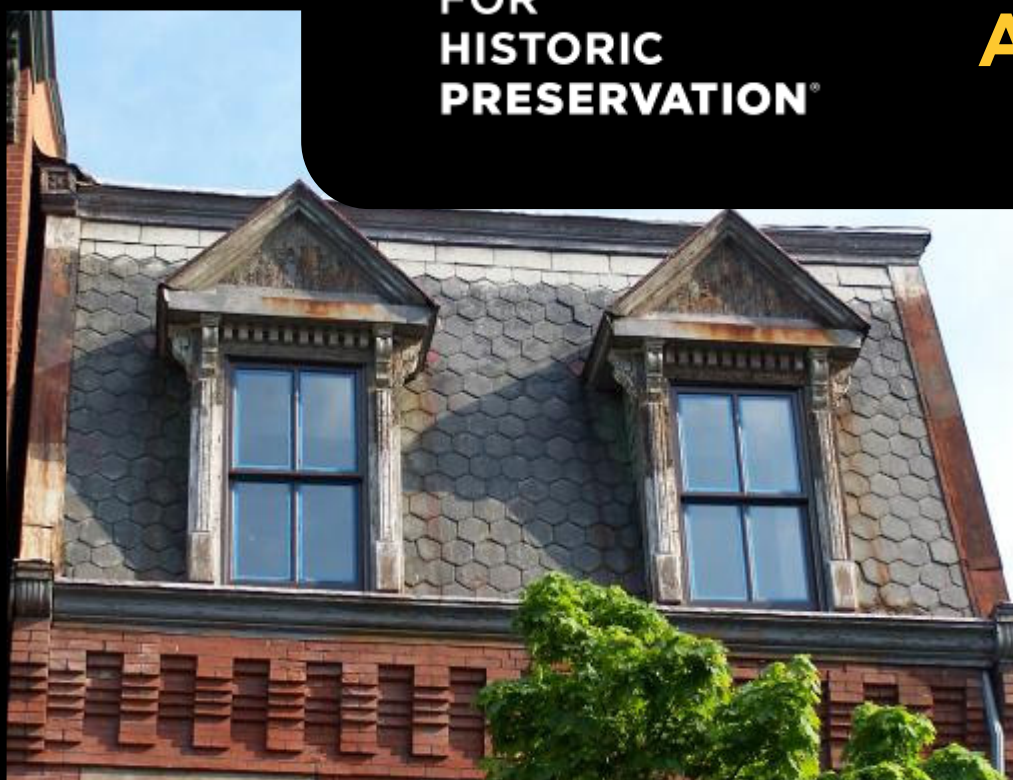




NATIONAL
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Window Types

A Residential Field Guide

About the Guide

Residential Window Types

The character of older and historic homes are often defined by their windows, whether an 1880s Queen Anne or a 1950s Split-Level. While they vary in size, shape, materials and proportion, windows also give scale to a house and provide depth. The proportion, divisions and materials of a window are essential elements of design. In most cases, windows are the most dominant visual element of an older and historic house.

Like architectural styles, there are a wide range of window types. Windows have evolved as technology has advanced. From the early multi-pane double-hung sash to the modern plate glass picture window, they have also changed along with the popularity of different residential architectural styles.

As a homeowner of an older and historic residence, you may want to learn more about your windows, why they are unique and, most significant, how to ensure they are maintained and energy efficient. The weatherization of windows, as part of a whole-house strategy, is important. Homeowners have choices. Older windows can always be retrofitted to be more energy efficient through a variety of methods, depending on the type of window.

This guide is intended as a resource to help get you started by identifying some of the most common window types found in older and historic residential architecture. A series of online links are provided for many of the window types so you can learn more.

For more information...

Go to www.PreservationNation.org/Weatherization to find additional resources on windows and much more for your older and historic building.

