

Residential Window Replacement Design Guidelines



**City of Glendale
Community Development Department
Planning Division**

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Introduction

Property owners in the City of Glendale are required to get a permit to replace one or more windows on a building. As part of the permit process, the Planning Department staff reviews all window replacement proposals to ensure that new windows will not have a negative effect on the appearance of buildings, streets, and neighborhoods. This is part of the City's overall design review process as established in the Zoning Code, which is conducted before Building & Safety permits are issued.

Windows are an important part of a building's design and appearance. The design review for windows applies only to openings that are visible from the street, usually just the front of the building and the visible parts of the sides. Window replacements that are not visible still require a building permit, but design review can be waived by staff.

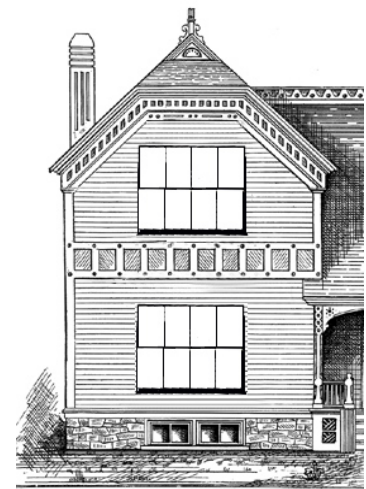
Because there are many variations in both existing conditions and the range of new windows on the market, the Planning Department has prepared the Residential Window Replacement Guidelines (the "Guidelines") that will help applicants determine which windows might be appropriate for their property. The goal of the Guidelines is to allow owners to replace existing windows with new windows while making sure that their design is appropriate with the building. These guidelines were approved by City Council in March, 2015.

The Glendale Building & Safety Division administers state requirements that most new windows meet minimum energy efficiency requirements - call (818) 548-3200 for more information. In addition, the Glendale Water & Power Department offers property owners rebates for installing energy-efficient windows that meet certain established energy standards. The federal government also may offer tax credits for energy efficient windows. The City of Glendale encourages the use of energy efficient windows. However, please be aware that many windows on the market do not meet the standards required to take advantage of these rebates.

If a window replacement proposal meets the Guidelines, Planning staff will be able to exempt the project from review by the Design Review Board once the applicant submits all required materials. If an owner wants to install windows at visible parts of the building that do not meet the Guidelines, he or she must apply for a public Design Review Board hearing – staff cannot approve windows that do not meet the Guidelines. Note: These guidelines do not apply to properties on the Glendale Register of Historic Resources or within a designated historic district.



Preserving character



Reducing character

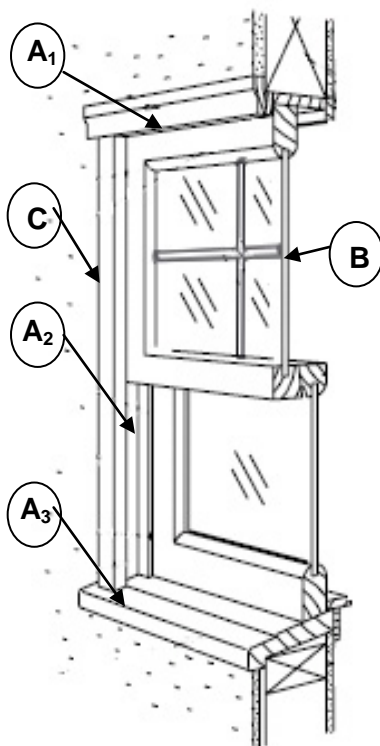
How to Use the Guidelines

The Residential Window Replacement Guidelines (Guidelines) contain information to help you:

- Identify the type or types of windows on your building
- Determine what type of window and installation method is appropriate for your property
- Tell you what materials we need to process your application

These Guidelines are intended to provide guidance and predictability to our customers for window replacement projects. While no guide can take into account all possible variations in buildings, window types and materials, the Guidelines illuminate basic principles when replacing windows in existing buildings.

