Replacement Windows and Doors

Objective

Doors and windows should be sensitively replaced, in keeping with the character of the original building, the quality of its design and in an environmental sustainable way. The character of listed buildings and conservation areas should be protected and enhanced.

This guidance applies to development throughout Edinburgh. The table below summarises thresholds. More detailed guidance on the circumstances in which policies apply is provided in the following sections.

Policy Context

Edinburgh City Local Plan policy Env 2 requires that proposals do not diminish the interest of listed buildings and policy Env 6 requires that development preserves or enhances the special character or appearance of conservation areas.

Scope of the Guidance

These supplementary guidelines apply throughout the city to listed buildings and conservation areas.

Statutory Requirements

Planning Permission and Listed Building Consent

- Repairs to match the original do not require planning permission or listed building consent.
- Double glazing in listed buildings will require listed building consent.
- The removal or replacement of windows and doors in listed buildings require listed building consent.
- Alterations to windows such as the changes to astragals, and alterations to doors on listed buildings normally require listed building consent.
- Window replacement on unlisted buildings in conservation areas usually requires planning permission, as do alterations such as converting a window to French Windows.
- Door alterations to unlisted buildings in conservation areas may require planning permission.

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- Window and door alterations on listed buildings usually require planning permission as well as listed building consent.
- Planning permission is required for replacement where the new window or door is materially different (A material change is when there is an alteration to the design, material, size, opening mechanism, or proportions).
- Secondary glazing may require listed building consent.

Planning permission will not normally be required in the following cases:

- The replacement of doors and windows on a like-for-like basis.
- In unlisted buildings, if the proposals comply with this guidance.
- In properties which are not in a conservation area.

No window replacement should take place without formal approval or a Certificate of Lawfulness.

Policy Guidance

Windows

1. Listed Buildings

There is a general presumption against the removal of original windows frames and glazing. The repair and rehabilitation of original windows is preferred in terms of sustainability and the protection of historic character.

Refurbishment

- The performance standard of existing windows can be improved by repair, draught-stripping and working internal shutters. Further guidance on these methods is contained in Appendix 1.

Upgrading

- Slim profile double glazed timber windows with cavities of a maximum of 6mm can be fitted into existing window frames and are normally considered acceptable for use on listed buildings. Listed building consent will be required for slim profile glazing. Secondary glazing also provides thermal efficiency improvements

Replacement

- The complete replacement of original windows will only be approved where they have clearly deteriorated beyond practical repair. Proposals to remove original windows, must be accompanied by evidence demonstrating that they are beyond repair (a professional survey may be requested).
- In the event that new windows can be justified, these should be designed to replicate the originals in materials, design and opening method. Replacement timber windows

incorporating slim cavity (maximum 6mm) double glazing may be considered acceptable for use on listed buildings. Listed building consent will be required for slim cavity glazing.

- uPVC windows will not be acceptable.

General

- Double glazing, with a cavity depth of more than 6mm, is not acceptable on listed buildings.
- Where a significant proportion of historic glass remains on an individual window, it should be retained or re-used. Double glazing may not be acceptable in cases where historic glass exists (examples of historic glass are detailed in Appendix 1).

2. Unlisted Buildings in Conservation Areas

Replacement windows on all elevations of unlisted properties in conservation areas should match original proportions, appearance, materials, and opening method. Appropriate timber sealed unit double glazing will normally be considered acceptable. uPVC windows will not be acceptable.

3. Recent Development in Conservation Areas

Replacement windows in recent developments in conservation areas should maintain the uniformity of original window design and material and should open in a manner that does not disrupt the elevation. Where the building is of a traditional design, consideration should be given to the use of windows that reflect this character.

4. Best Practice Guidelines (applicable in all cases)

- **Astragals (Glazing Bars)**

  The original proportions and glazing pattern of traditional sash and case windows should always be respected. Where there is either clear photographic or physical evidence that astragals have been removed their replacement to the original profile and dimensions will be encouraged. The glazing pattern of windows which form part of a significant later re-modelling scheme should not be changed. Astragals which, are stuck onto the surface of the glass or sandwiched between the glass of doubled glazed units are not considered acceptable. Where the original glazing, usually crown glass, survives every effort should be made to retain and repair the window.