Bay and Bow



Oriel



Casement



Patterned



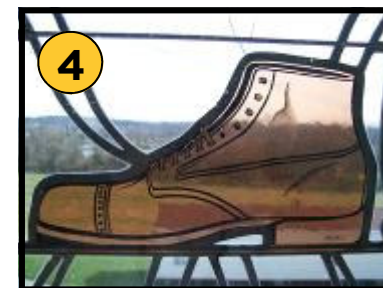
Gothic



Queen Anne



Leaded and Stained Glass



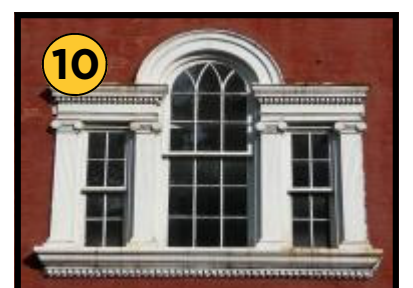
Single, Double and Triple-Hung Sash



Modern



Additional Window Types



Bay and Bow



Bay and Bow

Angular and projecting from the wall, bay windows can be found on any story of a building and on many building types. A bay window will allow more daylight, provide more views and offer better air circulation.

Bay - This window is usually made up of three individual window units (though sometimes it can be more). The side units will project outwards from the wall and the center window will join them together. Generally, angles may be 30, 45, 60 or 90 degree angles. Windows will be combined often with operable and inoperable units.

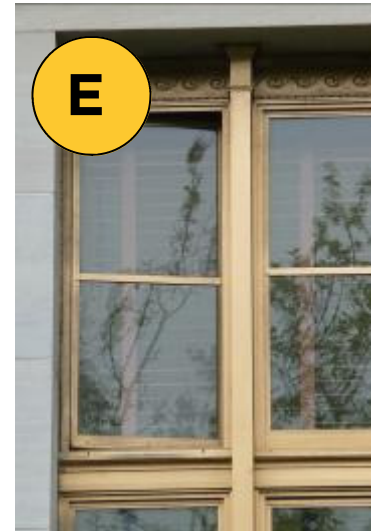
Bow - Like a bay, this window combines a more rounded curve than the angled step style of the related bay window type. Generally there will be four or five window units to make up the curved bow window.

- A Bay with metal casement windows on Tudor style house.
- B Art Deco apartment building in Brooklyn, NY, with metal casement windows.
- C Bay with one-over-one wood double-hung sash window
- D Bay with single metal casement windows on Tudor style house.

Wood-frame Victorian cottage with prominent bay window Manchester, New Hampshire



Casement



Casement

Casement windows are often a defining element of residential architecture. These are widely used in both traditional and contemporary design. Casement windows are typical of the Tudor, Arts and Crafts, Art Deco styles. These windows are hinged on one side and may swing out or in. They can be arranged as a single window or paired and the frames may be wood or metal (rolled steel). Metal casement windows can be made more energy efficient by caulking around the masonry openings, adding weather stripping and installing storm windows (interior and/or exterior).

- A, B Streamlined casement windows were popular in the 1930s and 40s for Art Deco and Art Moderne architecture.
- C Traditional casement designs were often used in the 1920s and 30s for cottage and Tudor style residences.
- D Central fixed casement with transoms on apartment building in Denver, CO.
- E Brass casement, hinged so that it swings in.

Resources (click title for link):

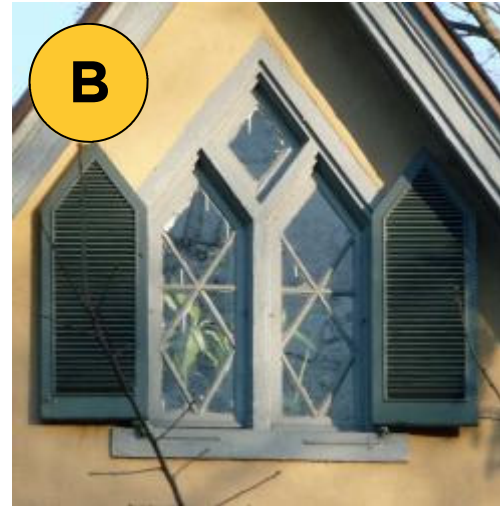
- The Repair and Thermal Upgrading of Historic Steel Windows. National Park Service. Sharon C. Park, AIA.
- Steel Casement Window Repairs. City of Phoenix, AZ.
- Metal Windows. Building Conservation Directory. Peter Clement

Streamlined Art Moderne house with metal casement windows South Bend, Indiana



Adrian Scott Fine/NTHP

Gothic



Gothic

Commonly pointed, may be paired or have additional windows flanking the center window. Windows may be angular or feature a lancet arch — a tall narrow window with pointed arch at the top, shaped often like a spear. An architectural motif found often on religious structures, placed singularly or in pairs. Appears in early Gothic period of architecture and later Gothic Revival style of nineteenth century. Features detailing and elements also often referred to Carpenter Gothic residential architecture. Found often in picturesque rural settings.

