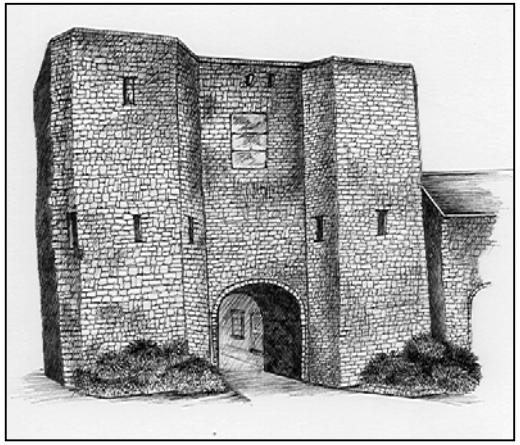
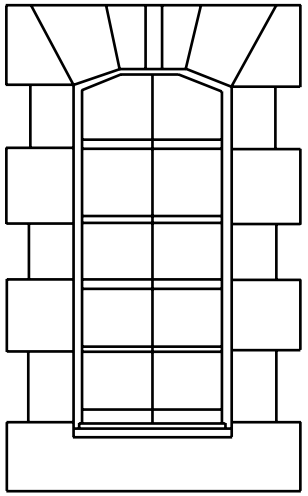


We endeavour to make our services accessible to everyone. The text of this leaflet can be made available in a variety of formats including audio tape and large print. For further information contact the Press and Communications office on 01665 511205

ALNWICK DISTRICT COUNCIL



Alnwick District Council

Design Guidance

January 2007

The Georgian Group

6 FitzroyTelephone:
London
W1P 6DN
Telephone: 020 7387 1720

The Victorian Society

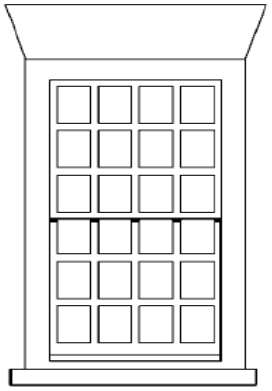
1 Priory Gardens
Bedford Park
London
W4 1TT
Telephone: 020 8994 1019

The Twentieth Century Society

70 Cowcross Street
London
EC1M 6EJ
Telephone: 020 7250 3857

A guide to historic timber windows and their maintenance

Windows are an essential part of a building's history and architecture. They demonstrate the changing architectural tastes and styles, social hierarchy, craft ingenuity, technical advances, and the ways in which houses and certain building materials were taxed. They are the single element which most serves to establish the character of a building.



Typical Georgian Sash

Crude and unsympathetic mass-produced windows in wood, metal and plastic, are being widely substituted for original windows, often with disastrous results.

The aim of this guide is to explain why it is important to conserve historic windows, and to provide guidance for their maintenance. It is recognised that in some cases replacement of historic windows will be unavoidable, and guidelines are given to ensure that replacements maintain the character and appearance of the building.

This guide has been prepared in consultation with interested parties and the wider community with the aim of preserving and enhancing listed buildings. It is the intention to republish the guidance as a supplementary planning document as part of the council's Local Development Framework in due course

Historic interest

The most common historic window within the district is the 'double hung' sliding sash window, with both upper and lower sashes hung on cords and counterbalanced with hidden weights. The double-hung sash window system has remained unchanged for over 250 years. The casement window is a common variation as is the Yorkshire sliding sash that slides horizontally.

Glass

The size of window pane (and therefore the overall appearance of the window) was influenced by fashion and by the limitations of glass production and cost. The mid 18th century introduction of excise duty on glass by weight favoured the crown process, which allowed the thinnest panes of glass to be produced, albeit of a very limited maximum size.

Crown glass was made by blowing a bubble of glass, opening one end, and gradually widening it out until a flat disc (known as the 'crown') was formed. Small panes could then be cut from the crown.

The central remnant of the crown was known as the bull's eye, and was used only in the least important windows.

With the removal of excise duties in 1845, cylinder glass gradually superseded the use of crown glass. Cylinder glass was made by swinging a freshly blown glass bubble so that it elongated by centrifugal force. Both ends of the cylinder were then cut off to form a tube which was then split from end to end

Further Information and Contacts

English Heritage

Grants may be available from English Heritage, but these are generally only for Grade I or Grade II* listed buildings. Strict criteria will be applied, and there may be conditions regarding public access to the building.