- **Mullions**

  The original proportions of window openings should normally be retained: otherwise the architectural integrity of the building will be severely compromised. Proposals to increase the glazing area by removing stone or timber mullions which, form the divisions in bipartite or tripartite windows, will not normally be granted consent.

- **Horns**

  Horns, which are a projection of the side frames of the sashes, are a Victorian invention devised to strengthen the sashes following the removal of astragals and the introduction of single, large sheets of cast glass. Georgian and early Victorian windows with astragals never have horns, and these will be strongly resisted. Edwardian windows sometimes had horns and therefore their use is appropriate.

- **Painting**

  Decay in timber windows is usually caused by moisture penetration, which can be prevented by thorough painting, regular maintenance and prompt attention to necessary repairs. Originally, most windows were probably painted dark brown or bottle green. However, window joinery should normally be painted white or off-white for visual uniformity (white paint also reduces thermal movement most effectively).

- **Ventilators**

  Ventilators cut through the glass or visible on the window frames will not be considered acceptable. Ventilators, where required, should be located unobtrusively in the meeting rail.

5. Special Cases

- **Institutional/Industrial buildings**

  Industrial and institutional buildings exhibit a considerable variety of window types, depending on their age and function. A greater degree of flexibility on window design may be acceptable with buildings of this type and may be required to allow conversion to new uses. However, the original window type should be retained wherever practicable: where this is not possible the glazing pattern should be reproduced and the manner of opening should be as close to the original as possible. Standard double glazing may be acceptable in conversions of these buildings, provided discrepancies in the form, profile, section, materials and opening method are kept to a minimum.

- **Early Modern Metal Windows**

  Distinctive early modern metal framed windows, which make a significant contribution to the architectural character of a building, should normally be repaired or replaced with matching windows of the same materials and design. New units manufactured from different materials will very rarely be capable of matching in all respects the units to be replaced. They will, therefore, only be acceptable where exact replication of the original window is of less importance. In such cases any discrepancy in form, profile, section and opening method should be kept to a minimum.

- **Casement Windows**

  Original inward opening casement windows are occasionally found in late Georgian and early Victorian buildings. They are relatively rare and therefore their retention or identical replacement should be a condition of consent.

- **Special Types of Glass**

  Stained or decorative leaded glass and etched glass is often an original feature of historic buildings. There will be a presumption in favour of its retention in both listed buildings and unlisted buildings in conservation areas. If the glass has to be removed and is of artistic merit, arrangements should be made for its recording and its careful removal will be a condition of consent. Proposals to use wired glass, obscured glass, louvered glass or extract fans in windows on main elevations will not be considered acceptable.

Doors

6. Guidance for External Doors – listed buildings and conservation areas

- Original doors in historic buildings should be retained and repaired wherever possible. Repair is almost always a less expensive alternative to replacement and represents the historic and architecturally correct solution. Only where repair is not feasible, eg where advanced decay is evident, will replacement be considered, and then only if the replacement matches the original in every respect. This will normally involve the construction of doors with recessed panels, as detailed in Appendix 2.
- Doors in non-traditional materials such as uPVC will not be considered acceptable.
- The original proportions of door openings on street frontages must always be retained. If they are changed the architectural integrity of the building will be severely compromised.
- Doors in street frontages, even though no longer used, should be retained, as buildings with no obvious means of access invariably look inappropriate.
- Whenever the opportunity arises, any modern doors that are badly proportioned, or of the wrong type should be replaced with a door of the original proportion and detail.
- Where the original door or framing has been lost, efforts should always be made to achieve a replacement, which is appropriate to the property and correctly located in relation to the face of the building. This is especially important in the case of unified terraces.
- Decorative fanlights should be retained and repaired where necessary.

