl kits that were available in 1980 at first seemed a good idea, but Mary found the vinyl strips poorly fitted and "ghastly" with her interior trim.

A major consideration was the original wood-framed half-screens with their decorative cast-iron corner brackets. Discarding them felt anti-preservationist. Nevertheless, the Lamberts

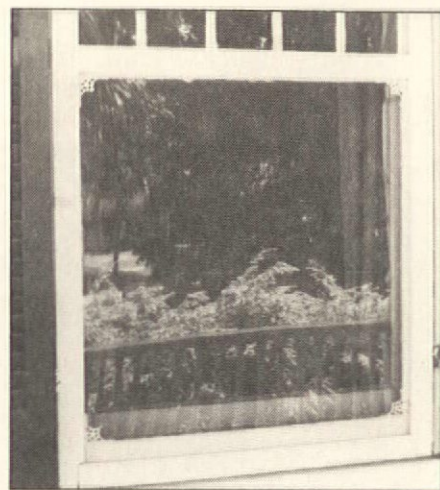




A search turned up a glazing supplier who sold them 'Caroglaz' acrylic glazing in economical sheets. Their carpenter hand-picked clear pine for the dowelled and butt-jointed frames. The panels pop in place in winter — without obscuring the half-screens that remain — and are clipped to the exterior casing with wing nuts. Each window cost \$44.80, installed. Materials cost just \$18.82 per window (1980 prices).

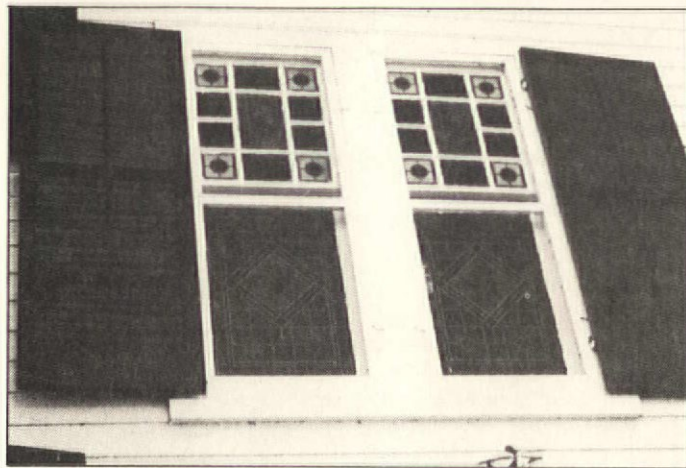
A hint from Mary Lambert: Acrylic is surprisingly scratch-resistant and non-yellowing. But it must be washed with plain soap and water, and preferably left to air dry. Don't use ammonia or coarse cloth on it.

*'Caroglaz' is manufactured by the J.W. Carroll Co., 22600 S. Bonita St., Carson, CA 90745; 9 Headley Pl., Fallsington, PA 19055; 12337 Tullie Circle, NE, Atlanta, GA 30329. They'll give you the name of a distributor in your area who can sell you acrylic glazing in large sheets if necessary.*



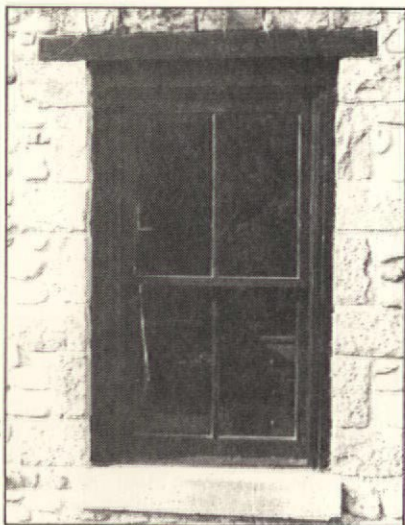
got estimates on permanent triple-track storm/screen windows that would take their place. In 1980, the contractor's estimate came to \$50 per window — not including installation! When she inquired whether the aluminum mid-rail would mate with the off-median meeting rails on her prime windows, Mary was told that would cost an extra \$10 per window. The Lamberts decided it was too much to pay for something they didn't really want anyway.

Finally, a compromise design dawned on them: "Why forget the wood frame because of its weight, when maybe glass was the real culprit? Using a light-weight synthetic glazing in a wood frame was the most appealing idea of all," Mary wrote to us.



Photos: Mary C. Lambert

The exceptional character of these Queen Anne windows is in the glass colors and patterns. Exterior wood storms, designed and installed by the owner, are nearly invisible. The house is in Havre de Grace, Maryland.



Photos: Larry Jones

An ideal storm window for 2-over-2 sash (above) might be mounted indoors. Yet these 1-over-1 wood storms look pretty good. Right: Raw aluminum insert frames make window look as if it has dental braces, until it's painted.





# RESCUING THOSE "HOPELESS" WINDOWS

*Sills like this can be rehabilitated. Those in worse condition can be replaced without replacing the entire window unit.*



Photo: Larry Jones

## Low-Tech Repairs

By Clem Labine

**A**T THE SIGHT of peeling paint on a window sill, the typical home improvement contractor will shake his head sadly and pronounce the window "hopeless." The only solution, he will announce gravely, is to replace the old window with a modern unit. But beware: Not only may the replacement look bad, but it may also be an unnecessarily costly solution.

THE WINDOWS in my 1883 brownstone were pronounced hopeless 15 years ago. Yet, with some relatively simple repairs, these windows have served me well for 15 years. Moreover, they should be serviceable well into the next century. And since it was all do-it-yourself work, the cost of repair was only a few dollars. Even on some standard commercial jobs, those contractors who take the trouble to cost out the alternatives are finding that in some cases it is cheaper to rejuvenate the old windows than to buy replacements.

THE TRADITIONAL wooden double-hung window has some outstanding advantages: (1) The wood is a relatively good insulator; (2) The simple construction makes it forever "fixable"; (3) The wood will last indefinitely if it's properly maintained. If the wood does rot out, new wood can be spliced in using simple carpentry techniques. Try to imagine locating replacement vinyl gasketing 10 years from now, or the problem of replacing a bent aluminum channel.

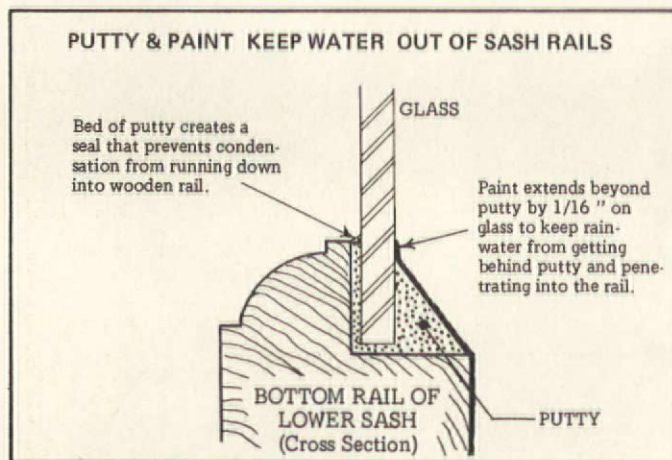
THE MORAL IS CLEAR: It makes sense to rehabilitate your current wood windows if at all possible.

## Dealing With Rot

**M**ORE THAN ANY other factor, rotted and checked wood in the sill and lower sash rail leads to the verdict of "hopeless." So this article is going to focus on the rejuvenation of partially rotted window elements. A directory of how-to information for the other common window repairs will be found on the opposite page.

BEFORE PLUNGING IN to repair and consolidate wooden window elements, try to determine whether the failure is caused by normal weathering, or whether there is an unusual condition that is causing water to collect on or behind the window. Among these conditions would be defective gutters, cracks in window framing that permit water to enter, sills that aren't tipped so as to shed water, and defective storm windows.

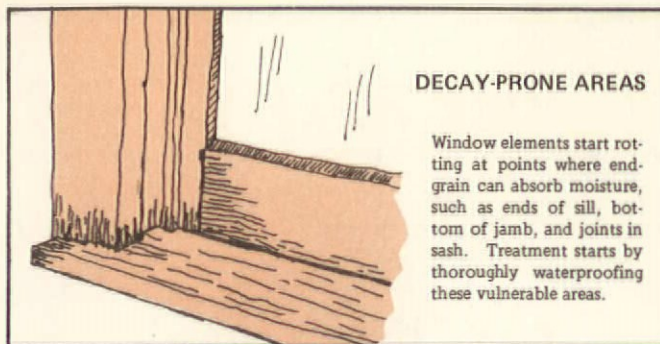
TRIPLE-TRACK STORM WINDOWS can trap water on window sills. The installers are supposed to leave two gaps ("weep holes") in the caulking at the bottom edge of the storm window. Then, during summer when the screen section is down, rainwater that gets on the sill can drain out. But if the storms weren't properly installed, or if the weep holes have gotten plugged, you have an ideal holding tank for rainwater.





**P**EELING PAINT is a good indicator of where water is entering wood. Usually you'll find paint failure on the top of the sill and areas where the end-grain of the wood is exposed to moisture. Wood that is badly deteriorated is a candidate for replacement or epoxy consolidation (see section following). Wood that has only minor decay (such as the sill in the photo opposite) can be rehabilitated with low-tech repairs.

**FIRST STEP** is to seal the wood to retard moisture absorption. Make sure the wood is thoroughly dry. Then scrape and wire-brush all loose paint. Better still, remove all the old paint with a heat gun or by hand scraping. Complete removal enhances absorption of the water repellent and subsequent adhesion of the new coat of paint. Flow on generous amounts of water repellent--as much as the wood will absorb. Pay special attention to joints and other places where water can reach the end-grain.



**FOR THE WATER REPELLANT**, you can use a commercial product (e.g., Thompson's Water Seal) or you can make your own (OHJ Oct. 1981 p. 223). Some old-timers prefer a 50-50 solution of boiled linseed oil and turpentine. Take your choice.

## Where To Find Window Fix-It Information

A directory of how-to information from two basic sources: the back issues of The Old-House Journal and the Reader's Digest Complete Do-It-Yourself Manual—a good, basic book available at most bookstores.

PROBLEM	WHAT TO DO	WHERE TO FIND INFORMATION
Sticking sash	Remove accumulated paint; lubricate with soap or paraffin; plane wood only if absolutely necessary.	Reader's Digest Manual p. 119
Excessive air infiltration	Caulk and weatherstrip	This issue p. 77 OHJ Sept. 1980 p. 128 Reader's Digest Manual p. 122
Broken sash cord	Replace cord or chain	OHJ Dec. 1979 p. 133 OHJ Aug. 1976 p. 1 Reader's Digest Manual p. 120
Broken glass	Re-glaze; while sash is out, do other reconditioning.	Reader's Digest Manual p. 123
Loose and/or missing putty	Remove loose material; reputty. Paint putty as indicated on diagram on opposite page.	Reader's Digest Manual p. 123
Peeling paint on frame	Eliminate unusual sources of moisture; strip or scrape loose paint; caulk; prime and paint.	OHJ Sept. 1980 p. 113 OHJ Apr. 1981 p. 89 OHJ May 1981 p. 103
Loose or rotten bottom rail on lower sash	1. Brace existing rail connection with flat angle; or 2. Splice in new bottom rail	1. OHJ Jan. 1976 p. 10 2. Reader's Digest Manual p. 388
Broken or missing muntins	1. Repair with epoxy if possible; or 2. Make or buy new muntin	1. This article 2. Consult local lumberyards; This issue p. 93 for custom millwork shops
Rotted sash	1. Consolidate existing sash; or 2. Replace sash	1. This article 2. This issue p. 94 OHJ Catalog for additional sources
Rotted sill	1. Consolidate existing sill; or 2. Replace sill	1. This article 2. OHJ Jan. 1980 p. 7



FOR BEST RESULTS, let the waterproofer dry for 24 hours, then repeat the process. After another 24 hours, fill all holes with linseed oil putty or glazing compound. Long cracks can be filled with a high-quality caulk, such as polyurethane. Also seal all joints in the window frame with caulk, especially the joint between jamb and sill. Wait at least 24 hours for a skin to form on the putty and caulk. Then prime with an alkyd primer. Finish coat can be either an alkyd or latex paint.

