Maintenance Matters!
Historic buildings

Window Glass

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Welsh Assembly Government

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Handmade crown and cylinder, or 'muff', glass includes imperfections that catch the light and distort reflections. This quality adds considerably to the character and charm of historic buildings. By contrast, modern plate and float glass has a perfectly smooth finish that appears dull and lifeless, making it unsuitable for use in historic buildings.

Crown glass was used exclusively up until the mid-nineteenth century. It was produced by blowing a bubble of molten glass, which was then attached to a solid metal rod, called a 'pontil.' The glass was reheated and spun to form a disk of glass up to 5 feet (1.5m) wide. After cooling, the glass was cut to size and the 'bulls eye' where the glass was attached to the pontil was either thrown back into the furnace or sold cheaply for use on poorer quality buildings or on the rear elevation of buildings where it would not be seen.

Crown glass is extremely thin and delicate, so take care not to damage it when repairing or redecorating windows. It is not currently being manufactured, although it may be possible to source second-hand crown glass from an architectural salvage yard. New cylinder glass can be used as substitute, although it lacks the curved ridges, varying thickness and subtle colour variations that are so characteristic of crown glass. Horticultural glass is sometimes used as a cheaper alternative, but the result is not usually as satisfactory.

Cylinder glass was used as an alternative to crown glass from the mid-nineteenth century onwards. It is produced by blowing a cylinder-shaped bubble of glass, which can be up to 5 feet (1.5m) long and 12 inches (305mm) wide. The ends are removed, and the cylinder cut lengthways and opened out to produce a flat sheet of glass.

This new method of glass production had a major impact on the design of Victorian windows as panes could be much larger, overcoming the need for glazing bars. However, in sash windows, the glazing bars help to keep the sashes rigid and stable. To help compensate for their loss, 'horns' were often added to larger-paned sash windows as an extension of the

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side rails. These are generally found only on the lower corners of the top sash where they most needed.

Conversely, many small-paned Georgian windows have had some or all of their glazing bars removed and larger panes of glass fitted, either to reflect changing fashions or as an alternative to replacing decayed timber. However, scars are often left behind in the window frame that will help to reveal the original design.

Old glass should always be retained if possible. Take care when removing old putty from window frames as it will have dried out, becoming extremely hard. To avoid damaging the glass, soften the putty using a solvent paint stripper before attempting to remove it. When windows are completely beyond repair and replacement is absolutely essential, save as much of the old glass as possible for reuse in the new frames.