- Replacement doors, which incorporate integral fanlights, or inappropriate glazing or panelling patterns, will not be granted consent.
- Doors should be retained in their original position within the door opening.
- Original door furniture and later fittings of quality should be retained. Where these do not survive, the replacement of modern fittings with items appropriate to the period of the building will be encouraged. Neighbouring properties of similar date and style will often provide a guide.
- Door entry systems should be discreetly designed and should be located on door ingoes, not the main façade.
- Doors should be painted in an appropriate dark and muted colour.
- Proposals to convert windows into door openings will not be considered acceptable on principal frontages or above garden level on all other elevations. Where acceptable, the width of the existing opening should not be increased.
- French Windows when fitted should conform to an appropriate design in relation to the proportions of the opening. Normally only one set of French Windows will be permitted.

7. Internal Doors – Listed Buildings only

- New internal doors should match the original form and should not incorporate features such as glazed panels.
- Doors that form part of the architectural composition of a room or plan form should be retained. In cases where they are redundant in terms of circulation, they should be locked shut and left in position rather than being removed.
- New doors and door surrounds opening into main circulation areas and principal apartments must match exactly the original items.

8. Fire Resistance – Internal doors – Listed Buildings only

- Care should be taken if traditional panelled doors require to be upgraded for fire resistance. This can be achieved without altering the character of the door by the use of fire resistant paper applied to the panelling or finishing with intumescent paint and edge strips. Door closers should be hidden.

Reasoned Justification

Original doors and windows are an important feature in the elevation of any building and their replacement with different designs can seriously affect the historic and architectural character of the building. The retention of original features is becoming increasingly popular. Original features in properties are often considered as a rare advantage, such as having the original sash and case windows.

When subtle features are lost by substitution, and the use of standardised unsympathetic elements, the visual harmony and character of streets can be diminished. There may also be a reduction in the value of what is no longer an original 'period' building. The design standards of modern uPVC, metal systems and standardised timber doors and windows, fail to match the detailing of original doors and windows. The repair or re-use of original features such as doors and windows is in most cases the most economically viable solution and is preferred in terms of sustainability. The use of new materials from a renewable source, such as timber, is recommended if replacement can be justified. Rehabilitation and regular maintenance are also good sustainable practices, protect historical character and are more cost-effective in the long term then wholesale replacement. Replacement of original features should only be considered if repair is found to be unviable.

The damage that may be caused by the replacement of any door or window that is historically and architecturally correct, with a modern unit made from a different material, to a different design, or in the case of a window has a different method of opening, is potentially immense. The impact of such inappropriate alterations may, in the case of a building within a conservation area, be felt well beyond the building itself.

Historical Background

Windows

The sash window, traditionally used throughout Edinburgh, consists of a pair of glazed sashes, which slide, vertically in a case or frame. A pair of weights, contained within the case, balance each sash to which they are attached by cords or chains passed over pulleys fixed to the case, allowing both sashes to be opened for ventilation at any height. The window cases are wedged in position behind the ashlar stonework and pointed up with mastic.

The first recorded use of the timber sash and case window was at the Royal Palace of Whitehall in the 1670s and its introduction to Scotland is likely to date from 1690 when it was used at the Palace of Holyrood. The sash and case window was rapidly accepted as superior to the previously prevalent hinged metal casements in terms of improved maintenance and light. The design of the sash and case window also related well to the classically derived architectural aesthetics of the period with its emphasis on regularity, symmetry and proportion.

Whilst the opening mechanism of the sash and case window hardly changed from its introduction in the late 17th century, the physical appearance of the sash window changed considerably during its three centuries of development. The limitation on the size of panes of crown glass which could be manufactured resulted in the earliest types of sash having glazing bars two or more inches thick and sashes containing numerous small panes of glass. The craftsmanship improved rapidly and as aesthetic values changed, astragals became finer and the 'six over six' sash became standard. From around 1845, plate glass began to become available and sashes with larger panes of glass and fewer glazing bars were adopted. Relatively expensive at first, plate glass was often reserved for principal rooms:

astragalled windows, making use of cheaper, smaller panes of crown glass, will often be found at this period in service areas and to the rear of buildings. By the 1880s, plate glass in a single sheet was the norm. In late Victorian and Edwardian buildings it was common for windows to incorporate a large single pane lower sash and a smaller astragalled upper sash.