- A Paired windows with lattice-style fenestration and drip mold, designed to protect the window from water — directing it out and away from the sash.
- B In this example, note how the functional shutters are designed to match the profiles of the primary sash.
- C The use of scroll saw allowed the application of elaborate wood moldings, in this case, over leaded-glass.
- D Paired one over one double-hung sash Gothic window.
- E Singular two over two double-hung sash Gothic window.

Resources (click title for link):

- [Guide to the Alexander Jackson Davis Papers.](#)
- [Lyndhurst, America's preeminent example of residential Gothic Revival architecture, Tarrytown, NY.](#)

**Gothic Revival house with paired lancet arched windows
Windsor, Vermont**

Adrian Scott Fine/NTHP



Leaded and Stained Glass



Leaded and Stained Glass

Although colored or beveled glass is often referred to as leaded and/or stained glass, there are varieties and different types despite the interchangeable use of terminology. This highly decorative glass can be colored, painted, enameled or tinted and held together by lead, copper or zinc comes. Residential architecture of all styles often incorporates this form of window.

- A Detail of shoe from window in the Shoe House in York, PA.
- B Round arched double-hung sash window with elaborate design.
- C Transom with leaded and stained glass on Brooklyn, NY, row house.
- D The richness of detail is visible in this window.
- E Oval-shaped fixed stained glass window.

Resources (click title for link):

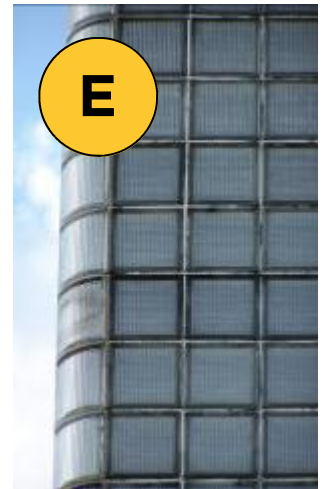
- Conservation and Restoration of Stained Glass — An Owner's Guide. Virginia Raguin.
- Scientific Examinations of Historical Stained Glass. Manfred Torge, Wolfgang Muller and Karin Adam.
- Stained-Glass Protection: Ventilation Specifications for Protective Glazing. Ron Bovard.
- The Preservation and Repair of Historic Stained and Leaded Glass. National Park Service. Neal A. Vogel and Rolf Achilles.

**Tudor Revival house with projecting, leaded-glass bay window
Philadelphia, Pennsylvania**

Adrian Scott Fine/NTHP



Modern



Modern

Like earlier architectural styles, windows are important in helping to define modern, mid-century house types, from ranch houses to split levels. The sizes, types, arrangements and materials of windows during this period were largely experimental and often mass produced. Oversized plate-glass fixed windows, clerestory and the 'picture window' are some of the innovations. Modern windows can be made more energy efficient by caulking around the masonry openings, adding weather stripping and installing storm windows (interior and/or exterior).

- A Irregular and oversized fixed plate glass windows.
- B Picture window with fixed plate glass at center and operable jalousie windows flanking at each end.
- C Distinctive stained glass wall on ranch house in Savannah, GA.
- D Angular clerestory windows.
- E Curved glass blocks.

Resources (click title for link):

- Atomic Ranch magazine
- Historic Preservation Guidelines for Village Grove 1-6 Historic District. City of Scottsdale, AZ.
- Little Boxes. North Carolina Signature
- Retro Renaissance. Alaska Airlines Magazine.

Ranch style house with large steel-framed picture window
Dallas, Texas

Adrian Scott Fine/NTHP





Oriel

These projecting bay windows, usually on an upper story, do not extend to the ground. They originally developed as a form of porch, popular in Gothic Revival style buildings. Typically its walls are supported by a corbelled or bracketed base.