Windows have several design qualities that combine together to create their overall appearance. Use the following information to identify the qualities of your existing windows. Planning staff is available to help if you have trouble identifying your windows' qualities.



Basic window components

- A** **Frame:** The portions of the window that are built into the wall, consisting of the sill, jambs, and head.
- A₁** **Head:** The part of the frame running along the top of the opening.
- A₂** **Jamb:** A window's Jamb refers to the multiple vertical segments that make up the sides of the frame itself.
- A₃** **Sill:** The bottom part of the frame under the window. It has a slight slope and projects forward from the wall to shed rainwater.
- B** **Grid:** The thin horizontal and/or vertical wood pieces that divide individual panes of glass. Also known as "muntins"
- C** **Trim:** A mullion is a structural element which divides adjacent window units.

Identifying Appropriate Replacement Windows

Window Placement

Most of the existing single-family homes and apartment buildings in Glendale that were built through the mid-1950s have windows that are recessed – not flush with the exterior wall (top image). Windows in buildings of this period were usually wood, but steel windows were also used.

Beginning later in the 1950s and continuing through today, homes and apartments were often built with flush windows. Flush windows are aligned with the exterior surface of the wall (bottom image). These windows were typically made of aluminum. Both flush and recessed window placement can still be found on buildings built after the 1950s.

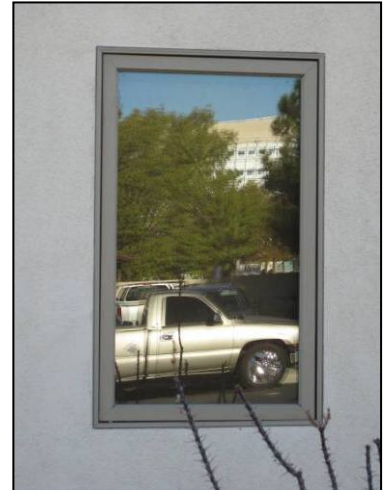
Recessed windows generally are set in a wood frame that is part of the wall. The bottom part of this frame is called the *sill*, which projects an inch or more from the face of the wall and is sloped for water runoff. Ideally, when the window is removed, the wood frame is left behind. It is important to keep this frame for new recessed installations. In some case where the frame was previously removed, it may need to be rebuilt.

Flush windows do not have a wood frame or sill. The building finish stucco or decorative siding, comes up to the edge of the window. Very little of the window frame can be seen because most of it is embedded in the wall.

The Guidelines call for new replacement windows to be set in the wall in the manner appropriate to the building's age and its original window placement.



Recessed



Flush

Identifying Appropriate Replacement Windows

Window Opening Configuration



New vinyl windows set between existing wood mullions



Not this: mullions were removed and flush window was installed instead of recessed



Corner window

Window openings come in a variety of shapes and sizes. Larger windows are often in living and dining rooms, while bedrooms, bathrooms, and kitchens spaces may have smaller openings.

Proportion: Traditional double-hung window openings are typically taller than they are wide, while sliding windows are often in wider, horizontally-oriented openings. Large picture windows and smaller windows with round or other non-square geometrical shapes are often key architectural elements and are considered to be “Special Design” windows (see pp. 10).

Arrangement: Sometimes, windows are grouped together in pairs or threes, with thick vertical wood dividers separating the individual window units. Paired windows are usually the same size, while three-part (also known as “tripartite”) windows generally have a larger central window, often fixed, flanked by to operable windows.

Mullions: The vertical wood dividers are called “mullions” and they should be kept in place whenever possible or replaced if they are deteriorated. In cases in which it appears that original mullions have been removed, they may need to be replaced in order to receive approval.

Corner Windows: Some window openings actually wrap around corners of a building’s façade. These openings usually contain steel windows with a combination of casement and fixed panels. There is generally a structural steel post at the corner, which should be kept in place. Most replacement alternatives that alter these openings significantly must be approved by the Design Review Board. See p. 14 for more information.