## Epoxy Consolidation

By Larry Jones

**R**OTTED WOOD can be detected with the "ice-pick test": Probe suspected areas with an ice pick. Those areas that break across the grain--rather than splintering--are weakened by rot and are candidates for epoxy consolidation. This is an amazingly simple technique for strengthening and solidifying decayed wood. The trick is to use the right epoxy, and knowing when it is cheaper to replace an element rather than consolidating it.

I HAVE FOUND that it is often cheaper to repair items such as deteriorated window sills than it is to pull the frame apart to replace the sill. Epoxy consolidants are not cheap--but splicing in new wood is a labor intensive (and thus expensive) process.

I SHOULD ALSO MENTION products that have NOT worked in consolidating exterior woodwork such as window sills. A spackling compound called Tuff Kote proved to be a total disaster, both when used by itself and in conjunction with fiberglass mesh. Auto body fillers, such as Bondo, and fiberglass boat repair products have not proved successful. If moisture gets behind these patches (which it has in our experience) it leads to further wood deterioration.

### One That Works

**I** FOUND ONE FIRM, through The Old-House Journal Catalog, whose products do work successfully on wood repair: Abatron, Inc. (see p. 94). The President, John Caporaso, has been very helpful in helping us find the right epoxy (they make dozens) for our application.

EPOXY CONSOLIDATION is usually a two-step process. First, an epoxy of thin viscosity (about the consistency of motor oil) is allowed to penetrate deep into the wood. When cured, the epoxy renders the treated wood fibers impervious to moisture--and thus relatively immune to further decay. The second step is to use a thicker epoxy to fill any cracks and voids, and to build up a smooth surface for painting.

THE PENETRATING EPOXY we used for the first step was a two-part system: Abocast #8101-4 resin and Abocure #8101-4 catalyst. It has a pot life of about 30 minutes when mixed for use. (The factory can adjust set-up times to suit needs.) Resin and catalyst are mixed at a 2 to 1 ratio for best moisture resistance, or a 1 to 1 ratio for greatest flexibility.

THE PENETRATING EPOXY can be applied with a brush, making sure to get it into all cracks and voids. It is best applied to horizontal surfaces since it is fairly thin, although sloping window sills seem to pose no problem. Lay window sashes on their sides to apply.

COST is about \$20 per quart (for a 2 to 1 mix, 3 quarts are required) or \$50 per gallon (for a 2 to 1 mix, 3 gallons required). The material seems to go a long way, so try out the quart size first.


## Filling Holes And Cracks

**A**FTER THE IMPREGNATING EPOXY has cured, thus stabilizing the rotted wood, any holes and cracks can be filled with an epoxy filler. Abatron recommends its Woodepox-1 as compatible with the Abocast impregnant used in the first stage. The idea is to fill up voids to a suitable thickness which, after curing, can be sanded and painted to match surrounding wood. Woodepox-1 can be built up to a thickness of several inches.

WOODEPOX-1 is also a 2-part system, mixed at a ratio of 1 to 1 of resin and hardener. The material may also be mixed with sawdust to extend it further. Cost is around \$18 per quart (2 quarts required) or \$36 per gallon (2 gallons required). As with most epoxies, you should plan on buying a quart of solvent for clean-up. Absolve solvent costs \$9 per quart.

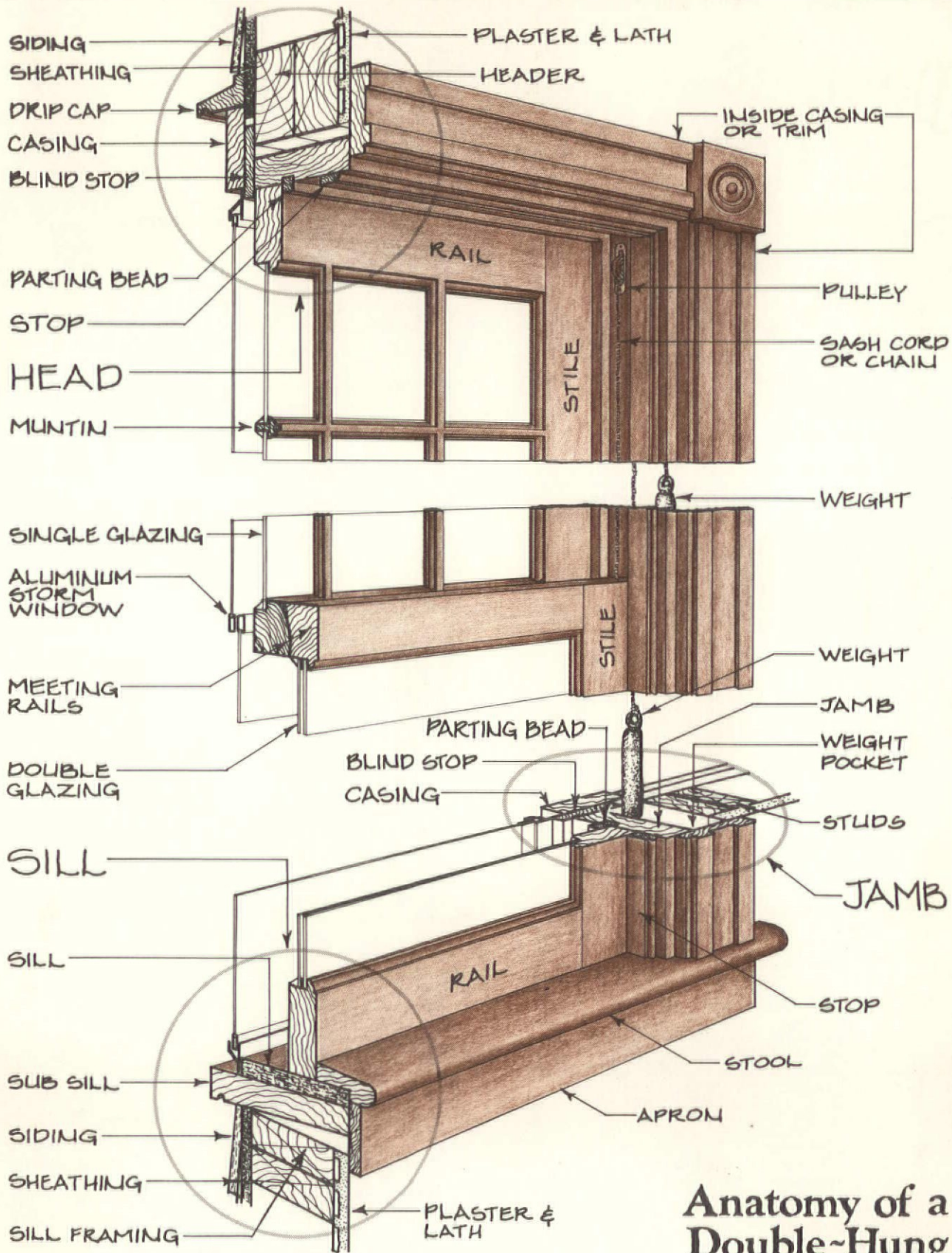
**Q**UONCE THE DETERIORATED WOOD has been stabilized and patched with epoxies, I favor treating the bare wood with a waterproofer or wood preservative before painting. A plain waterproofer is preferred over wood preservatives because it avoids the toxicity problems associated with preservatives. You can buy commercial waterproofer (e.g., Thompson's Water Seal) or make your own (see OHJ Oct. 1981 p. 223).

DIPPING OR SOAKING wood elements for at least three minutes is the best way to ensure deep penetration of the water repellent solution. One of the simplest ways to dip-treat wood elements, such as window sash, is to take an old piece of aluminum gutter that is long enough to hold the longest side of the sash. Cap each end of the gutter, sealing the seams with silicone caulk. Fill the gutter with waterproofer and soak each side of the sash in the trough, then set aside to dry.

TO USE THIS TECHNIQUE, the sash must be free of paint. Best results are achieved if the glass and glazing putty are removed from the sash. However, you can leave the glass in place with good results. Obviously, such areas as sills and jambs will have to be brush-treated. Allow the bare wood to soak up all the waterproofer it will hold in two successive brush applications. After 24 hours of drying, prime and paint as usual. 

COMING NEXT MONTH: Photos and text showing step-by-step procedures for epoxy consolidation of deteriorated wood.





## Anatomy of a Double-Hung Window

Restoration Design File #10

JONATHAN POORE 3/82



## A SIMPLE CONCEPT

# Movable Insulation

MAY BE ALL YOUR WINDOWS NEED

**M**OVABLE INSULATION for windows is not a new idea--just an idea whose time has come. We're referring to any opaque material, be it a shade, shutter, panel, curtain or quilt, that's fitted snugly against a window some of the time. Movable insulation is usually thought of as a block to conduction and convection losses at night or on cold, overcast winter days. But it's also used to block sunlight (heat) in sunny windows on summer days.

SOMETIMES CALLED "night insulation," movable insulation is easy to adapt for different seasons, window shapes, and tastes. So why aren't all our windows already fitted with one sort or another? We guess one reason is that it requires a subtle change in peoples's expectations...it means you have to pay attention to the weather and nightfall. ("Time to pop in the insulated panels.")

ALSO, it's not yet part of the usual energy-conservation arsenal at the hardware store. A few companies do sell custom-fitted insulation or kits, but mostly it's a do-it-yourself project. Don't let that deter you; if you make your own, it will look the way you want, cost what you can afford, and fit well.

### Curtains & Shades



CURTAINS AND DRAPES can be turned into high-performance insulation. The basic rules are few: (1) The curtain should slow heat transfer with multiple layers, inclusion of a reflective foil or fiberfill-type layer, or use of a very thick, tightly-woven fabric. (2) The curtain should contain a vapor-barrier material to keep condensation off the glass.

(Vinyl, foil, Mylar, or polyethylene can be used.) This impedes direct air flow, too. (3) The curtain must seal tightly to the top, sides,

and especially bottom of the window opening. You can employ lead hem weights, tacks, Velcro or magnetic fastening strips, side tracks, a high valance, etc.

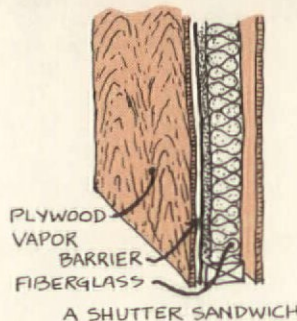
**BEWARE:** The so-called "thermal liners" sold in the drapery department are of little use as insulation or vapor barrier. They merely shade the fabric from exposure to sunlight.

EVEN THE LOWLY \$8 roller shade provides window glass with some insulation. More sophisticated

versions give a tighter seal on all sides, and feature multiple layering. The Window Quilt mentioned on p. 93 is a now-famous example of this type of window insulation. One of its multiple layers is a vapor barrier; it seals tightly on all four sides; and it's quite pretty (if not historical).