- A Oriel with three brackets on brick Queen Anne residence.
- B Metal-sided oriel with curved glass sash and leaded glass transoms.
- C Two-sided oriel on Queen Anne style residence in Sacramento, CA.
- D Oriel with copper base at gable of Queen Anne style residence in Harrisburg, PA.
- E Queen Anne residence in Wilmington, DE, with wood-frame oriel.

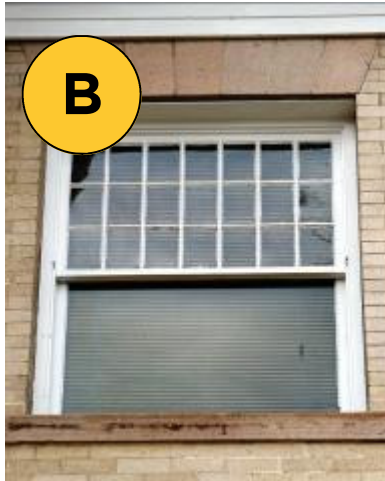
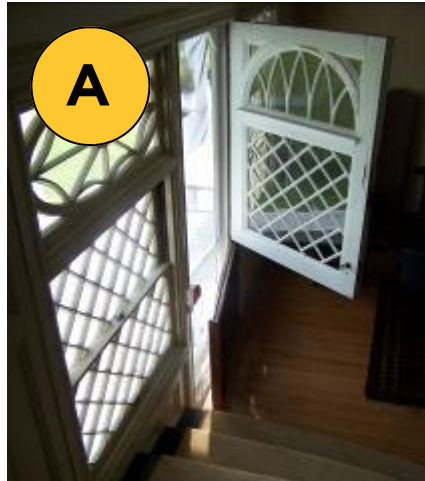
Resources (click title for link):

- Oriel Windows: A Pattern Book for Newquay.

Tudor Revival house with leaded glass oriel window over entrance Drexel Hill, Pennsylvania



Patterned



Patterned

The Arts and Crafts, Prairie and Queen Anne architectural styles often feature windows with very distinctive and unique patterns. These are usually casements or double-hung wood sash windows. Sometimes the upper sash will be divided into multiple panes of glass with a lower sash as a single piece of glass. Usually these are in the form of grids or diamond/lattice style patterns. Often the window surrounds and casings will be very wide, and grouped as ribbon windows, especially with the Arts and Crafts and Prairie styles.

- A Lattice patterned sidelights and Dutch door.
- B Twenty-one-over-one Craftsman style double-hung sash.
- C Pair of twelve-over-two, wood casement windows on 1930s residence in New Orleans, LA.
- D Diamond patterned double-hung sash window and fixed transom.
- E Six-over-one double-hung sash windows with wide surround.
- F Fixed center window and two casement windows.

Resources (click title for link):

- [Craftsman Style Guide, City of Glendale, CA.](#)

Queen Anne house with diamond pattern upper sash windows
Seattle, Washington



Queen Anne



Queen Anne

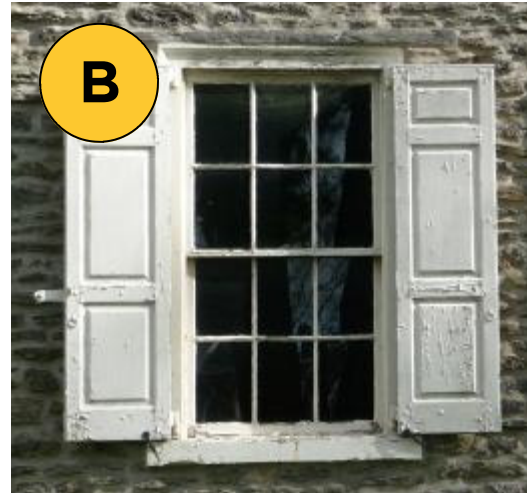
These windows vary widely, but larger square or diamond panes of glass surrounded by small glass squares were popular. Generally, windows are double-hung sash with wood frames. The small squares were often stained glass, using textured glass or bevel-cut panes. Like their windows, the Queen Anne architectural style is elaborate, often with excessive detailing.

