Replacing Old Windows

good news & bad news

By Patricia Poore

Windows 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.

Too 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 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.

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.)

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Perspective...

Love and Hate
Under the Lunette

The 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 "windowicide": The owner destroys the old windows and replaces them with 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

We 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-kindle 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 "windowicide." 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 National 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) 246-2649.

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.
Talk To Me Of Windows

...a glossary

TO 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 remodeling 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.

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 moldings to give it the appearance of a window. Its purpose is to add symmetry or decoration to a facade.

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

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

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 — 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 — 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 — 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.

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.

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 — 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 — 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.

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). See also lunette.

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.

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

HOODMOULD — The outermost projecting moulding around the top of a door or window to discharge rainwater. Also called dripmould, 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.

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.

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 — 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.

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 — 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

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

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

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

OEIL-DE-BOEUF WINDOW — A small, fixed, round 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

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.

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.

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 quarre— the medieval term for the small panes of glass set diagonally in Gothic windows. see also lattice window and lozenge

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

ROUNDDEL — 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.

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

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.

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.

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

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.
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.

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.

Begin 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.
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.

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

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.

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)
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.

INSTALL 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. (Needlenose 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.
Storm Windows
Do You Really Need Them?

**YES ...but should I buy**
- inside-mounting
- outside-mounting
- glass glazing
- acrylic glazing
- storm/screen combination

**NO ...I'd be better off**
- wood-framed
- metal-framed
- magnetic
- removable
- fixed...

By Patricia Poore

IT 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.

LET'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?

MORE 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 unabused, these can become a semi-permanent solution.

Glass Or Acrylic?

HERE 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.
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.

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.

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.)

Wood, Metal, Or Combination?

Both 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 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.
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.

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

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.

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, Corado, 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.

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?

Despite 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.
A search turned up a glazing supplier who sold them 'Caroglas' 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.

'Caroglas' 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 glaz- ing 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.

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.
RESCUING THOSE "HOPELESS" WINDOWS

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

Low-Tech Repairs
By Clem Labine

At 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

More 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.
EEING 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 REPELLENT, 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.

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Epoxy Consolidation

By Larry Jones

Deteriorated wood can be detected with the "icepick 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 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 impermeable 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 form 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 Old-House Journal 86 April 1982
Anatomy of a Double-Hung Window

Restoration Design File*10

April 1982

The Old-House Journal
Movable 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 people'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 outdoor, will turn away much radiant heat from the summer sun.

All Kinds of Shutters

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.

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 mainly on diagrams of different 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.
GOOD NEWS

"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.) ruled 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, $1.69. 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

Oklahoma’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.

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 unsatisfactory 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 ran $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.

April 1982

The Old-House Journal
SINGLE 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 1/4-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.

BACK 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

PROBLEMS 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 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.

MANUFACTURER 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.
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, 50c. McNair Construction Co., Box 6414, Dept. OHJ, Baltimore, MD 21230. (301) 539-1297.

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.

Magnelite—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.

Unusual Glass


Hand-blown bull's eye glass. 8 in. x 8 in. pane, $40. Also diamond-pane leaded casement windows. Brochure, 50c. 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. $0.80-$3 per bevel piece. Catalog, $1. Whittemore Durgin Glass Co., Box 2065OH, Hanover, MA 02339. (617) 871-1790.

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

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.

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) 878-4598.

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.


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.

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.


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

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.

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.

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.

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.


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.

The Old-House Journal 94 April 1982
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.

Ponderosa pine storm from Combination Door Co.

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.

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

Walsh screen

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

Old-Fashioned Miscellany

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.

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 subscription. Old ad cancellations are at our discretion. Photos of items for sale are also printed free—price permitting. Just submit a clear hand or photo white photography 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.

The Old-House Journal

April 1982
WASHINGTON, DC—Restored 1908 brick and limestone house with 8 bedrooms, 3 baths, and 4 fireplaces. Over 3500 sq.ft., with lots of potential. Price: $15,000. Open for sale at 113 N. Epps Ave., Box 382, Athens, GA 30603. (404) 553-2227.


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/perm. Wm. J. Warren & Son, Inc., 202 West Magnolia St., Fort Collins, CO 80521. (303) 482-1976.

NEWBURGH, NY (Orange County). A 65 mi. to NYC. 19-century Townhouse. Brick, 12 rooms, 2 baths, parquet floors, ornamental woodwork. In terrible con­dition; a dedication needed $10,000. 1873 Fed­eral, original stucco walls, good mechanicals, 3 bed­rooms. (Presently rented, a second good income.) $14,000. Call (212) 677-0879, evenings.

JERSEY SHORE—1872 14-room, solid Victorian home. Includes 6 bedrooms, library, fireplace, 2-1/2 baths, oak floors, hot-water heat, copper plumbing, central heat. 9 blocks from Beach Ave., 2.35 acres, 60 miles NYC, beach 1 mile. Bill Miller, Homestead Agency, Manasquan, NJ 08736. (201) 232-8000.

CENTRAL NY STATE: 35-storied brick house. Built to resemble a medieval mansion. 30 mi. W. of Albany. Has working elevator, 2 fully equipped kitchens, 6 working fireplaces, 4-1/2 baths, 4 bedrooms on 3rd floor. Finished basement, 16 rooms in all with lg. central hall. Has incinerator & auxiliary power generator. Large 3-car garage is a full 4-storied building. By owner—41 Grant Ave., Amsterdam, NY 12010. (518) 482-5803.