Identifying Appropriate Replacement Windows

Window Material

Replacement windows come in a variety of materials. Because different windows have different appearances, all applications are reviewed on a case-by-case basis to make sure the proposed window is appropriate for areas visible from the street. Though all of the materials listed here can be approved, other aspects may not meet the intent of the Guidelines. This is especially true of vinyl windows, which have a “plastic” appearance that is not always appropriate.

Please note that some manufacturers offer vinyl and fiberglass products that are called “wood clad”. This cladding is a thin layer of wood on the interior surface of the window. Our review includes only the exterior face of windows, approval is only for the appropriateness of the window as viewed from the street.

Wood: Most traditional windows are made of wood and new wood replacement windows are still available today. Wood is an excellent, long-lasting window material that can be very energy efficient when double-paned glass units are used. Existing wood windows can also be restored and weather-stripped, making them both energy efficient and less expensive than replacement windows.

Aluminum-Clad Wood / Vinyl-Clad Wood: Because these windows have similar construction and dimensions to wood windows, they are often a good replacement choice. The body of the window is wood and the exterior face is clad with aluminum, which comes in many pre-finished colors but can also be painted, allowing a building’s color scheme to change in the future. The vinyl cladding comes in several colors, but the variety is not as great as for aluminum and it cannot be painted in the future.

Fiberglass: Fiberglass windows can come close to the appearance of wood windows. The structural elements of fiberglass windows are sometimes thinner than other window materials, making them a good choice for replacing steel or aluminum windows. They come in a number of colors but can also be painted.

Aluminum: Aluminum windows are an excellent choice for replacing a variety of window materials. They come in a variety of pre-finished colors but can also be painted in the future.

Steel: Though steel windows are found in many Glendale buildings, the cost of replacing them with new steel windows is often prohibitive. Existing steel windows can be restored and weather-stripped to save energy and avoid the expense of replacement.

Vinyl: Vinyl windows for replacement projects are the most challenging to approve due to the substantially different appearance compared with the existing windows being replaced. Vinyl windows come in very limited colors - white and beige - and are not paintable. Vinyl windows are generally discouraged. However, vinyl may be used in certain circumstances, such as when a vinyl window is installed within an existing wood frame or a nail-in frame is proposed for replacing an existing window with a nail-in frame.

Identifying Appropriate Replacement Windows

Window Operation

Most traditional windows in buildings built before the 1960s are either double-hung, casement, or fixed. Sliding windows, usually made of aluminum, became popular in the 1960s and are still installed today. In general, sliding windows are not appropriate for any property with recessed windows. In some cases, sliding windows can be acceptable for replacing casement windows.



Double-hung/Single-hung: These two window types look exactly the same. In a double-hung, both the upper and lower portion can slide up and down. In a single-hung, only the lower portion moves. Usually these windows should be replaced by similar windows, but staff may be able to approve casement windows in some situations.



Casement: A casement window has hinges on the side and opens like a door, either toward the outside or into the room. In some cases, a pair of casement windows will fill one opening. The windows are opened with a crank. Casements should be replaced with new casements when possible, but staff can approve double- or single-hung windows in most situations.



Fixed: A fixed window has one or more panes of glass set in an unmovable frame. Many buildings have large fixed picture windows, but smaller fixed windows are also found on many property types. Large picture windows are sometimes considered “Special Design” windows and should be generally be repaired instead of replaced. In some cases, smaller fixed windows may be replaced with a different operation type.



Slider: Sliding windows move from side to side. Sliding windows are appropriate for replacing existing sliders, but not for replacing other operation types at front facades. Sliders may be acceptable at side facades which are somewhat visible from the street.

Identifying Appropriate Replacement Windows

Window Grids (a/k/a muntins)

Many traditional wood windows have wood dividers that separate smaller panes of glass inside a larger window. These “grids,” also called muntins, can be an important part of a window’s design. Traditional grids are found on windows with a single pane of glass and run from the exterior of the window to the interior. Grids create a visual pattern, provide texture and can play a big part in a building’s architectural character.

True Divided Light Windows: Windows with grids that separate the window into separate panes of glass are called “true divided-light” windows.