Significant amounts of early crown glass survive in Edinburgh, particularly in parts of the New Town. The slight imperfections of the convex panes give depth and interesting reflections to a facade. This, combined with the visual rhythm of the astragals, creates an essential characteristic of Georgian Edinburgh.

The design and detailing of traditional windows is a product of the craftsmanship, manufacturing ingenuity and social changes of the past. Glazing bar patterns reflect contemporary fashion, the building's social hierarchy, the way property was taxed and how the latest craft advances were incorporated.

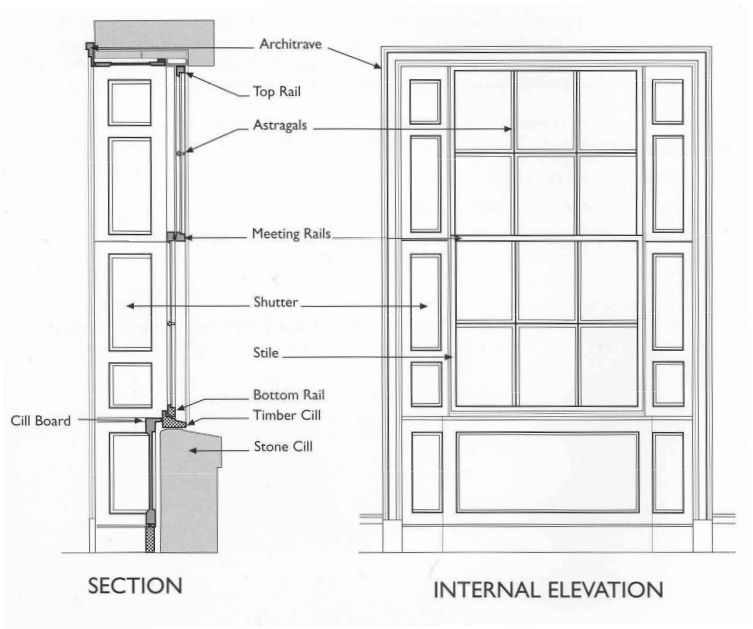
Despite the diversity of styles in which buildings of the 19th century were designed, the sash window continued to be the most common type of window and it remained in widespread use well into the 20th century. Many sash windows over one hundred and fifty years old survive in working order.

Doors

Simple planked doors, similar in style to that of a modern garden shed, were used for the main entrances of houses from the Middle Ages, and continued to be norm until the late 17th century. The panelled door, consisting of a framework holding a varied number of panels, was developed in the mid seventeenth century and became the standard design for all houses of quality throughout the eighteenth and nineteenth centuries. Panelled doors vary significantly in their proportions and types of moulding used.

APPENDIX 1

Windows



Window Glass

The most common types of early glass are:

- Cylinder Glass. A handmade mouth-blown glass made by blowing a bottle-shaped cylinder and removing the two ends.
- Crown Glass. A handmade mouth-blown and spun glass, made by first blowing a sphere which is then opened out at one end and spun into a flat disc. Several panes of crown glass may be cut out of each disc. It is distinguished by its curvilinear, naturally distorted form.
- Drawn Sheet Glass. First produced in the early 20th century, this machine-made glass was drawn vertically out of a glass furnace in sheet form between rollers. It is recognisable by its consistent thickness and flatness with some shimmer in the glass. Modern drawn sheet is usually used for greenhouses trade and is sometimes used in an attempt to replicate handmade glass.
- Polished Plate Glass. A type of hand-blown glass. It is produced by casting glass onto a table and then subsequently grinding and polishing the glass.

The old glass has a greater richness and sparkle than today's flat sheets with their uniform reflections. Where it survives, every effort should be made to retain it.

Repair and Replacement

Replacement timber windows, where these are necessary, should exactly match the original in terms of material, size, sections, proportions and glazing pattern, paying particular

attention to the mouldings. There is a wide variation in mouldings and standard modern sections are not acceptable for reinstatement work. Salvaged crown glass should be re-used where possible.

Care should be taken to ensure that replacement windows, are fitted in the same plane as the originals, are made up of timber sections the profile and dimensions of which match the originals, and have the meetings rails in the same position as the originals: this is especially important where the windows of only one property in a tenement or terrace block are being replaced.