**REMEMBER THAT** a glossy white shade, or one with an aluminized foil layer facing outdoors, will turn away much radiant heat from the summer sun.

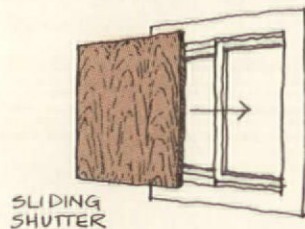
### All Kinds of Shutters



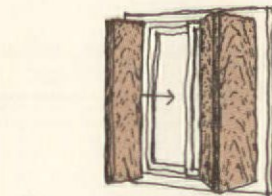
A SHUTTER SANDWICH

TO OLD-HOUSE PEOPLE, shutters are a familiar way to block the sun or close off chilly windows. When they're designed specifically for the purpose of insulating, shutters are much more energy-efficient than their old-fashioned counterparts.


SHUTTERS can be made as loose panels that must be stored when not in use. Then again, they can be attached to the window frame or casing, and designed to hinge, slide, fold, flip up, disappear, or any combination of the above. The shutter might be a foil-wrapped panel of laminated corrugated cardboard...or bifolding, hinged panels with a mahogany veneer concealing a fiberglass insulation/vapor barrier sandwich.



SLIDING SHUTTER



FOLDING SHUTTER

**I**F YOUR PRIME WINDOWS are tight and weather-stripped, consider movable insulation instead of storm windows. Storms are generally more expensive yet have a much lower R-value than insulated windows. If you already have storm windows, movable insulation is still quite effective. It saves energy and creates a warmer feeling in the room as it cuts convection and conduction losses through the cold glass. Movable insulation is almost always more cost-effective than triple glazing. 

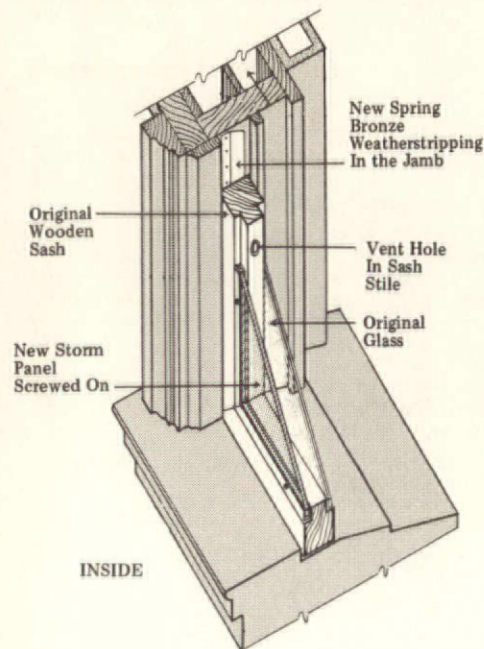
### 2 BOOKS

We didn't have room to give you all the design possibilities, let alone show you how to make your own movable insulation. But there are two excellent books you should have if this idea has merit for even a few of your windows.

The first is **MOVABLE INSULATION** (\$9.95 softcover), by William Langdon — a 379-page volume that gives hundreds of options for insulating windows, glass doors, skylights, greenhouses, and solar equipment. It's not a "pretty book," concentrating more on diagrams of all the options and how they're installed. The other book, **INSULATING WINDOW SHADE**, by Ray Wolf, is a step-by-step guide to making a thermal shade. (\$14.95 spiral-bound) We've seen the attractive prototype; it's an adaptable, cheap alternative to the ready-mades. Order both books from Rodale Press, Organic Park — Dept. OHJ, Emmaus, Pennsylvania 18049.



### "Integral" Storm Windows



When a preservation-minded architect is charged with the rehabilitation and energy-efficiency upgrading of a landmark building, an ingenious solution is born: integral storm panels, set into a new rabbet in existing wood sash. Architect Jack Graves would not consider two overused solutions — exterior storms and solar-tinted thermal replacements — because either would have had a negative impact on the look of the ornamented, light-colored Colcord Building. The use of metal replacement windows would have cost the owner preservation tax benefits. Technical Preservation Services (National Park Svc.) cautions that metal windows would (1) alter the character of the building, and (2) possibly cause an external condensation problem that could cause the terra cotta to spall.

The storm panel used was easily installed during overall reconditioning of the window. A neoprene gasket in the rabbet behind the new glass has thus far kept the humidity in the air space low enough to prevent condensation. (In wetter climates, a vent hole could be drilled in sash stiles.) Glass was used because weight was not a problem — sash weights didn't even need to be increased. Acrylic would have been initially more expensive and might have suffered under harsh cleaning by maintenance staff. The bottom line made everybody happy: Primary wood sash, reconditioned, weatherstripped, and retrofitted with year-round storm panels, cost 1/3 as much as new metal replacement windows, and were more energy efficient than new metal windows. (Metal-framed replacements, double-glazed, non-thermal-break, \$300. Repaired sash, \$100. Metal as above, U=.69. Wood windows, U=.49)

*A very clear, useful report about the Colcord windows was written by Sharon Park of Technical Preservation Services. It's not yet generally available, but we've obtained a pre-print copy. We'll Xerox it (with permission) for those interested in the details of the work. Please send \$2 to cover reprinting and postage costs to The Old-House Journal, 69A Seventh Ave., Dept. TPS, Brooklyn, NY 11217.*

### More Good News

**O** KLAHOMA'S COLCORD BUILDING has gotten a lot of attention, but it's not an isolated case. Repair, installation of storm windows and movable insulation, and thermal retrofitting are all good counter-arguments to window replacement. Other rehabilitation jobs have made use of hermetically-sealed double-glazing, available through window dealers and lumberyards. These glass units are inserted in existing sash after removal of the old single glazing layer. The process allows retention of the original sash and frames, but is probably feasible only for standard-size, 1-over-1 sash.



Photo: Larry Jones

Salt Lake City carpenter Jack Churchill cuts a deeper rabbet into old sash parts. A hermetically-sealed, double-glazed unit will be installed in the reconditioned window sash.

YOU CAN GO HALF-WAY, too, and save money along with the appearance of the window: Sash alone can easily be replaced, while jamb and casings are repaired. New sash can be ordered single- or double-glazed. If counter-weighted windows are double-glazed, be aware that sash weights may need to be increased.



GOOD NEWS

### Local Sources

The photo is of wood replacement windows, a specialty of Four Star Lumber in Brooklyn. Most communities have a millworks that will custom-make sash or whole window units.

For example, a recent job in Brooklyn required all new wood windows for a building being converted from light industrial to residential use. The Landmarks Commission suggested 6-over-6 sash as most compatible with the style of the building. Because of the special requirement, and because the oversize openings couldn't be fitted with stock units, the architect asked Four Star to build true 6-over-6 double-hung windows with single glass. (Double-glazed multi-light sash were considered unattractive because of the larger glazing bars, and because of expense — \$250 to \$300 per unit.)

Contractor cost was \$150 per window, primed. (Small jobs would cost up to \$190 per window.) In addition, wood frames for interior storm windows were built for \$35 each, unglazed. Light-weight acrylic will be used for easy handling by the owner. So — the 6-over-6 windows with interior storms cost less than stock windows of comparable quality.

*Thanks to Cosmo and John at Four Star Lumber, 189 Prospect Ave., Brooklyn, NY 11215. (212) 768-7112.*



## Sensitive Replacement

Built in 1837, The Old Market House in Lowell, Massachusetts, was first remodelled between 1868 - 1872. At that time, a cupola was added and original 8- and 12-light sash were replaced with 2-over-2.

The Lowell Historic Preservation Commission oversaw its rehabilitation in 1981. The building had been badly neglected. Besides rebuilding the cupola and reopening bricked-up windows, workers replaced all sash and frames. New wood windows match the Victorian 2-over-2 sash, but have 7/16-inch sealed insulating glass in each light. Real 1¼-inch wood muntins were used. Sash channels have spiral spring balances. The window fabrication was handled locally, and cost was competitive with standard units.

The photo was sent to us by architect Charles Parrott of the Lowell Commission.



Photo courtesy Lowell (MA) Historic Preservation Commission

**B**ACK TO HOPELESS windows--new replacements don't have to be a travesty. Recent high-visibility renovations have featured replacement of windows with new ones that are exact visual replicas of the originals. Several manufacturers, large and small, have responded to demand by introducing historically appropriate windows (see p. 94).

A SOURCE not to be overlooked is your local lumberyard or millworks. If you need special windows--say, round-heads or 6-over-6--local custom duplication is your best bet. First, write down your exact specifications. Then, take out the Yellow Pages and call every company listed under WINDOWS--WOOD, or MILLWORK, or even LUMBER. Start with the companies who

advertise "custom wood sash" or "double-hung windows."

## Bad News

**P**ROBLEMS to be wary of: Total Insensitivity, The Path of Least Resistance, and Manufacturer Mimicry. The first two are familiar and still rampant. The third, the most insidious, is gaining rapidly.

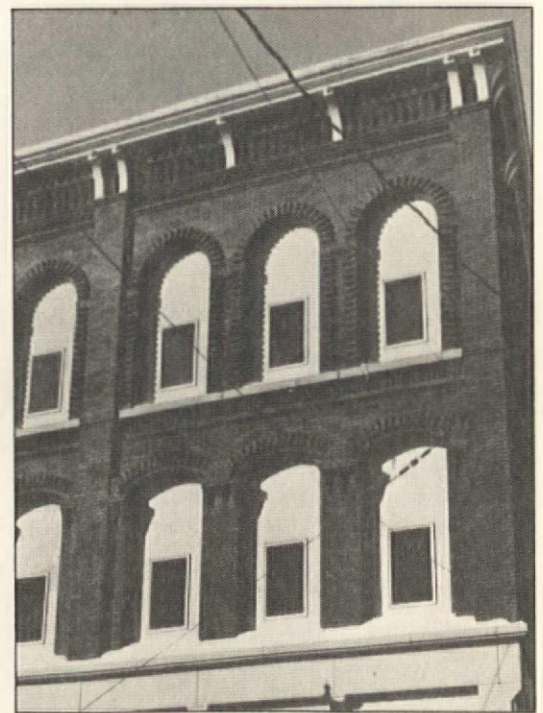
TOTAL INSENSITIVITY happens most often when a building is renovated for a new use. As a hallway becomes a bathroom, its window is blocked halfway up and turned into a blind ventilator. We've all seen these sometimes funny, always sad, examples.