English Heritage
Bessie Surtees House,
41-44 Sandhill,
Newcastle upon Tyne,
NE1 3JF
Tel: 0191 261 1585.

The following national bodies are also a good source of information, and frequently publish helpful design and/or technical guides:

Society for the Protection of Ancient Monuments

37 Spital Square
London
E1 6DY
Telephone: 020 7377 1644
E-mail: info@spab.org.uk
Internet: www.spab.org.uk

Historic Buildings Grant:

Alnwick District Council currently runs a Historic Buildings Grant to assist with repairs and/or restoration works to listed buildings or significant unlisted buildings within conservation areas. Eligible works include repairs and refurbishments to existing windows of historic interest, or the reinstatement of windows on a like for like basis. The maximum grant is 50% of eligible works up to the value of £3,000. As the budget is very limited, applications must be prioritised, and so it is not possible to guarantee that eligible works will receive a grant.
Grant forms and guidance are downloadable from the council's website, or available by post.

Alnwick District Council
Planning and Building Control Unit
Allerburn House
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Northumberland
NE66 1YY

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Website: www.alnwick.gov.uk

and opened out to form a flat, square sheet. Much larger panes could then be made, hence the transition to the Victorian pattern of four-paned or two-paned windows.
The inherent irregularities in hand-made crown and cylinder glass contribute much to the liveliness and character of historic buildings. By contrast, sheet and float glass (both 20th century developments) produce a much more dull and uniform appearance.

Historic glass should be retained wherever possible. Crown glass is thin easily broken and irreplaceable. Replacement glass should be carefully chosen to simulate the effect of the original glass, but material that is over-distorted should be avoided. In sash windows, replacement glass should be of a thickness and weight to ensure that the sash is correctly counterbalanced by its weights. Obtaining suitable glass for historic buildings is not a difficult process.

Glazing bars

Gothic

Early casement and sash windows had numerous and thick glazing bars. On the inside they were moulded to deflect light and reduce glare. On the outside they were grooved to take the glass pane, which was held in place by putty.

Square Ovolo

Over the years the cross-sectional area of glazing bars gradually reduced, eventually reaching a point in the late 18th century and early 19th century when the width was as little as 13mm and was often made of hardwood or even metal. At the same time, the size of the panes increased considerably. The

Lamb's Tongue

Astragal and Hollow

return to small panes at the end of the 19th century was to some degree a reaction to the vast sheets of plate glass being used in shop fronts.

Maintenance and repairs

Complete replacement of timber windows is seldom necessary. Decay usually starts at the bottom and works upwards, and so the lower components often need replacement and repair long before the upper parts. Indeed, complete replacement may be counterproductive, as some replacement windows inserted in the last thirty years have now decayed due to the inferior quality of some modern timber, whereas many windows from the 18th century and earlier still survive. Timber windows require regular maintenance to keep them in working order. Sticking sashes in unused buildings will often contract slightly and work loose once heat and ventilation are reintroduced. The breakdown of paint or putty should be dealt with promptly as this may lead to decay of the timber underneath.

Window Decay

Dealing with decay

A detailed inspection of windows should be carried out regularly, probing vulnerable areas with a sharp instrument for signs of decay. This will usually take the form of wet rot, which is recognisable by slight ripples and discoloration of the paintwork. The underlying timber becomes soft, breaking up when probed. Wet rot affects both softwoods and hardwoods, and occurs where:

- Water is allowed to stand on horizontal planes, such as sills.

uPVC as a building material. There are growing concerns regarding the possible health and safety implications surrounding the use of uPVC in buildings. They have been found to contain potentially dangerous toxins, for example, dioxin, which acts both as a carcinogen and a hormone disrupter. The release of poisonous toxins would be particularly dangerous in the event of a fire. It must also be remembered that plastic windows will melt in a fire, potentially cutting off a means of escape. In addition, plastic windows have very high energy requirements in production, and are difficult to recycle. The disposal of uPVC, particularly by incineration, may have long term environmental implications.

The record of the Planning Inspectorate in upholding at appeal, the action of local authorities in resisting the use of plastic windows in listed buildings is generally good. The repair and/or restoration of existing timber windows is encouraged in unlisted buildings as the more environmentally friendly option.