Any modern windows which are badly proportioned, or of the wrong type or incorrectly glazed should be reinstated to the original proportion and detail when alterations are being carried out.

Draught Stripping and Performance Standards

If original timber windows are in reasonable condition, a basic overhaul, together with draught proofing or secondary glazing, is a cost effective option. The majority of sash and case windows have stood the test of time remarkably well, and there are no inherent defects in the traditional construction which regular maintenance cannot cure.

One of the most cost-effective and least intrusive methods of achieving improved performance from single glazed windows is by installing draught proofing. This can considerably reduce heating bills and energy use, especially if combined with other measures. It also assists in reducing noise and dust ingress. Most importantly, in historic building terms, draught proofing does not adversely affect the appearance of old windows.

Several forms of draught proofing are available, each of which operates differently. Repair and upgrading is normally much more cost effective than costly wholesale replacement.

Secondary Glazing

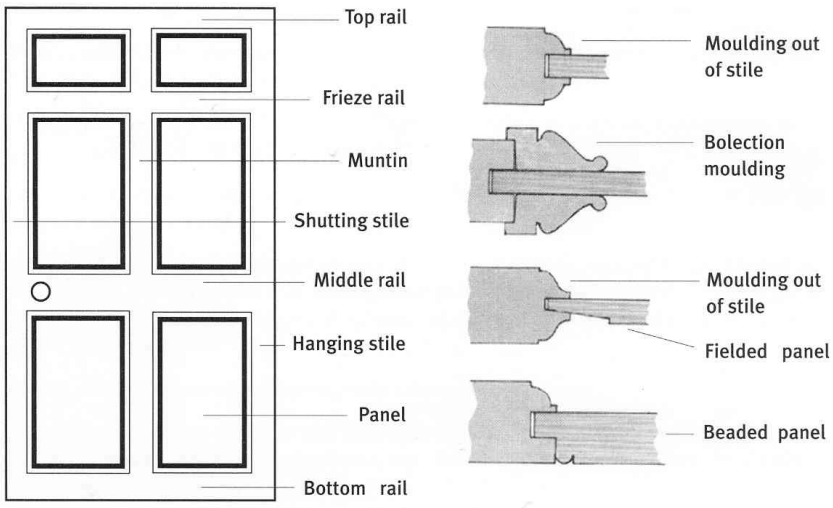
Secondary glazing involves the provision of an independent internal window in addition to the existing (or renewed) traditional sash and case window. Additional glazing units fitted to the outside of existing windows are not acceptable. If shutters are present careful consideration needs to be given to the design and detailing of secondary glazing.

Secondary glazing should, wherever possible, be fitted immediately inside existing sashes or at a suitable position within the depth of the window reveal, being fixed either to the case or the surrounding framework of the ingoes. Secondary glazing should not disrupt original architectural features, such as shutters.

The meeting rails and frames of secondary windows should be as small in section as possible to allow them to be disguised behind existing rails. Painting their external faces black helps to minimise visibility from the outside. Where necessary, detailing of internal secondary windows must allow for the use of Simplex hinges on the lower sash of the original outer window.

APPENDIX 2

Doors



GLOSSARY

Astragal	wooden glazing bar.
Cavity	separation between the two sheets of glass in a double glazed sealed unit.
Horn	Projection of side frames and sashes.
Mullion	vertical member between the glazing areas in a domestic window opening.
Simplex Hinges	these are fitted to the interior of the window case, allowing the lower sash to be swung inwards for easy cleaning.
Six over Six	traditional glazing pattern in which each sash is divided by astragals into six smaller panes.
Slim Cavity	Double glazing with a separation between the two sheets of glass of less than 6mm. This type of double glazing can be fitted into existing window frames without a significant affect on the appearance of the window.

References

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- Looking After Your Sash and Case Windows: A Short Guide for Homeowners, Historic Scotland.
- Building Regulations and Historic Buildings, English Heritage.
- The Historical and Technical Development of the Sash and Case Window in Scotland, Historic Scotland, 2001.
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