



Argyll and Bute Planning Service
**Rothesay
Windows**
Technical note
2015

Argyll and Bute Council
Comhairle Earra-Ghàidheal agus Bhòid
www.argyll-bute.gov.uk



Rothesay Windows Technical Note

Introduction & Background

Rothesay Conservation Area is one of Scotland's most extensive, stretching five miles along the east coast of the Isle of Bute from Port Bannatyne to Ascog. The area has a distinctive character with its own special architectural form and historic interest. The Conservation Area is made up of 9 distinct character areas, contains a significant number of Listed Buildings and hundreds of windows in both residential and commercial properties all of which contribute to the overall appearance and sense of place.

Windows Policy Statement 1995

Since the Rothesay Window Policy Statement was adopted in 1995 there have been changes to Local and National Policy albeit, the general principles about replacement windows in Conservation Areas and Listed Buildings have remained fairly consistent over this time. There have also been advancements in restoration / refurbishment techniques, energy efficiency technology and new window products have come onto the market in the past 20 years that now influence replacement options.



Investment

Since 2008 there has also been significant assessment of Rothesay's historic environment in the form of a Conservation Area Character Appraisal (CACA) as well as notable investment through the Townscape Heritage Initiative (THI) and Conservation Area Regeneration Scheme (CARS) whereby around £4 million has been committed to heritage led regeneration projects.



Aims and related advice

This Technical Working note aims to provide clear and consistent planning advice in relation to the replacement and refurbishment of windows in the Rothesay Conservation Area.

This Guidance must be read in conjunction with the Development Plan, Rothesay Window Advice Note 1 and 2, the Councils Historic Environment Strategy 2015 and Scottish Historic Environment Policy – Managing Change (see Section 4 – Existing Policy, for more information).

Contents

- INTRODUCTION & BACKGROUND 1
 - WINDOWS POLICY STATEMENT 1995 1
 - INVESTMENT..... 1
 - AIMS AND RELATED ADVICE..... 1
- 1 - THE REQUIREMENT FOR CONSENT 3
- 2 - THE IMPORTANCE OF WINDOWS..... 3
- 3 - INVESTING IN THE ROTHESAY CONSERVATION AREA..... 4
- 4 - EXISTING POLICY 5
 - NATIONAL POLICY 5
 - LOCAL POLICY 6
- 5 - ROTHESAY WINDOWS – TECHNICAL STATEMENTS 7
 - STATEMENT 1 – PREFERENCE FOR RETENTION, REPAIR AND REFURBISHMENT 8
 - STATEMENT 2 – REPLACE ‘LIKE FOR LIKE’ IN LISTED BUILDINGS AND PRIME TOWNSCAPE BLOCKS 10
 - STATEMENT 3 – FLEXIBILITY FOR UNLISTED BUILDINGS & OTHER TOWNSCAPE BLOCKS 12
 - STATEMENT 4 – REPLACING NON-TRADITIONAL WINDOWS 14
- 6 - ENFORCEMENT 14
- APPENDIX A – PERFORMANCE IMPROVEMENTS 15
- APPENDIX B – PRIME TOWNSCAPE BLOCKS..... 19
- APPENDIX C – COST COMPARISON 22
- ADDITIONAL INFORMATION 23



1 - The requirement for consent

Through the Planning (listed buildings and Conservation Areas) (Scotland) Act 1997 Argyll & Bute Council have a statutory obligation to ensure the preservation and protection of Listed Buildings and Conservation Areas. The designation of a Conservation Area or Listed Building is not intended to prevent change but rather to ensure the special character or appearance of the historic asset is protected or enhanced.

In order to manage change in the Rothesay Conservation Area, **planning consent is required for the replacement of any window in both residential and commercial properties**. Listed buildings will also require Listed Building Consent. The fee currently set for submitting a planning application is £202 per development (could include multiple window replacements).

Consent is not required for the majority of repair / refurbishment works or 'like for like' replacements (please see Statement 1 and 2 below).

Contact the Planning Department for further information before commencing your project.



2 - The importance of windows

Many local streetscapes rely on historic, materials, doors and windows for much of their architectural impact and character.

Windows are an essential element in the external character, appearance and composition of traditional buildings. They are an important element of a building's design and weatherproofing. The size, shape and position of the openings are significant, as are the form and design of the framing and glazing. Their style, detailing and materials help us to understand when a building was constructed or altered, its function and advances in related glazing technology. In simple vernacular buildings a considerable amount of the character comes from the windows.

When replaced unsympathetically the appearance of the building is damaged, and the unity that comes from the repetition of window patterns and traditional materials, particularly in tenements and terraced properties, is diminished. Cumulatively this leads to an erosion of the character of the street and over time the whole area.

Examples of inappropriate doors and windows, whether by design or use of materials, can be found in most conservation areas. Their presence does not mean that they are appropriate or necessarily that a precedent has been set.