Replacing historic windows in listed buildings

Where buildings are listed, the penalties for altering windows without listed building consent can include enforcement and/or criminal prosecution. Proposals for window alteration or replacement in listed buildings form by far the largest category of applications for consent . Listed Building Consent will normally only be granted to replace historic windows where the existing items are beyond repair. Where this is the case, replacement must be carried out on a strictly like for like basis, with the emphasis on historic accuracy. It is best to seek advice from our Development Department before carrying out such works.

The use of uPVC windows in listed buildings

Unplasticised polyvinyl chloride (uPVC) was invented in 1977, and its use is unacceptable in any listed building that pre-dates this time. uPVC is a modern, mass-produced material that in no way compares with the quality of a hand-crafted historic timber window. Such replacements are usually little more than crude replicas of authentic features. For example, where false 'glazing bars' are incorporated, they are merely thin strips of plastic inserted within the glass sandwich of a double glazed unit (or stuck onto the outer frame) which bear little resemblance to the real thing. uPVC windows generally have thick, ungainly frames, and a very flat, blank appearance that is entirely inappropriate in a historic façade.

It is worth considering the wider issues surrounding the use of

- At the joints, and where the paintwork has cracked.
- Moisture is attracted by capillary action and becomes trapped, between a timber sill and the masonry below.
- Adjoining masonry is damp for long periods.
- Condensation persistently forms on the inside face of the glass, especially in bathrooms and unheated rooms.

Repairing decayed timber

Small areas of decay can be scraped out and the remaining sound timber treated with a suitable preservative; when this has dried out the decayed area can be primed and built up with a filler. Larger voids which are not too near a joint can be partially spliced in with new timber, followed by filler at the edges. It is always important to locate and eliminate sources of moisture, and promote rapid drying of the affected area. New timber should be preservative-treated, and remaining old timber may be treated if it is likely to be at further risk.

Sash cords

Sash cords should be given attention at the same time as any extensive repairs and replaced if necessary. If a considerable amount of glass has been replaced it may be necessary to adjust the weights. Traditionally, the combined downward pull of the weights serving the top sash should be slightly more than the sash itself, including glass, so that it has a tendency to close easily. The weights serving the lower sash should be slightly lighter than the sash itself for the same reason.

Repair suggestions

- Repair wherever possible, rather than replace.
- Don't alter window openings in proportion or detail as they help to establish character.
- Retain and reuse all historic details, including old glass, window fittings and ironwork (such as balconies and balustrades), mullions and other features from the window and its surround.
- Replace damaged or missing pieces with accurate modern reproductions or reclaimed originals that match those that have survived.
- Paint windows rather than stain them, as stains were not used historically.
- Consider installing modern weather-stripping seals.
- Use heavy curtains and internal shutters, (where appropriate) to reduce heat loss.
- Consider the installation of a lightweight secondary glazing system where the configuration of the window assembly permits (although this method may not be as satisfactory as weather-stripping).

When replacement is unavoidable

There will be cases where windows are so badly decayed or damaged that replacement becomes inevitable. If a building is not listed, no permission is required to replace windows. Owners of unlisted historic buildings, however, are encouraged to replace windows on a like for like basis. Although double-glazing is popular and provides some benefit in terms of energy conservation, it is a poor substitute for an authentic single-glazed sash and case window. English Heritage has shown that it can take many years before the cost of double–glazing can be recouped in terms of savings on bills. Weather-stripping single-glazed windows, on the other hand, is much more economical.

In aesthetic terms, it is virtually impossible to replicate the fine details and dimensions of a typical historic window when using double-glazed units. Although fake glazing bars are incorporated in some types of double-glazing, they cannot match the delicately moulded glazing bars that are characteristic of Georgian or Victorian windows. The glass used also has an entirely different visual character from historic glass, as discussed above. The end result is a window that may look superficially similar, but has very little historic accuracy.

Unacceptable Replacement Windows

Replacement suggestions

- Retain the original depth of 'reveal'.
- Incorporate glazing bars of the appropriate thickness and profile, which will usually be that of the glazing bars being replaced.
- Install sash and case windows with weights and pulleys, as opposed to inappropriate spring balances.
- Ensure that the opening method and mechanism matches that of the original window.
- Do not assume that building regulations require the use of double-glazing – this is not the case, and the character of a historic building will be compromised by the use of double-glazing.