## BAD NEWS

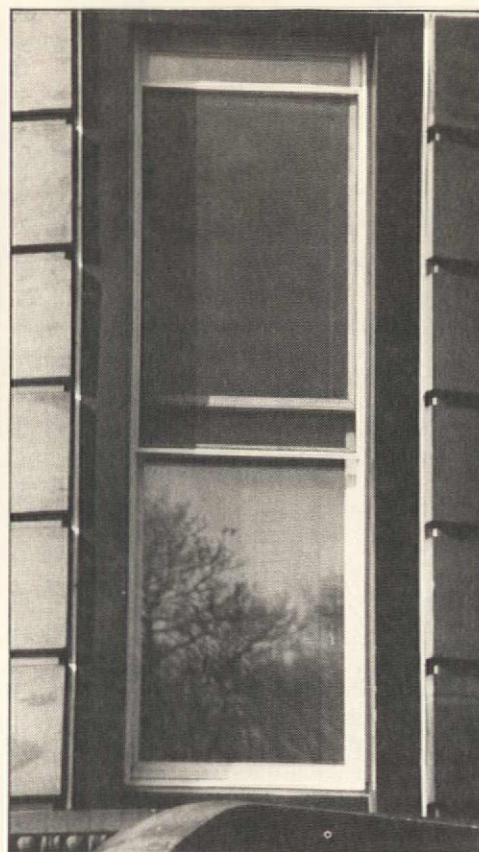
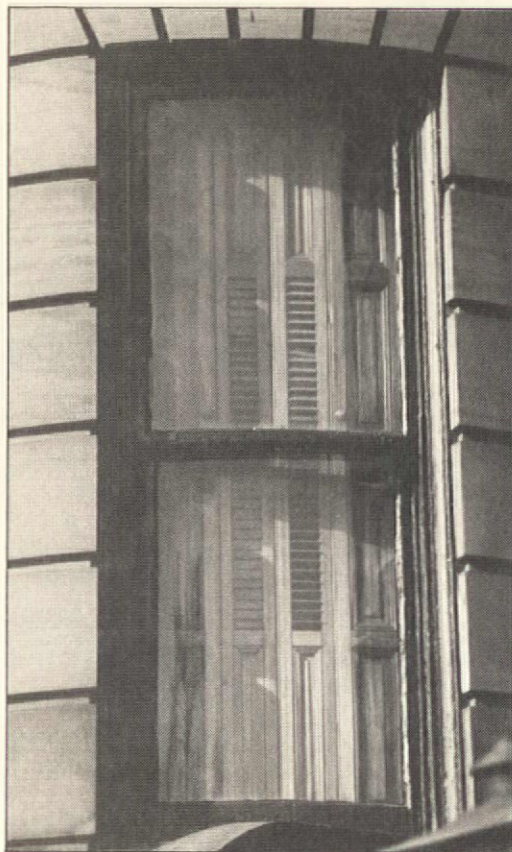
This is a clear-cut case of Total Insensitivity — a distinctive window, visible from the street, ripped out and its opening bricked up. It's no average building, either: It was designed by late-19th-century Philadelphia architect Frank Furness.

A runner-up for this month's Remuddling Award, photo at right shows a commercial building in Portland, Maine. It was sent to us by subscriber James Munch III, who wrote, "When I look at the building, I always think of it as being sick — which it probably is since its windows were reduced in the name of saving energy." Lighting and ventilation loads have probably increased dramatically in the 1877 structure.





## The Path of Least Resistance



The Path of Least Resistance comes perilously close to Total Insensitivity in this case of window replacement. These exceptional residential windows are on a wide, parkside avenue in an historic district. Yet the contractor employed to turn two of three such buildings into multi-family cooperative housing apparently had no time to respect the wood windows — which had curved sash rails and convex glass. His standard-size, flat replacements are surrounded by black aluminum infill to make them "fit."

THE PATH OF LEAST RESISTANCE is the most common reason for ugly windows. It's taken to avoid trouble, long searches, talking back to the contractor, making extra phone calls, or waiting for delivery of a custom item. Because it's so easy to take the Path of Least Resistance, we have wood windows replaced with metal; 4-over-4 sash replaced with 1-over-1; round-head windows ripped out, their curved tops filled in with plywood or bricks.

**M**ANUFACTURER MIMICRY is a new kind of bad news. With preservation and beauty higher in public consciousness (and with tax credits for sensitive work), window makers have begun to parrot the right words, but have missed on their meaning. Here are some things to watch out for:

- "Multi-light sash with 'muntins'." The manufacturer might mean wood or vinyl strips that snap in place over a single sheet of glass. Maybe that is what you're looking for; maybe it isn't.
- "Any size." One of the largest, best-known companies is currently promising "replacement windows to fit any size or shape opening" for old houses. Intrigued that a big company would offer custom windows, we checked it out. What they have in mind is combining their stock glass-pane sizes with thick metal mullions to infill the old opening!
- "Historic multi-light sash, double glazed." A year ago, a subscriber called us with a sad story: Her early 19th-century house has

multi-light windows with narrow muntins, and she needed a few replacement sash. A seemingly conscientious manufacturer talked her into the benefits of double-glazed windows, which he promised would have "real wood muntins"—separated panes, not just snap-ins. She ordered the sash, paying a dear price, only to realize on delivery that the muntins had been milled bulky and wide to accept the double glazing. The new sash doesn't even come close to matching original sash still on the house.

EVEN IN THE LAST EXAMPLE, it's a case of misunderstanding more than deceit. It probably never occurred to the manufacturer that the muntins had to be a certain size...just as the customer never thought to ask if the muntins would be big and fat. The moral is: Just because they use words like "old--historic--replica--any window," it doesn't mean they know what they're talking about.

### Thank You's

The Editors would like to thank several people in New York City who "talked to us of windows."

Gary Nebiol at Air-Flo Window Contracting Corp. was a great help with product information. Air-Flo is a window supplier-fabricator-installer for the New York metropolitan area; they deal in wood and metal, storm and prime, double-hung or casement windows, and specialize in production of windows that conform to Landmarks Commission standards. Their new address is Air-Flo, 194 Concord St., Brooklyn, NY 11201.

Alex Herrera at the New York Landmarks Commission, and Laurie Hammel at The Landmarks Conservancy, inspired us with their knowledge and specific source information.

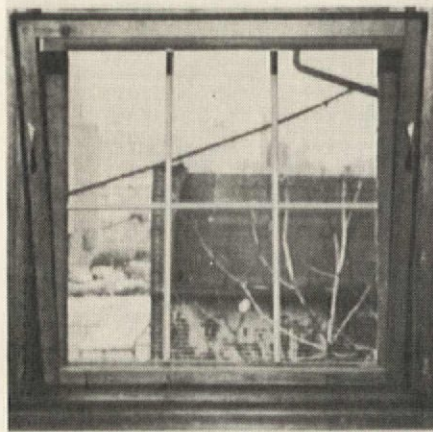


# Restoration Products News

## Interior Storm Windows

Interior storms are becoming increasingly popular as an inexpensive solution. These storm windows are usually glazed with acrylic (making them lightweight, regardless of size); they're easily detachable in case of fire; and they can be ordered or constructed to fit any size window. They should be handled carefully to avoid scratching the acrylic or bending the frame.

Poplar frames (usually two sections, ready to be painted or stained), acrylic glazing. Held in place by rubber tubing between the storm & interior frame. Custom made to fit even askew windows. 48 in. x 24 in. storm, approx. \$85. Brochure, 50¢. McNair Construction Co., Box 6414, Dept. OHJ, Baltimore, MD 21230. (301) 539-1237.



Custom-made wood interior storm by McNair Construction

In-sider available with a hinged aluminum frame, or a self-adhesive vinyl frame. Components for this do-it-yourself kit sold in most major hardware stores. Cost for 36 in. x 60 in. window, including acrylic glazing, \$30-\$50 depending on the frame you choose. Free brochure. Plaskolite, Inc., 1770 Joyce Avenue, PO Box 1497, Dept. OHJ, Columbus, OH 43216. (614) 294-3281.

Magnetite—in non-yellowing acrylic (1/8 to 1/16-in. thick) glazing with brown or white plastic frames. Attached with magnetic strip (on all four sides) to interior window frame. Can purchase components separately or have it installed to fit any size window. About \$4/sq. ft. (installed). Distributors throughout the U.S. & Canada. Free brochure. Viking Energy Systems Co., 275 Circuit St., Dept. OHJ, Hanover, MA 02339. (617) 871-3180.



Magnetite storms shown on hard-to-fit windows Photos courtesy of Bow & Arrow Stove Co.

## Metal Weatherstripping

Refer to page 77.

Integral weatherstripping in a variety of metals & sizes for casement and double-hung windows. Approx. 18¢/ft. (cost for a 3ft. x 6ft. window, uninstalled, \$4.25). Will sell direct. Free catalog. Accurate Weatherstripping Co., Inc., 725 S. Fulton Ave., Dept. OHJ, Mount Vernon, NY 10550. (914) 668-6042.

Aluminum integral weatherstripping, 22-23¢/ft. Sold through distributors. Free catalog. Pemko, 5535 Distribution Drive, PO Box 18966, Dept. OHJ, Memphis, TN 38118. (901) 365-2160.

Spring-metal weatherstripping in stainless steel. \$55-\$80 per double-hung window, includes reconditioning, installation, & 20 year guarantee. Presently only serving Westchester (NY) & Fairfield (CT) counties. Free information—specify Euroseal. Eurohome Comfort Systems, 155 Cortlandt St., Dept. OHJ, Buchanan, NY 10511. (914) 739-6336.



## Unusual Glass

Clear & colored hand-blown cylinder glass for restoration of old-house windows. \$5.25 and \$5.74/sq.ft. Free price list. Blenko Glass Co., Inc., PO Box 67, Dept. OHJ, Milton, WV 25541. (304) 743-9081.

Hand-blown bull's eye glass, 8 in. x 8 in. pane, \$40. Also diamond-pane leaded casement windows. Brochure, 50¢. Kraatz Hand Blown Glass, RFD 2, Dept. OHJ, Canaan, NH 03741. (603) 523-4289.

Complete selection of glass including bent (about \$75 per radius depending if stock or custom item), & glazing supplies. Free brochures on various subjects—making your own storm windows; cutting and measuring glass. Catalog, \$4. Shadovitz Bros., Inc., 1565 Bergen St., Dept. OHJ, Brooklyn, NY 11213. (212) 774-9100.

Machine-made clear glass bevels. \$.80-\$3 per bevel piece. Catalog, \$1. Whittemore Durgin Glass Co., Box 2065OH, Hanover, MA 02339. (617) 871-1790.

Several varieties of hand-blown & machine-rolled, antique styled glass. Clear & colored. Prices range from about \$1-\$10/sq.ft. Free information. Bendheim, S. A. Co., Inc., 122 Hudson St., Dept. OHJ, New York, NY 10013. (212) 226-6370. Also, Bienenfeld Industries, Inc., 22 Harbor Park Dr., Dept. OHJ, Box 22, Roslyn, NY 11576. (516) 621-2500. Contact a Bienenfeld distributor for your local dealer. Chicago: (312) 523-8400. Houston: (713) 864-0193. Wilmington, Cal.: (213) 549-4329. Canada: (416) 677-8600.



## Shutters, Shades, & Blinds

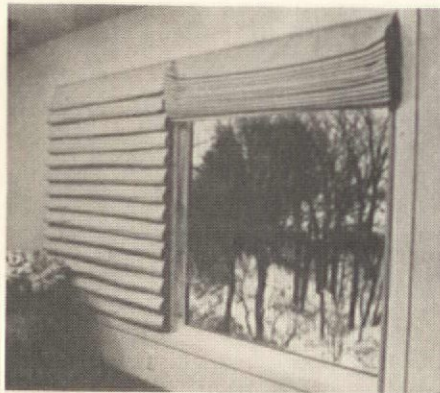
Night closure of interior shutters or insulated shades can result in significant energy savings, even over single glazing. These products can be designed to fit almost any style or size window. Unless otherwise stated, literature is free.

Custom-made insulated interior wood shutters. Pine, raised-panel shutters for 3 ft. x 5 ft. window begin at \$363. Order through dealers or direct, Neilson Co., Rt. 1, Dept. OHJ, Falmouth Foreside, ME 04105. (207) 781-2160.