3 - Investing in the Rothesay Conservation Area

Rothesay has benefited from being one of only 24 competitively selected Townscape Heritage Initiative (THI) projects in Scotland. A Conservation Area Regeneration Scheme (CARS) has also been delivered.

The THI is a 5-year programme which seeks to revitalise the historic town centre, by offering grants to property owners to assist with structural and external repairs to historic buildings. Individual upgrading projects include the upgrading of Guildford Court Apartments, Duncans Hall, Guildford Square gap site and various shop front improvements.

The aims and objectives of Rothesay THI are linked to those of the Council’s Single Outcome Agreement and Economic Development Action Plan. Rothesay Town Centre and Waterfront is also identified as an ‘Area for Action’ in the Local Development Plan.

It took 3 years to secure the funding for the THI, during this process it was recognised that successful delivery of the THI and its longer term legacy would only be possible by increasing our dedicated approach to the management of unsympathetic alterations through both consent and enforcement processes.

Funders recognised the value of Rothesay’s heritage and supported heritage led regeneration projects to the value of:-

| | |
|-------------------------------|-------------------|
| Heritage Lottery Fund | £1.5 million |
| Argyll and Bute Council | £546,124 |
| Historic Scotland | £499,933 |
| LEADER | £107,839 |
| Private / Owner Contributions | £1.6 million |
| TOTAL | £4 million |

This means that an approximate investment of £4 million has been made in the area between March 2011 and March 2016 principally for heritage led projects. To this extent, it is essential that this Technical Working Note supports conservation principals, protects and promotes improvements in the Conservation Area and underpins the wider heritage led regeneration already commenced by the THI.



4 - Existing Policy

The primary statutory and non-statutory policies and guidance in relation to window replacement are contained within the following documents:-

National Policy

- **Scottish Historic Environment Policy (SHEP)**

<http://www.historic-scotland.gov.uk/shep-dec2011.pdf>

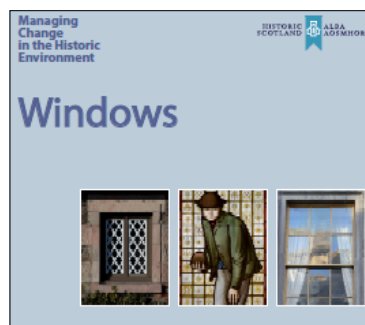
- **Managing Change in the Historic Environment – Windows (October 2010)**

<http://www.historic-scotland.gov.uk/windows.pdf>

- *'In almost all cases, repair of the components on a like-for-like basis is preferable to replacement of a whole unit, as this will best maintain the character and historic fabric of the window'. (Para 4.3)*
- *'Where there is no alternative to the replacement of historic windows or elements of their joinery or glazing, the new elements should match the original. This should include replication of the proportion, opening method, astragal dimensions and profiles, and fixing of glass'. (Para 4.4)*
- *'In exceptional circumstances, such as conversions, there may be grounds for the removal of existing windows and their replacement with new, more thermally efficient ones. Normally this will only be considered where the existing windows are inappropriate or incapable of repair and the new windows can match the design of the historic ones'. (Para 4.6)*

- **Historic Scotland – Sash and Case Windows a homeowners guide**

<http://www.historic-scotland.gov.uk/sash-and-case-windows.pdf>



Local Policy

The following policy is contained within the Proposed Local Development Plan and has been endorsed by the Scottish Government appointed Reporter:-

- **SG LDP ENV 16(a) – Development Impact on Listed Buildings**

Development affecting a listed building or its setting shall preserve the building or its setting, and any features of special architectural or historic interest that it possesses.

- **SG LDP ENV 17 – Development Impact on Conservation Areas**

There is a presumption against development that does not preserve or enhance the character or appearance of an existing or proposed Conservation Area or its setting, or a Special Built Environment Area.

New development within these areas and on sites forming part of their settings must be of the highest quality, respect and enhance the architectural and other special qualities that give rise to their actual or proposed designation and conform to Scottish Historic Environment Policy 2011 and accompanying Managing Change Guidance Notes.

- **The Rothesay Conservation Area Appraisal and Management Plan**

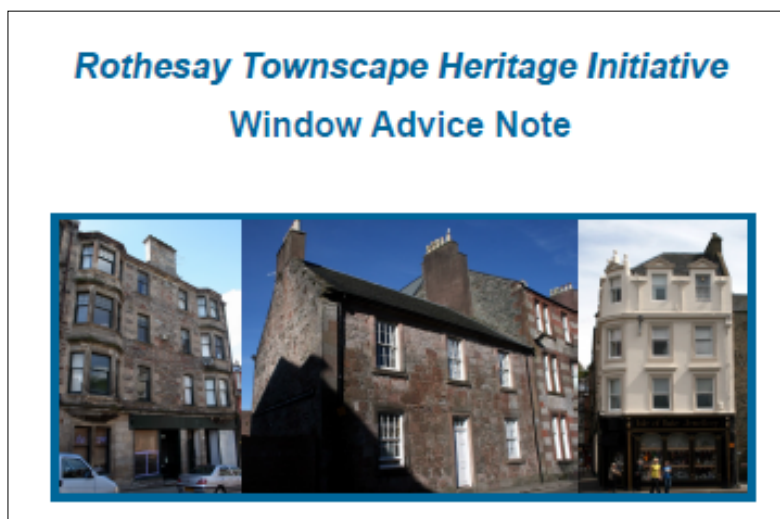
<http://www.argyll-bute.gov.uk/chord/chord-background-reports-rothesay>