WAYCROSS, GA—c. 1890, 2-story Italianate in Historic District listed on National Register. Modified in 1905. 5 bedrooms plus library, modern bathrooms, kitchen, parlor, dining room, sitting room, laundry. Completely insulated, re-wired, re-plumbed. 6 fireplaces w/radiators, 10 decor and stained glass windows, 2 pine floors. Also, adjacent lot with unrestored 2-storey. Prefer to sell together. $57,500. (212) 383-5754.

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. New all large kitchen & 1.5-tiled baths. New mechanics—brass plumbing, 220 wiring & Me­Well gas burner, washers & dryers, freezer, etc. 2-car garage, lots of big trees. $87,000. Owner—please call and leave message, (212) 875-2735.

UNIONTOWN, PA—1850, entrance hall, twin par­lors, dining room and kitchen down, 4 bedrooms and bath upstairs. 2 1/2 stories, front gable. LG. shaped with 2-story 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 15561. (215) 225-0895.

WASHINGTON, DC—Restored 1898 brick semi­detached townhouse. 3 storries plus English basement, income potential. Parking. 12 rooms, 3 1/2 baths. Dining room leaded glass doorway, crystal & brass chandelier, 6 staining & working fireplaces. 6 parlor, dining, living rooms. Excellent price & financing. Owner occupied. VanDom, P.O. Box 31371, Washington, DC 20009. (202) 667-2097.
Looking For Money?

Your Group Can Take Advantage Of OHJ's

- $10,000 Grant Program
- Revenue-Sharing Program

In 1981, The Old-House Journal gave more than $13,000 to 110 preservation organizations across the U.S. Your organization can tap into this source of funds this year; there's no upper limit on what's available.

SOURCE No. 1—The Revenue-Sharing Program. This Plan lets you provide Old-House Journal subscriptions to your members at a discount. You can sell a 1-year subscription for $12—a 25% saving.

Your organization keeps $6 out of every $12 you collect. You have to submit a minimum of 10 subscriptions (either new subscribers or renewals) to qualify for the Revenue-Sharing Program. Submitting the minimum 10 names means you keep $60. Send in 50 names and you get $300.

SOURCE No. 2—The Grant Program. Every organization that qualifies for Revenue-Sharing automatically becomes eligible for the Grant Program. In December, The Old-House Journal will award ten $1,000 grants to participating organizations. The grant winners will be selected by drawing. Winners of the 1981 grants were announced in the February OHJ.

For more details, and appropriate forms, call or write:

Sally Goodman
Grant Program Administrator
The Old-House Journal
69A Seventh Avenue
Brooklyn, N.Y. 11217
(212) 638-4514

What Style Is My House?

Old-house lovers across the nation ask the perennial question, "What style is my house?"

The American House has the answer. It's a unique, easy-to-follow illustrated guide that charts our country's architectural lineage from the 17th century to the present, and will pinpoint your home's stylistic influences.

Composed of line drawings with bite-size explanations, The American House, by Mary Mix Foley, highlights the essential form and detail of style. Perspectives on style, history, geography and culture are conveyed through illustration, rather than text.

The engaging picture-oriented approach charts the changes in America's residential trends for both the more formal styles, such as the Georgian, Greek or Gothic, as well as the not-usually-noted folk buildings.

The American House is a convenient, complete manual of style, an accessible history of architectural expression, and a field or armchair guide for buildings enthusiasts.

To order your copy of The American House, just check the box on the Order Form, or send $12.95 + $2 postage & handling to:

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□ The Old-House Journal

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What Color Should You Paint Your House?

Century Of Color Has The Answer.

Covering a full century of American architectural styles, with over 100 full-color illustrations, paint charts and special features, Century of Color: Exterior Decoration for American Buildings, 1820-1920 is the most comprehensive, practical guide to authentic, historically-accurate paint colors available.

Century of Color is a unique documentary history of exterior decoration featuring 100 authentic period color illustrations of the houses of the times, plus “Affinity Charts” showing color combinations, a paint chip card from the carefully-researched Sherwin-Williams line, and a guide to the selection and placement of colors.

This delightful house color guide has been researched and compiled by noted architectural historian Roger Moss, executive director of the Athenaeum of Philadelphia.

*Featured in this landmark guide are these outstanding visual treats:
  • 100 color plates that show “plain” Victorian and vernacular Classic houses, as well as the expected showcase homes. The color combinations emphasize the rich character and detailing of the architects’ designs. Moss carefully describes and analyzes each plate, sometimes even incorporating the language of the times. These plates are historic documents drawn from the archives of the Athenaeum of Philadelphia.
  • “Affinity Charts,” which detail 200 color combinations that are historically accurate . . . and diverse enough to stimulate everyone’s aesthetic taste.
  • A large color chip card featuring the 40 colors of the new authentic Sherwin-Williams paint line, “Heritage Colors.”

In addition to the visual aspects of this book, these editorial sections are included:
  • An extensive essay on exterior decoration
  • A Victorian architectural glossary
  • A microscopic analysis and Munsell color-coding reference guide to 57 colors found on original 19th-century paint chip cards.
  • A bibliography of published sources

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Allow 4 to 6 weeks for delivery.

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69A Seventh Avenue, Brooklyn, N.Y. 11217 — (212) 636-4514
WHAT 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-paneled 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.

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.

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