Neilson's insulated shutters

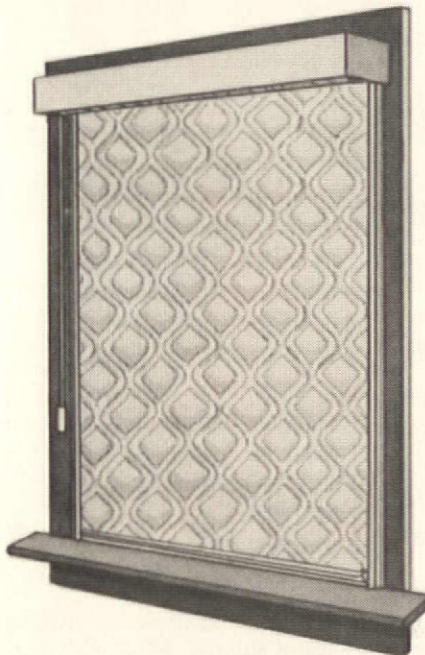
Two sources for plastic/vinyl "trac" kits for constructing your own insulated window shades. \$3-\$4/sq.ft. Can be purchased ready-made to your fabric and size specifications, or track can be ordered alone. Bow & Arrow Stove Co., (also distributor of Magnetite Windows), 11 Hurley St., Dept. OHJ, Cambridge, MA 02141. (617) 492-1411. Sold through dealers—Plum Industries, PO Box 14, Dept. OHJ, Delta, OH, 43515. (800) 537-1076.



Insul-Trac  
from Plum Industries

Complete collection of fabrics including acrylic flocking to make your own insulated shades & drapes. Average price, \$4.50/yard. Stores in Belchertown, MA; Cheshire, CT; & Scotia, NY; mail orders welcomed. Home Fabric Mills, Inc., PO Box 662, Rt. 202, Dept. OHJ, Belchertown, MA 01007. (413) 323-6321.

Window Quilt, a do-it-yourself or dealer-installed five-layered quilted roller shade with vapor barrier. Available in three neutral colors; held in place with self-adhesive plastic tracks. \$5-\$6/sq.ft., also solid panels, \$4-\$5/sq.ft. Sold through dealers. Appropriate Technology Corp., PO Box 975, Dept. OHJ, Brattleboro, VT 05301. (802) 257-4501.



Insulated window shade from  
Appropriate Technology

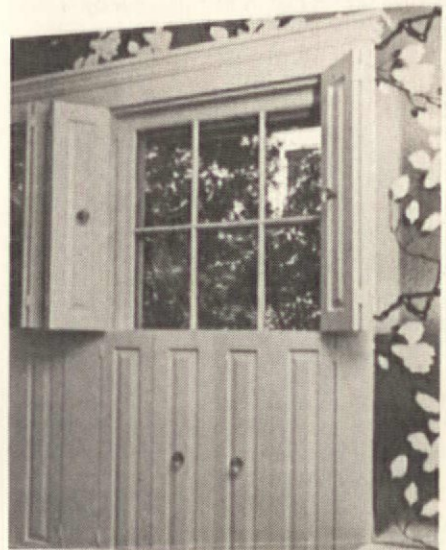
And the more traditional...

Custom shutters (especially historical duplication). Variety of woods & styles. 36 in. x 60 in. (4-panel, ready-to-install), \$275-\$300. Quotes made on detailed drawings or samples. Beauti-home, 408 Airport Blvd., Dept. OHJ, Watsonville, CA 95076. (408) 724-1066.

Wood Venetian blinds, a traditional window treatment, are \$8/sq.ft. Designed to fit a variety of architectural shapes. Free brochure. Devenco Products, Box 700, Dept. OHJ, Decatur, GA 30030. (404) 378-4598.

Most lumber yards will do custom millwork. However, if you have difficulty finding one, the following companies specialize in custom duplication of wood storm & prime windows. For a free price quote, send dimensional drawings and specifications; windows can be shipped nationwide.

Architectural Components, PO Box 246, Dept. OHJ, Leverett, MA 01054. (413) 549-1094. Brochure, \$2.  
Gibbons, John—Cabinetmaker, 2070 Helena St., Dept. OHJ, Madison, WI 53704. (608) 241-5364. Brochure, \$1.  
Hallelujah Redwood Products, Box 669, Dept. OHJ, Mendocino, CA 95460. (707) 937-4410. Catalog, \$1.  
Island City Wood Working Co., 1915 Sealy Ave., Dept. OHJ, Galveston, TX 77550. (713) 765-5476. No literature.  
Maurer & Shepherd, Joiners, 122 Nautic Ave., Dept. OHJ, Glastonbury, CT 06033. (203) 633-2383. Free brochure.  
Michael's Fine Colonial Products, Rte. 44, RD 1, Box 179A, Dept. OHJ, Salt Point, NY 12578. (914) 677-3960. Free brochure.  
Robillard, Dennis Paul, Inc., Front St., Dept. OHJ, South Berwick, ME 03908. (207) 384-9541. Literature, \$1.50.  
Somerset Door & Column Co., PO Box 328, Dept. OHJ, Somerset, PA 15501. (814) 445-9608. Free brochure.  
Strobel Millwork, PO Box 84, Rt. 7, Dept. OHJ, Cornwall Bridge, CT 06754. (203) 672-6727. Brochure, \$2.  
Victorian Millshop, 4220 Milwaukee St., Dept. OHJ, Denver, CO 80216. (303) 321-3771. No literature.



Shutters by Historic Windows

Solid hardwood Early American interior shutters (full or half). Custom-made only. 30 in. x 60 in. shutter set, \$150-\$170. Brochure, 50¢; sample, \$12 (refundable). Historic Windows, Box 1172, Dept. OHJ, Harrisonburg, VA 22801. (703) 434-5855.



## Prime (Replacement) Windows

The #1 rule when ordering prime or replacement windows is to measure carefully. Don't assume that the top and bottom widths are equal. Custom windows CANNOT be returned. If you order incorrectly, you'll have to adjust the window opening, or settle for a window that stands apart from surrounding windows. Unfortunately, one-size-fits-all windows, being easy to find, often result in inappropriate replacements. Listed here are leading companies that will manufacture custom-size windows for you. For a 36 in. x 62 in., double-hung window, expect to pay \$35-\$70 for custom sash; window units (sash & frame) begin at about \$120.

Clear white pine stock parts are used (for quick delivery) to make windows to your specifications. Custom sashes & special architectural shapes. Catalog, \$2. Drums Sash & Door Co., Inc., PO Box 207, Dept. OHJ, Drums, PA 18222. (717) 788-1145.

Prime & "self-storing" (upper sash storage) storm windows made of Ponderosa pine. Custom & stock sizes. Double-hung or tilt-takeout balances with 1 over 1, true-divided lights, or grill. Distributors throughout New England. Free brochure. Wes-Pine Millworks, Inc., King St., Dept. OHJ, West Hanover, MA 02339. (617) 878-2102.

Primarily Colonial reproductions, in clear white pine. 1-in. sash only. No literature. Write or call. Smith, R.W., 67 Main St., Dept. OHJ, North Orange, MA 01364. (617) 249-4988.



Marvin's own photo of their fanlight-topped production window. (Nice hat.)

Major manufacturer concerned with (re)fitting your windows with appropriate or custom-sized prime or storm windows (even special architectural shapes). Pine frames in a variety of styles including double-hung, casement, & true-divided lights. Free catalog. Distributors throughout the U.S. & Canada. Marvin Windows, 8030 Cedar Ave., Dept. OHJ, Minneapolis, MN 55420. (800) 346-5128.

## Wood Epoxies

Epoxies, considered superior to other fillers, can be used to stabilize and consolidate decayed wood. (See page 86.)

Manufacturer of a large selection of epoxies such as *Woodepox-1*, \$18/qt. (approx. mixed cost—epoxy is a two-part product). Mr. Caparoso will help you choose the correct product; send a detailed description of your requirements. All products sold direct. Abatron, Inc., 141 Center Dr., Dept. OHJ, Gilberts, IL 60136. (312) 426-2200.

Marine supply stores are a handy source for wood epoxies. *"Git"-Rot*, a two-part consolidating epoxy, is \$5-\$7 for 4oz. Sold through distributors nationwide. Free information. BoatLIFE, Inc., 205 Sweet Hollow Rd., Dept. OHJ, Old Bethpage, NY 11804. (516) 454-0055.

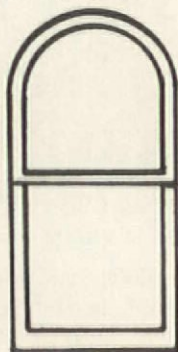
For land-locked customers, here's a mail-order source for BoatLIFE products. Catalog, \$1.25. Defender Industries, 255 Main St., Dept. OHJ, New Rochelle, NY 10801. (914) 632-3001.

## Awnings

Traditional window awnings in canvas and a variety of canvas-like materials. About \$100 (installed) per window. Free information; they'll guide you to their distributors nationwide. Astrup Co., 2937 W. 25th St., Dept. OHJ, Cleveland, OH 44113. (216) 696-2800.

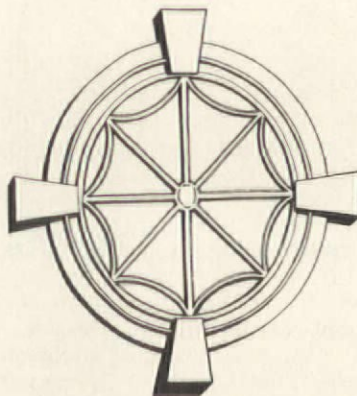
These companies custom-make windows in special architectural shapes, such as sidelights and fanlights.

Screens, storms, & prime windows in many custom shapes, including Queen Anne, fanlights, and Gothic arches. Pine frames sold in kit form with "everything" except the glass. Also a good selection of old-fashioned, often hard-to-find window hardware—sash hinges & adjusters, channel friction controls—even brass sash numbers 1-100. Catalog, \$1.50. Crawford's Old-House Store, 301 McCall, Dept. OHJ, Waukesha, WI 53186. (414) 542-0134.



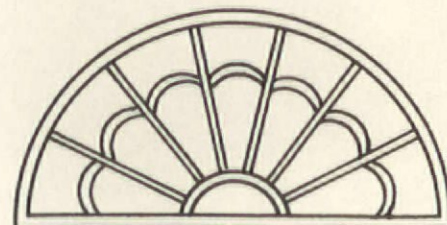
CIRCLE HEAD

Historical reproductions and custom designs beginning at about \$1,000. Brochure, \$2. John Lavoie, PO Box 15, Dept. OHJ, Springfield, VT 05156. (802) 886-8253.



Cameo window by John Lavoie

Straight transom, fanlight, & Palladian windows in single, double, or triple glazing. About \$850 for a 5- to 6-ft. fanlight. Brochure, \$1. Woodstone Co., PO Box 223, Patch Rd., Dept. OHJ, Westminster, VT 05158. (802) 722-4784.



Manchester Lite—custom fanlight priced at \$224 & up

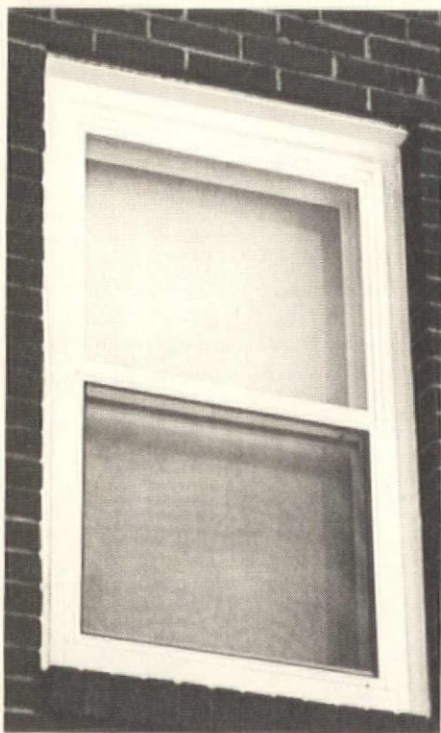
Custom window sashes & frames. Stained or antique glass is available. Average price, \$350. Free flyer. Manchester Lite, PO Box 143, Dept. OHJ, Manchester, MA 01944. (617) 526-4706.