Internal Grid Windows: Some insulated windows have an “internal grid” where the grid is sandwiched between the two pieces of glass. These windows do not match the look of a true-divided light window and can diminish the appearance of a building. Internal grids can never be approved for windows visible from the street.

Simulated Divided-Light Windows: Window manufactures have addressed this problem by making windows that have external grids. Usually there is also a grid on the inside face of the window along with a “spacer bar” between the panes of glass. These are called “simulated divided-light” (SDL) windows and can generally be approved when the existing window has a similar grid pattern. The desired appearance can also be achieved with grids being applied only to the exterior face of glass, but this can be unsightly when viewed from inside.

Special Design Windows: In some cases, owners replacing windows with existing grids prefer to have no grid at all. This may be an acceptable solution and staff may approve such a proposal if the window is not a “Special Design” window and the placement and material of the proposed window is appropriate.

Example of “Special Design” window with elaborate grid pattern that is hard to replace



External grids add texture and detail to windows



Internal grid does not recall appearance of true divided-light window



Identifying Appropriate Replacement Windows

Window Edge / Trim Detail



Flat wood window trim is a typical feature of many wood-clad buildings

Some window openings have detailing around their edges that adds to the character of the property's architectural design. All traditional window openings originally had a projecting sill at the bottom edge of the window. In general, the edge/trim detailing is found around the sides (jamb) and top (head) of the opening and refers to the treatment of the wall surface and detail.

Some openings have a rounded stucco edge that is called a "bullnose." The bullnose gives the opening a sculpted quality and should be retained (or rebuilt) during the installation of new windows. Some windows can also have a very deep recess, with stucco at all sides, including the sills. Both of these conditions should be maintained when replacing windows.

Other window openings may have a wood trim at the face of the wall surface around the window. The trim can have a simple, flat profile or a more complicated "shaped" profile. This trim, can be found on both older and newer buildings. In both cases, it is often a significant design feature that should be retained.



Deep recess with beveled sides and stucco sill

Some contemporary structures have flush-mounted (nail-in) window frames with wood trim outlining the entire perimeter. Matching this condition is appropriate for these properties, but generally cannot be approved for structures with traditional recessed windows at which the sills should be retained. Many flush windows have no trim at all and it is appropriate to retain this condition.



Stucco bullnose at top and sides of opening

Identifying Appropriate Replacement Windows

Window Replacement Frame

New replacement windows generally come with their own built-in frame. This can get confusing because your existing window probably has a wood or metal frame that's built into the wall.

Replacement windows have three types of frames:

- Block
- Nail-in ("new construction")
- Z-bar ("retrofit")

The Guidelines call for:

- Replacement of recessed windows with block frames

and

- Replacement of appropriate flush windows with nail-in frames.

Z-bar frames generally cannot be approved for windows at the front façade, and often not at visible side facades, because the wide trim or flange at their edges is usually detrimental to a building's overall appearance. Z-bar at some side facades may be acceptable, particularly those with plain stucco surfaces and existing nail-in windows. Z-bar frames can sometimes be modified by cutting down the wide flange in a way that allows them to be set inside a window opening, recalling the appearance of recessed windows. This solution may also be appropriate for certain steel window replacement proposals.

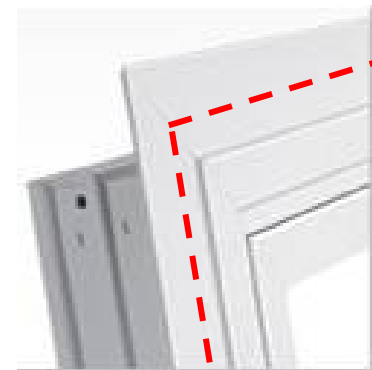
If you want to replace wood windows with new wood windows, there are companies that can make new windows with dual-pane insulated glass that will fit inside your existing frame.



Block frame



Nail-in Frame



Z-bar Frame

Dashed line indicates possible cut location to allow for installation inside window opening

Identifying Appropriate Replacement Windows

Special Design Windows



Some windows have a special quality that makes them a very important component of a building's design. In some cases, they may even be an enhancement to the entire neighborhood. These windows' quality may relate to their construction technique, use of materials, or artistic design. Because they tend to be unique, it is difficult to find modern off-the-shelf windows to replace them.