- A Diamond detail of one-over-one double-hung sash window on San Francisco, CA, residence.
- B Round arched Queen Anne style upper sash windows and transom.
- C Multi-colored stained glass and elongated diamond pattern characterize these windows on a bay in Chicago, IL.
- D Arched Queen Anne double-hung sash window with fixed semi-circular windows at gable of house in Gettysburg, PA.
- E Queen Anne double-hung sash window on row house.

Victorian era house with a variety of Queen Anne windows types Milford, Delaware



Single, Double and Triple-Hung Sash



Single-hung sash, Double-hung sash and Triple-hung sash

In single-hung windows, only the bottom sash moves. In double-hung windows, which evolved from the single hung sash, both the top and bottom sash are moveable. In triple-hung windows, each sash may move or the center may be fixed.

- A Two-over-two. Each sash has two panes of glass. These windows became popular as glass-making technology improved, making individual pieces of glass larger and more affordable.
- B Six-over-six. Multi-light windows are named according to how many panes of glass are in each sash. Other common arrangements are nine-over-twelve, and nine-over-six.
- C One-over-One. Each sash has just one pane of glass. The windows in this example have arched upper sash. One-over-one windows became increasingly common after the last quarter of the nineteenth century.
- D Six-over-six, triple-hung sash. Unique design that offers good floor to ceiling ventilation. This example features decorative stained glass motif in upper sash.

Resources (click title for link):

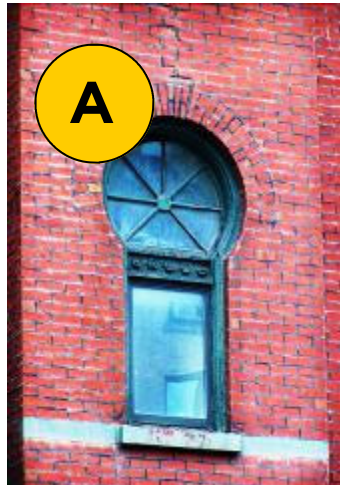
- [How to Restore Sash Windows](#). Old House Journal.
- [Restoring Window Sashes](#). Fine Homebuilding. David Gibney.
- [Sash Windows](#). Winchester City Council.

Queen Anne cottage with one-over-one double-hung sash windows Indianapolis, Indiana



Adrian Scott Fine/NTHP

Additional Window Types



Additional Window Types

Most residential architecture is vernacular, incorporating a variety of architectural styles and features, including window types. Some of these are based on historical precedents, such as the Palladian window, named for 16th century architect, Andrea Palladio. Others are often a combination of traditional and modern interpretations.

- A Keyhole window with fixed pin-wheel upper sash.
- B Bevel-cut glass window with floral detail
- C Semicircular fanlight window, located above doorways.
- D Modern interpretation of sidelights with glass block on house in Portland, OR.
- E Aluminum picture window with casements on Lustron house.
- F Palladian style window on residence in Harrisburg, PA.

Resources (click title for link):

- [Andrea Palladio 1508-1580. Italian Heritage & Culture Committee of New York, Inc.](#)
- [The Lustron Home](#)

Adrian Scott Fine/NTHP



The National Trust for Historic Preservation (www.PreservationNation.org) is a non-profit membership organization bringing people together to protect, enhance and enjoy the places that matter to them. By saving the places where great moments from history—and the important moments of everyday life—took place, the National Trust for Historic Preservation helps revitalize neighborhoods and communities, spark economic development and promote environmental sustainability. With headquarters in Washington, DC, nine regional and field offices, 29 historic sites, and partner organizations in all 50 states, the National Trust for Historic Preservation provides leadership, education, advocacy and resources to a national network of people, organizations and local communities committed to saving places, connecting us to our history and collectively shaping the future of America's stories.

1785 Massachusetts Avenue, NW
Washington, DC 20036

www.PreservationNation.org/Weatherization

Window Types — Residential Field Guide

**Romanesque Revival house with leaded and curved glass windows
Denver, Colorado**



Adrian Scott Fine/NTHP