## Storm Windows

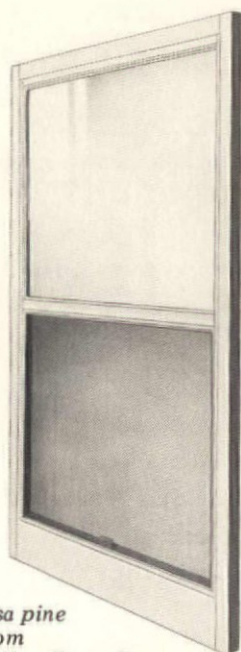
You have many choices when selecting storm windows. Custom-sized wooden storms, often authentic to your style house, can be purchased more readily and inexpensively than you'd think. Metal storms are a popular choice, especially with baked-on finishes. We haven't listed the more common metal storms, such as triple-track, because they're so widely available. Unless otherwise stated, these windows can be purchased directly from the companies, free literature is offered, & prices for a 32 in. x 64 in. storm range from about \$45-\$75. The article on page 80 points out features you should be aware of before making a purchase decision.

Tubular steel-framed storm windows, flush-mounted with *Thermolock* expanders for tight fit, even in out-of-square windows. 36 in. x 64 in., about \$128. Sold through dealers. RUSCO, RD 2, Dept. OHJ, Cochranton, PA 16314. (814) 724-4200.

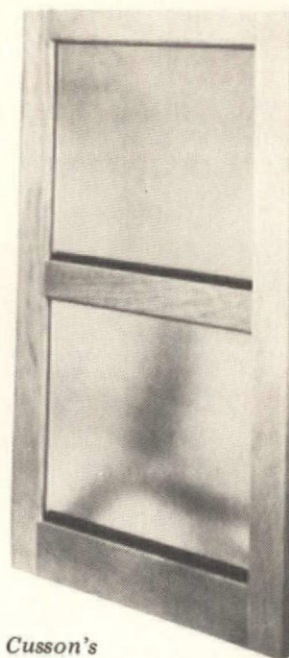


Rusco's metal storms fit out-of-square windows and come in a variety of traditional trim colors.

Custom & stock storm windows. Wooden frames with white aluminum storm or screen inserts. Sold also through distributors. Combination Door Co., PO Box 1076, Dept. OHJ, Fond du Lac, WI 54935. (414) 922-2050.



Ponderosa pine storm from Combination Door Co.

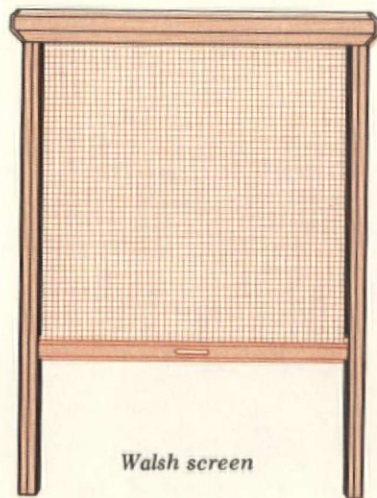


Cusson's wood storm

Pine wooden sash with storm/screen inserts in brown or white aluminum frames. Cusson Sash Co., 128 Addison Road, Dept. OHJ, Glastonbury, CT 06033. (203) 659-0354.

## Old-Fashioned Miscellany

Listed here are companies which carry unusual & often hard-to-find items.



Walsh screen

SCREENS: Interior rolled bronze screens custom-made to fit almost any window (ideal for casements). Will also restore or replace your present unit. Prices begin at \$56 for a 12 in. wide screen. Free information. Walsh Screen Products, 26 E. 3rd. St., Dept. OHJ, Mount Vernon, NY 10550. (914) 668-7811.

WINDOW HARDWARE: Numerous replacement parts for all types of windows, including casement. Catalog, \$1. Blaine Window Hardware, Inc., 1919 Blaine Dr., Dept. OHJ, Hagerstown, MD 21740 (301) 797-6500. See also Crawford's Old-House Store, p. 94.

SASH WEIGHTS: One of the last sources for cast-iron sash weights. 35¢/lb.—sizes range from 3 to 30 lbs. Custom castings, too. Free brochure. Waterbury Foundry Co., 112 Porter Street, PO Box 2450, Dept. OHJ, Waterbury, CT 06722. (203) 753-6680.

WINDOW CHANNELS: Replacement channels (\$10-\$15) available in most lumber yards, home centers, & hardware stores. Standard sizes only. Free literature. Quaker City Manufacturing Co., 701 Chester Pike, Sharon Hill, PA 19079. (215) 727-5144. See also Crawford's Old-House Store, p. 94.

GLASS BLOCKS: A variety of patterns & sizes in standard, thin, & solid blocks. About \$24/sq.ft. (installed). Distributors throughout the U.S. & Canada. Free information. Pittsburgh Corning Corp., 800 Presque Isle Dr., Dept. OHJ, Pittsburgh, PA 15239. (412) 327-6100.



# The Old-House EMPORIUM

## FOR SALE

**OLD VICTORIAN PAN LIGHTS:** solid brass, refinished, lacquered, & rewired. They vary slightly, but all are excellent values. 2-Light, 17 in. x 8 in., \$95; 3-Light, 18 in. in diameter, \$140; 4-Light, 21 in. in diameter, \$165; 5-Light, 21 in. in diameter, \$180. Shades are reproductions. Specify pink, yellow, or blue floral, or plain white. Limited Supply! Add \$3 for postage. William Spencer, Creek Rd., Rancocas Woods, NJ 08060. (609) 235-1830.

**PIANOFORTE—Square**—“Wm. Heinekamp & Son, Balt., MD.” Condition fair; mechanical good. Large carved legs. \$450. T. Pelan, Star Rt. 1, Box G, Brandy Station, VA 22714. (703) 825-2506.

**FEDERAL PERIOD MANTEL**—pine, 39 in. x 32 in. opening. Needs only repainting. Also, 3-piece Victorian cast iron fireback. A. Schwartz, Box 947, Haverstown, PA 19083. (215) EL6-0424.

**2 FIREPLACES**—white marble, curved openings, both in excellent condition: \$500 each. (203) 443-1864.

**EDWARDIAN PARLOR LIGHTS.** 2 ceiling fixtures, hung from chains. Each have 5 drop lights, some have original tinted shades. \$400 each. Also 2 matching (as above) wall brackets with hanging light. \$75 each. (212) 622-0884, after five.

**CHANDELIER** of ornate brass & crystal prism. Plain & fancy, odd-sized hot water radiators. Pat Rose, 218 David St., S. Amboy, NJ 08879. (201) 721-5334.

**LARGE COLONIAL** broken-pediment doorframe designed by Paul Williams in the 30s, removed from a noted Beverly Hills mansion; 13 ft. tall, 8 ft. wide, 22 in. deep. Price open. Also a pair of Victorian carved & etched glass doors. Each door 29 in. wide x 93 in. tall; \$3200. Von Hausen Studio, 1020 S. Robertson Blvd., Los Angeles, CA 90035. (213) 271-6555.

**CAST IRON BATHTUB** with claw feet and faucet; wooden screen door with design, 6 ft. 10 in. high x 34 in. wide; wooden panel door, 6 ft. 7 in. high x 31½ in. wide; wooden panel door, 6 ft. 4 in. high x 30 in. wide. Lee Alexander, 403 North Cedar St., Luverne, MN 56156. (507) 283-9476.



**COAL BURNER** cast iron fireplace faces, English, circa 1910. 18 available, with & without tile, all restored. Dick James, 2508 Laguna Vista Dr., Novato, CA 94947. (415) 897-8500.

**ANTIQUE STAINED GLASS** windows & doors. Assorted sizes & shapes. Many matching pairs, sets, picture windows. Lonnie Jergens, Box 113-A, Dial Star Rt., Blue Ridge, GA 30513.

**RARE OAK Hammacher-Schlemmer** combination tool cabinet-workbench, patented 1894. “The Wooten Desk of Workbenches,” 47 in. x 19 in. x 35 in. high cabinet with 4 drawers, opens up to maple workbench with vise, hold-down, tool tray, and storage for approx. 100 tools, etc. Best offer. Harvey Kaplan, (518) 272-3456, evenings. Pictures available.

**E.P. CARPENTER ORGAN** & padded stool—Pat. Dec. 14, 1880. In working order but bellows need restoration. York, PA. Call (717) 764-3544.

**INTERIOR WOOD TRIM** from 2 parlors of historic Philadelphia townhouse, c. 1779, dog-eared with pilasters under window sills, 2 mantels, doors, baseboards, chair rail. Trim, PO Box 1624, Philadelphia, PA 19105.

**SLATE FIREPLACE** & mantel, 52 sq.in. with metal opening—\$200 or offer. Shutters with movable louvers. Made in 1901. 6 pair, 31 in. x 71 in.; 4 pair, 31 in. x 71 in.; 4 pair, 31 in. x 54 in. \$20 per pair. 1223 E. 10th St., Davenport, IA 52803. (319) 322-4949, after 5.

**ROOFING TILE**, double-humped, French style, several thousand available. Taken from post-Civil War building. Larry Hardesty, 703 South Locust, Greencastle, IN 46135. (317) 653-6596.

## INNS & HISTORIC HOUSES

**NANTICOKE MANOR:** Historic brick house on Nanticoke River in quaint town of Vienna, MD. Featuring tourist accommodations. Bed & Breakfast, rooms, efficiency apt., tours, & antiques. Reservations, PO Box 156, Vienna, MD 21869. (301) 376-3530.

**RESTORED SLAVE HOUSE** on historic plantation-like farm. Ideal honeymoon or getaway vacation. \$250/week or \$135/weekend. Fireplace in country kitchen, bedroom & bath. 3 miles from Interstate 81 in Gerrardstown, WV 25420. Write The Slave Quarters, Box 135, or call (304) 229-3346.

**1899 INN—Bed & Breakfast** in Colorado. Wintertime, enjoy cross-country & downhill skiing; summertime, horseback riding, hiking, & fishing. Nightly rates start at \$17.50, including breakfast. 1899 Inn, 314 South Main, LaVeta, CO 81055. (303) 742-3576.

**ACCOMMODATIONS FOR Knoxville World's Fair** available in comfortably furnished 2-bedroom home in quiet residential area. Home includes furnished kitchen, laundry facilities, AC, & is located 17 mi. from Smoky Mts. National Park & 5 from Knox. airport. Travel, shopping, babysitting, & meal service available. Call (615) 982-1127.

**JONESBOROUGH—Tennessee's oldest town.** 30 mi. from Bristol, 90 mi. NE of Knoxville on U.S. 11-E. Near I-81. Bed & Breakfast within or outside of historic district. Jane Conger, Old Town Hall, Jonesboro, TN 37659. (615) 753-2095.