Examples of Special Design windows include, but are not limited to:



- Leaded-glass windows
- Stained-glass window
- Large, single pane picture windows
 - Multi-pane wood windows with elaborate muntin patterns (grids). Please note that common grid patterns such as "six-over-six" are not included in this category.
- Round, hexagonal, octagonal, or other non-rectangular "accent" windows



Staff will work with applicants who request to replace a Special Design window to find solutions that will not diminish the character of the property. This may include repair and retrofit options or in-kind replacement, using materials that can match the original appearance.

If a property owner chooses to pursue removing a Special Design window and the proposal does not meet the guidelines above, approval from the Design Review Board must be obtained.

Window Replacement Examples

To follow are examples of some typical window installations. These are just a few examples. As there are a wide variety of conditions, review of replacement windows is handled on a case-by-case basis.

Window Replacement Example

Installation in Existing Wood-Framed Opening

This example applies to window openings that traditionally contained recessed windows. Almost all buildings built before the 1960s fall into this category, though many later buildings do as well.

Placement: Keep existing wood frame and sill (repair or replace as necessary); new window to be recessed in existing frame.

Opening Configuration Maintain and repair mullions, when present, to maintain window groupings.

Material: Wood, aluminum-clad wood, aluminum, and fiberglass are acceptable materials; vinyl is generally discouraged, but may be acceptable if all other Guideline criteria are met.

Operation: Single-/double-hung or casement acceptable. Sliding windows generally not acceptable at front façade; may be acceptable at side facades. To be reviewed on a case-by-case basis.

Grid: External grid based on precedent of architectural style or windows with no grid. Internal grids are not permitted.

Edge Detail / Trim: Retain existing decorative wood trim, rounded stucco edge (bullnose), or other decorative trim condition, when present.

Replacement Frame: Block-frame window installed within opening; in some cases, modified Z-bar cut to fit within the existing opening may be acceptable (generally not allowed: nail-in or unmodified Z-bar).



THIS



NOT THIS

Window Replacement Example

Installation in Altered Opening



THIS

This example applies to openings that were previously altered from their original appearance. Generally, these openings once contained recessed windows with wood frames and sills that have been removed. Often flush-mounted windows were installed in place of the appropriate traditional windows. At street-facing windows, and possibly at some side windows, new sills and frames will need to be installed to allow for the installation of new recessed windows.

Placement: Configure front façade openings to allow for recessed window (typically by installing new frame and sill); new window to be recessed in opening. In some cases, certain visible side façade window openings may require the same treatment.

Opening Configuration: When original condition appears to have included grouped windows, install new mullions at front façade openings to allow for grouping. In some cases, certain visible side façade window openings may require the same treatment.

Material: Wood, aluminum-clad wood, vinyl-clad wood, aluminum, and fiberglass are acceptable materials; vinyl is generally discouraged, but may be acceptable if all other Guideline criteria are met.

Operation: Double-/single-hung is almost always appropriate. Casement windows may be appropriate depending upon the existing window and proportion of the opening. Sliding windows are typically not appropriate.

Grid: External muntin grid based on precedent of architectural style or no grid. Internal grids are not permitted.

Edge Detail / Trim: If original edge detail is altered or missing, reintroduce appropriate stucco or trim detail at front façade windows. In some cases, certain visible side façade window openings may require the same treatment.

Replacement Frame: Block-frame window installed within opening; in some cases, modified Z-bar cut to fit within opening may be acceptable (generally not allowed: nail-in or unmodified Z-bar)



NOT THIS

Window Replacement Example

Installation in Unaltered Flush-Mounted Opening

This example applies to openings that originally contained flush-mounted windows. In most cases, these are sliding aluminum windows that were installed in buildings built in the 1960s or after. Replacing these with new flush-mounted sliding windows is almost always appropriate, though the frames of new windows tend to be heavier looking than the original ones. Installing new nail-in window frames will require the removal of some stucco from around the existing windows, which will need to be patched to match the surrounding stucco.