## MEETINGS & EVENTS

**13TH ANNUAL Prospect Lefferts Gardens House Tour** will be held on Sun., May 2. The 14-block Historic District is composed primarily of row houses in the Romanesque revival, neo-Renaissance, neo-Federal, neo-Georgian, & neo-Tudor styles. Also an outdoor flea market. Tickets are \$4. For more information, call (212) 282-0661 (day) or 284-6210 (eve.).

**PITTSBURGH HOUSE TOUR** May 15-16: Allegheny West Springfest opens 20 Victorian gems to the public. H.H. Richardson's Emmanuel “Bakeoven” Church, Calvary Church with its Tiffany interior, & homes of robber barons, Gertrude Stein's birthplace, & many more. Noon to 5PM both days in Allegheny West on Pittsburgh's North Side near Three Rivers Stadium. Call (412) 323-8884 or write Allegheny West Springfest, 845 N. Lincoln Ave., Pittsburgh, PA 15233.

## FREE ADS FOR SUBSCRIBERS

Classified ads are FREE for current subscribers. The ads are subject to editorial selection and space availability. They are limited to one-of-a-kind opportunities and small lot sales. Standard commercial products are NOT eligible.

Free ads are limited to a maximum of 50 words. The only payment is your current OHJ mailing label to verify your subscriber status. Photos of items for sale are also printed free—space permitting. Just submit a clear black & white photograph along with your ad copy.

The deadline for ads is on the 15th, two months before the issue date. For example, ads for the December issue are due by the 15th of October.

Write: Emporium Editor, Old-House Journal, 69A Seventh Avenue, Brooklyn, NY 11217.

**HARBORFAIR**, an 11-day festival at Snug Harbor in Staten Island, NY, May 21-31. Highlights include band concerts, crafts, antique & collectible sale, food booths, & performances. Space still available for craft people, antique dealers, & vendors. Contact, Harborfair, Snug Harbor, 914 Richmond Terrace, Staten Island, NY 10301. (212) 448-2500.

**OLMSTED & the Historic Landscape**, 3rd Annual Conference to be held in Chicago, June 3-6. Calling for participation to generate proposals for broad range of sessions that would be of interest to conference attendees & have not been previously published or presented. For information or submittals, contact Sandra L. Higgins, Conference Coordinator, Friends of the Parks, 53 West Jackson Blvd., Chicago, IL 60604. (312) 922-3307.

**8TH ANNUAL HOUSEWALK** by the Frank Lloyd Wright Home & Studio Foundation in Oak Park, IL, on Sat., May 15, 1982 from 9AM to 5PM. 10 buildings will be open for guided tours, 5 of them designed by Frank Lloyd Wright. Tickets may be purchased from the Frank Lloyd Wright Home & Studio Foundation, 951 Chicago Ave., Oak Park, IL 60302. \$15 before May 1st; \$20 after. For information, (312) 848-1976.

**OLD HOUSE FAIR IN NEWTON, MA**, will feature 50 exhibits of products & services for restoration of older homes. Extensive catalog, film, workshops, food, and entertainment. Sun., May 2, noon until 5PM, at War Memorial Hall, 1000 Commonwealth Ave. \$2.50 adult admission. Call Newton Historical Society, Jackson Homestead, for information. (617) 552-7238.

**VIENNA HERITAGE DAY**—Join us in historic MD (estab. 1706) on the famous Eastern Shore, Sat., May 22, from 10 to 4:30. Some of the early homes will be open; also scheduled is a human wax museum, Nanticoke Indian descendants in dance, an ice cream parlor, flea market, exhibits, food, etc. For further information, contact Harry Rinehart, (301) 376-3413.

“SHORT COURSE on Energy & Historic Buildings,” given by Washington, DC chapter of APT. April 29, day-long. Registration, \$40. Contact Debbie Burns, 4682 S. 36 St., Arlington, VA 22206. (703) 379-4331.

## POSITION OFFERED

**CHICAGO:** Internship positions with Neighborhood Reinvestment Corp. available in 2-mo. training program beginning Sept. 13, 1982. Seeking persons with existing construction/rehabilitation skills, will orient them for working with a Neighborhood Housing Service Corp. (NHS) program. Salary \$1,000/month during training; \$14,000-\$17,000 when placed permanently. Applicants must have degree or equivalent experience in residential housing construction or rehabilitation. Send resumes to: Janet Curry, Neighborhood Reinvestment Corp., 127 North Dearborn St., Suite 1228, Chicago, IL 60602. Deadline for receipt of applications is May 31, 1982.

## POSITION WANTED

**REGISTERED ARCHITECT**, experienced in restoration, preservation, & remodeling; research, design, planning, working drawings, specifications, & teaching; Master of Architecture degree; on board of county preservation society; 29 years; seeks position with preservation-oriented design firm or agency. Will relocate. Michael Chusid, 1609 N. 9th St., Sheboygan, WI 53081. (414) 458-5871.

## REAL ESTATE

**LOUISA COUNTY, VA:** Frame, 1830s country house, centre-hall, 2-over-2, with back wing addition featuring large, stone fireplace on 8 fenced acres. Many dependencies, separate studio. Central heat, custom kitchen, 2 new baths. Price: \$105,000. Royer & McGavock, Ltd., 3 Boar's Head Ln., Charlottesville, VA 22901. (804) 293-6131 or evenings and weekends (804) 589-3083.

**RICHMOND, MO—1899 Queen Anne** in perfect original condition, inside & out. Only one owner. 4 bedrooms, 2 baths, 4 fireplaces, original chandeliers. Needs some work. In small town 50 miles from Kansas City. \$30,000. Contact M. Matthews, 3838 Main, Kansas City, MO 64111. (816) 531-5050.

**LOVELY 1881 3-storey brick home** on large lot. 3 bedroom home with 4 income units, 2 furnished. Near Lake Rathbun. \$100,000. Mr. & Mrs. H. Jennings, 405 South 12 St., Centerville, IA 52544.





**15-ROOM Brick Victorian home**—showpiece of urban national historic district. Partially-restored interior, exterior complete. Dumb-waiter, speaking tubes, stained glass, impressive woodwork, 4 fireplaces. Park with fountain & gazebo directly across the street; walk to downtown St. Paul. Over 1/2-acre yard. 59 Irvine Park, St. Paul, MN 55102. (612) 225-0068.

**SOUTH FLORIDA**—Romantic Victorian estate, spindle porches, dentil moulding, 100-year-old stained glass. Master Rococo suite, every modern convenience in 5-acre secluded tropical paradise. Only \$350,000. E.L. Cotton, Inc., Realtors. (305) 235-2313.

**SEACOAST, NH**—Waterfront cottage converted to year-round home. Expanded & modernized, 5 bedrooms, 4 1/2 baths, 4 beautiful fireplaces, plus 3 wood stove hookups. Private acre, magnificent views, boating, swimming, oystering; possible as 2-generation home. \$229,000. Barbara Krooss, Mill Ridge Real Estate, Stratham, NH 03885. (603) 772-6319.

**JERSEY SHORE**—1872 14-room, solid Victorian home. Includes 6 bedrooms, library, fireplace, 2+2 baths, oak floors, hot-water heat, copper plumbing, full basement, & 2-storey carriage barn on 5.25 acres. 60 miles NYC, beach 1 mile. Bill Miller, Homestead Agency, Manasquan, NJ 08736. (201) 223-9000.

**CENTRAL NY STATE**—3-storey brick house. Built to resemble Scottish castle. 20 mi. S. from Saratoga; 30 mi. W. from Albany. Has working elevator, 2 fully equipped kitchens, 6 working fireplaces, 4 1/2 baths, 4 bedrooms on 2nd fl. w/2 extra bedrooms on 3rd floor. 16 rooms in all with lg. central hall. Has incinerator & auxiliary power generator. Large 3-car garage is a full 2-storey building. On 1 acre in city. By owner—41 Grant Ave., Amsterdam, NY 12010. (518) 842-5803.

**1888 QUEEN ANNE** on the bluff: Jersey Hts., 25-rm rambling towerhouse, large yard, old trees; new zoned gas heat, electric, plumbing. Parquet, carved bannisters, stained glass. Skyline view; safe, quiet, treelined neighborhood; under 10 minutes to Manhattan by car/bus/train. Needs carpentry. Best offer. Alfred Miller. (212) 764-1711.

**WAYCROSS, GA**—c. 1890, 2-storey Italianate in Historic District listed on National Register. Modified in 1905. 3 bedrooms, 2 baths, modern but sensitive kitchen, parlor, dining room, sitting room, laundry. Completely insulated, re-wired, re-plumbed. 6 fireplaces w/dampers. Original ceilings, refinished pine floors. Also, adjacent lot with unrestored 2-storey. Prefer to sell together. \$57,500. (912) 283-5754.

**NORTHPORT, L.I.**—North shore, 45 min. from Manhattan. c. 1850 Greek Revival, selected for National Registry. 3 blocks from water—features 2-3 sunny bedrooms, large living room and fireplace, all impeccably restored. All new large kitchen & 1 1/2 tiled baths. New mechanics—brass plumbing, 220 wiring & McWeil gas burner, washers & dryer, freezer, etc. 2-car garage, lots of big trees. \$67,000, owner—please call and leave message, (212) 875-2735.

**UNIONTOWN, PA**—c. 1850, entrance hall, twin parlors, dining room and kitchen down, 4 bedrooms and bath up. 7 fireplaces, front & back stairs. "L" shaped with 2-storey porch, partial basement, hardwood floors, & serious structural problems. This isn't a house for someone who has never restored a building previously. We are looking for nice, dedicated neighbors. \$15,000. Mr. & Mrs. John L. Lloyd, 44 Union St., Uniontown, PA 15401. (412) 438-8957.

**WASHINGTON, DC**—Restored 1908 brick semi-detached townhouse. 3 storeys plus English basement, income potential. Parking. 12 rooms, 3 1/2 baths. Dining room leaded glass doorway, oriel & bay windows, 2 staircases. False & working fireplaces. 14 period chandeliers, 15 sconces. Quiet, near park. Excellent price & financing. Owner occupied. VanDorn, PO Box 53127, Washington, DC 20009. (202) 667-2097.

**HISTORIC LEXINGTON, GA**: Only 20 min. from Nation's oldest state-chartered university. 6 br, 2 bth, 8 fireplaces. Over 3500 sq.ft. with lots of potential. Priced to sell at only \$39,500. Thomas N. Epps, Box 382, Athens, GA 30603. (404) 353-2228.

**ALLEGAN, MI**—1893 Queen Anne. Beautiful woodwork. Stained glass windows, double parlor, fireplace, 5 bedrooms, 2 baths, modern Victorian style kitchen. Major renovation completed although some decorating & porch repair needed. Ideal weekend retreat from Chicago. Commuting distance from Kalamazoo and Grand Rapids. \$49,900 owner. (616) 673-8094.

**HISTORIC HOTEL** in Downtown Fort Collins Renovation District. Needs total rehabilitation. 6000 sq.ft., red-stone exterior on 3 levels with loads of windows, "Old Town" location & good neighbors. For sale by owner. \$180,000 w/terms. Wm. J. Warren & Son, Inc., 202 West Magnolia St., Fort Collins, CO 80521. (303) 482-1976.

**NEWBURGH, NY** (Orange County), 65 mi. to NYC. 19th-century Townhouse. Brick, 12 rooms, 2 baths, parquet floors, ornamental woodwork. In terrible condition; needs a dedicated restorer. \$10,000. 1875 Federal, original stucco walls, good mechanicals, 3 bedrooms. (Presently rented, a good second income.) \$15,000. Call (212) 677-0887, evenings.

### RESTORATION SERVICES

**COMPLETE RESTORATION**, renovation, & adaptive re-use services in Rocky Mountain region. Complete building inspection service. Wm. J. Warren & Son, Inc., 202 West Magnolia Street, Fort Collins, CO 80521. (303) 482-1976.

**REPRODUCTION FURNITURE**: Will build any kit for the price of the kit plus a fee. If manufacturer also builds kits, the fee will be less than they charge. Examples can be seen in my home. Also, repair & refinishing of furniture. Located 20 miles from New York City. (914) 354-4605.

**FINE RESTORATION WORK** on all the things to furnish your old house: furniture, china, stoneware, marble, bronze & brass, caning, rushing, shaker-tape replacement. Careful professional work. Stop in & see us, or call. The 1851 Co., Star Route/Box 120, Millville, PA 18443. (717) 729-7614.

**NEW ENGLAND MASON** catering to the needs of old-house owners. Stone and brick repair, reconstruction, & new construction. Work done in accordance with engineering codes of 1899. Serving New England & New York areas. Have trade, will travel. Henry Maksymowicz, mason contractor. (401) 885-2651, PM.

**PERIOD HANDCRAFTS RECREATED**—Complete the restoration of your home: lace curtains, dollies, runners, afghans, table dressings made to your specifications. Also: custom-made vintage clothing. When requesting brochure, include the date your house was built. Contact: Lauren Sinclair, Amaryllis, 188 Summit Ave., Brookline, MA 02146. (617) 566-6034.

**PAINTING & DECORATING**. We specialize in the restoration of older properties. Emphasis on thorough preparation and careful workmanship. Services include interior & exterior painting, paint removal (int & ext), paperhanging, wall & ceiling repair, and minor carpentry. Boston, MA area. Yankee Painters. (617) 438-3295.

**PRESERVATION/RESTORATION CONTRACTOR** for 18th- and early 19th-century domestic architecture is seeking interesting projects for the coming year. Knowledgeable, skilled craftsmen from structural repair to finish details. Timber Frame Co., RFD 2, Orange, MA 01364. (617) 249-4643.

**PRESERVATION PLANNING** for homeowners to Historic Preservation Commissions. Consulting from adaptive reuse to 1981 Tax Act incentives. Reasonable fees for quality service. Contact Richard Walling, R-C Preservation, 110 Old Matawan Road, Old Bridge, NJ 08857. (201) 238-2584.

**BOB SMITH** Decorating & Repair. Slate & tile roofing, custom copper work, metal fabricating, concrete shingles. Restoration work, carpentry rehab work. (312) 238-2113.

**MASONRY-BUILDING** restoration specialist, since 1903. Serving the entire Eastern United States. Consulting and contracting services offered for proper masonry cleaning, pointing, sealing, and repair. Federal, State, and private references available. For free brochure and consultation, write Keystone Waterproofing Co., Inc., PO Box 181, Latrobe, PA 15650 or call Donald McDevitt at (412) 539-8000.

**MEASURED DRAWINGS**—We provide basic architectural drawings for preservation or renovation projects where no drawings of the existing building are available. Your building is carefully measured & scaled plans, sections, & elevations are accurately drafted. Washington, Maryland, & Virginia area. Measured Drawings, 1449 Rhode Island Ave., N.W., Washington, DC 20005. (202) 797-0666.

**RESTORATION YOUR PROBLEM?** Restore & preserve sensibly—all phases of interiors & architectural details. Planning & consultation work also available. In Suffolk County, (516) 537-0756.

**RESTORATION & REPAIRS** on old homes; cornices rebuilt, missing pieces made, & structural repairs. Bucks County-Princeton area. Call W. Hill, (215) 752-3103.

**RESTORATION** of interior wood surfaces, including stripping & refinishing of all woodwork, mantels, staircases, ceiling beams, etc. We rebuild damaged or missing architectural pieces & provide other services for restoration projects. Call for free estimate. Minneapolis and St. Paul area. Interior Restoration, (612) 647-1708; Peter Kessler, owner.

**RESTORATION CONSULTANT & contractor** for historic buildings, dating 1840 to 1930. Services offer complete restoration from foundation to roof, interior & exterior, preservation planning, & National Register nominations. A portfolio is available upon request. Contact Mike Byrnes, Olde House Restoration Services, 10300 SW 4th, Portland, OR 97219. (503) 244-0012.

**RARITIES GALLERY**—Hamilton, NY (315) 824-2747. Antique restoration & refinishing, seat weaving, trunk restoration. Interior restoration & design. Period Federal farmhouses are our specialty. Bonded & insured. Examples of early antiques shown by appointment only.

**STAN WATT**—Master builder. Designer—consultant. "From A Shelf To A Chateau." Willing to travel. Call Woodsons, (212) 788-1770.

**FINE WOODWORKER/BUILDER** offering services for restoration work. Skilled in all phases of wood-working from construction, restructuring, & repair to cabinet & millwork. Careful attention to details always provided. Bob Hamburg, PO Box 465, Woodstock, NY 12698.

**INTERIOR STRIPPING & REFINISHING**. Doors, windows, baseboards, etc. You name it! All painted surfaces. Free estimates. References available. NYC area. Call Lawrence Brown, (212) 675-3921.

**THE COMPLETE DESIGNER** offers restoration, remodeling, period decorating, & period landscaping for home & commercial buildings, from plans-only to total project management. We're dedicated to OHJ philosophy & accustomed to tight budgets. Call (703) 521-1006 (Washington, DC, area).

### WANTED

**PATTERN BOOKS** and "house books" of the early 20th century, showing elevations, floor plans, photos, etc. Write or call giving title, description of contents, size, condition, & price. Librarian, Old-House Journal, 69A Seventh Ave., Brooklyn, NY 11217.

**PAIR OF POCKET DOORS**, approx. 6 ft. wide by 7 1/2 ft. high. Can retrofit opening to suit, with hardware. Pat Rose, 218 David St., So. Amboy, NJ 08879. (201) 721-5334.

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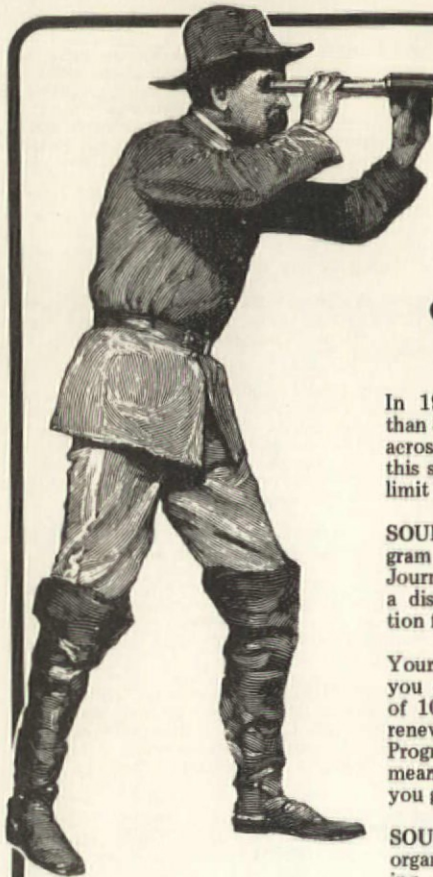
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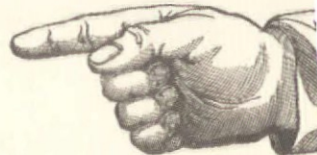
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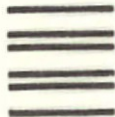
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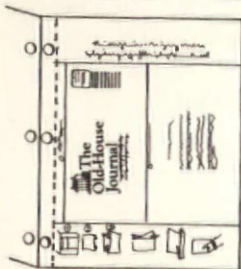
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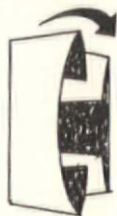
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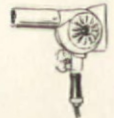
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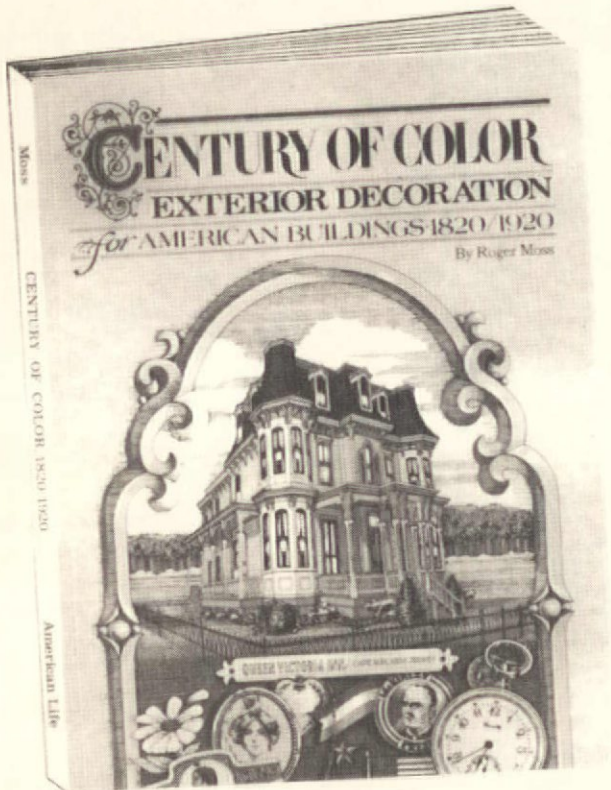
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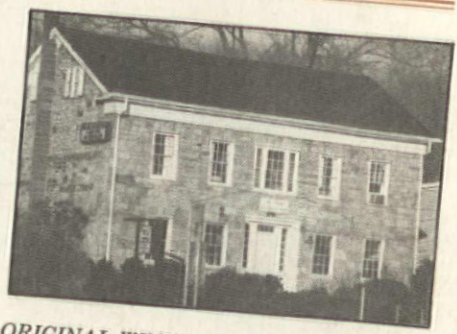
Opinion...  
**Remuddling**  
 — Of The Month —



**AFTER REMUDDLING:** This Colonial house originally had windows made from small panes of rectangular glass—probably 6 over 6. Because the long sides of the rectangles were oriented up and down, the original windows had a pronounced vertical look. The replacement windows, on the other hand, unbalance the house by accentuating the horizontal look. The panes of glass in the new windows are much bigger than the originals, and the glass is set horizontally. The net effect is to give the house a vacant, horizontal stare. To top things off, the shutters on the bottom windows are clearly fake, since they are too narrow to properly close off the openings.

**W**HAT A DIFFERENCE the right window makes! We're sure the owner of the house on the left did not realize he or she was making a major architectural decision when the windows were replaced. But by allowing the contractor to install whatever windows were on "special" that month, the appearance of the house was radically altered. It no longer has the old-fashioned charm of the original small-paned windows. But the house didn't gain a frankly contemporary look by the change either. All it looks like is another dreary remuddling.  
 --C.L.

**SEND IN YOUR PHOTOS:** If you have any clear black & white photos that show interesting examples of remuddling or technological trashing, send them in. Try to include examples of similar unremuddled structures. You'll win \$50 if your photos are selected for publication. Mail to: Remuddling Editor, The Old-House Journal, 69A Seventh Avenue, Brooklyn, N.Y. 11217.



**ORIGINAL WINDOWS:** This stone house of similar vintage has its original windows intact. The small panes of glass and the numerous muntins give the house a safe, enclosed look. The vertical accent of the windows counterbalances the horizontal nature of the front elevation.

  
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