Placement: Keep existing flush-mounted appearance.

Opening Configuration: Flush-mounted windows are almost always found in individual openings. The placement of the fixed and sliding portions of the new windows should either match the existing condition or create a sense of balance with the other windows on the façade.

Material: Aluminum and fiberglass are acceptable materials. Vinyl is also acceptable if all other Guideline criteria are met.

Operation: Sliding or casement acceptable. Single-/double-hung may be acceptable but must be reviewed on a case-by-case basis.

Grid: External muntin grid based on precedent of architectural style or no grid. Internal grids (only) are not permitted.

Edge Detail / Trim: Retain existing trim detail, when present. If stucco wall surface is clad with siding or other decorative material, maintain appearance of existing cladding.

Replacement Frame: Nail-in frame installed within existing opening. Z-bar frames are generally not allowed at front facades, but may be acceptable for side façade without any architectural detailing or ornamentation. Block frames are not designed to function in flush-mounted opening.



THIS



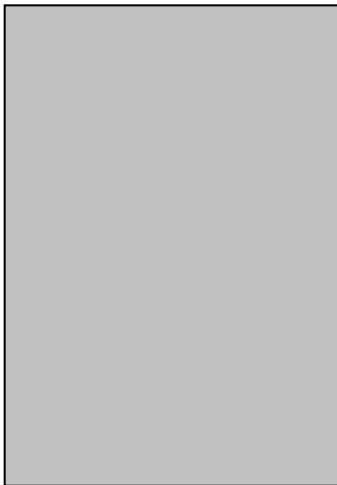
NOT THIS

Window Replacement Example

Replacement of Steel Casement Windows



THIS



NOT THIS

Steel windows lend a property a special character that is difficult to duplicate with any non-steel window replacements on the market today. For this reason, owners are encouraged to repair, retrofit, and weather-strip their steel windows, which can be a very cost-effective alternative. If replacement is still desired, there is a limited range of options available for approval.

Placement: Keep existing recess, which is typically rather shallow.

Opening Configuration: Steel windows are often found in wide openings containing a mixture of operable and fixed window elements. The placement and size of the fixed and moving portions of the new windows should either match the existing condition or create a sense of balance with the other windows on the façade.

Material: Aluminum, fiberglass, and vinyl are acceptable materials. If vinyl is chosen, it must closely match the existing appearance and meet all other Guideline criteria.

Operation: Casement windows are preferred to match the original condition, but sliding windows may be acceptable.

Grid: External muntin grid to match existing grid is preferred, but no grid may be acceptable. In some cases, the horizontal lines established by the grid become an important design feature. In these cases, an external grid may be required. Internal grids are not permitted.

Edge Detail / Trim: Retain existing decorative wood trim, rounded stucco edge (bullnose), or other decorative trim condition, when present.

Replacement Frame: Modified Z-bar cut to fit within opening is often a good solution - the applicant must provide manufacturer documentation that alterations will not void the window warranty. Nail-in frame may be acceptable at visible side facades. Block frames are not designed for this type of installation (not allowed: unmodified Z-bar)

Corner Detail: When corner-wrapping windows are present, the replacement windows at the front and all visible facades must match existing corner window detailing as closely as possible. The sense of transparency at the corner must be retained.

Violations

The owner of any property with windows installed without a permit is subject to a violation issued by the Glendale Neighborhood Services Division. Violations can be given at any time non-permitted work is discovered by inspectors – even if a previous owner did the work. Owners who do not take care of violations will be taken to court by the City and are also subject to fines.

Current owners with violations must obtain a permit for the illegal work in order to remove the violation. This process is called “legalization.” The owner must file an application for the existing installation as if it were not in place yet. Planning and Building & Safety staff review the application, leading to the following possible outcomes:

- 1) Windows are approved as installed
- 2) Windows must be modified in conformance with the Guidelines
- 3) Windows must be replaced in conformance with the Guidelines
- 3) Owner chooses to apply for a public hearing before the Design Review Board