- **The Rothesay Windows Advice Note**

<http://www.argyll-bute.gov.uk/sites/default/files/RothesayWindowAdviceNote1.pdf>

<http://www.argyll-bute.gov.uk/sites/default/files/RothesayWindowAdviceNote2.pdf>

- **Argyll and Bute Historic Environment Strategy 2015**



5 - Rothesay Windows – Technical Statements

Similar to the 1995 Rothesay Windows Policy Statement, this new Technical Working Note seeks to add a third and more detailed layer of guidance over and above the established National and Local Policy context as specified in the previous section. It is in recognition that Rothesay is unique as an Argyll and Bute Conservation Area in terms of its Victorian character and of its scale and collection of privately owned residential properties – predominated by tenements, flats and apartments. It is also acknowledged that there have been a number of unfortunate and unsympathetic alterations to buildings that have occurred over the years as a result of permitted development rights, unauthorised works or consents which has negatively affected the historic integrity of a number of buildings and townscape blocks. There is also acceptance that a number of properties have suffered from lack of investment and maintenance meaning some traditional timber windows are now in poor condition or not as thermally efficient as they once were.

This Technical Note seeks to add a degree of pragmatism and flexibility to the specific development pressures in this Conservation Area. This is in light of the considerable loss of traditional windows in some of the townscape blocks, previous rational policy position (outlined in the 1995 Windows Policy Statement) and acknowledging that new windows products are now on the market. It is also accepted that expectations for thermal efficiency, ease of maintenance, security and noise cancelling from windows have increased in line with modern living standards.

It remains the unaltered position of the Council that economic benefits can arise from preserving and enhancing the outstanding built heritage of Rothesay through maintaining and improving the appearance of its historical buildings. Such enhancements and uplift can lead to a more vibrant town centre, improved visitor attractions and outstanding environment beneficial to everyday living.

Above all, this Technical Note aims to build upon the successful heritage led regeneration of the THI by improving the overall management and appearance of windows in the Rothesay Conservation Area. It provides clarity / certainty to owners of buildings in the Conservation Area, guiding them upon what options they have when repairing or replacing their windows. It also has a strong emphasis of improving the current situation (the status quo) and uplifting the appearance of the Conservation Area by seeking that unsympathetic windows are not replaced by similarly poor products.

This Technical Working Note does not replace or supersede the statutory guidance contained within the Development Plan but shall be afforded weighting and be considered as a material planning consideration when assessing new proposals for window refurbishment or replacement.

Statement 1 – Preference for retention, repair and refurbishment

In all circumstances, it is the Councils preferred option that traditional windows are retained, repaired or refurbished over replacement. Timber sash and case windows have a long life if adequately maintained and they can be a sound investment in the overall value of a building as it retains the historical character and design as it was originally intended. Such works do not require planning or listed building consent as long as they are ‘like for like’ repairs (see below definition of ‘like for like’) so there shall be an immediate saving of over £202 in terms of an application fee in comparison to a replacement option.

The Council considers windows of significant heritage value such as cylinder sheet, curved glass, crown and patent plate glass to be of particular importance.

The repair and refurbishment of timber sash and case windows can be carried out by most joiners and supports local skills and employment. The Rothesay THI ran practical courses on traditional skills. The practical sash and case windows repair course was attended by local joiners, who on completion of the course were asked, ‘how will the skills and knowledge you gained be useful within your present job?’ to which they replied: “[the skills] will help produce a better quality finish”, “[I have] more confidence to promote [my] business” and the course will “help widen [the] range of jobs [I am] able to take on”.

The scope and cost of the repair / refurbishment shall be very dependent on the condition of the windows and requirements of the building owner.

There is a misconception that traditional timber sash and case windows are expensive or difficult to maintain and are incapable of meeting modern performance standards in terms of energy efficiency and noise attenuation.

Simple techniques for maintenance such as regular painting (every 5 years) or use of long lasting patent paint can significantly improve the function, life and performance of a traditional window. In addition, a joiner can cost effectively re-hang, draft strip and repair seals on exiting windows to improve acoustic and energy performance. Additional performance improvements can be obtained from the introduction of secondary glazing, installing shutters or heavy weight curtains. More information is contained within **Appendix A – Performance Improvements.**

‘Like for like’ repairs and refurbishment

For the avoidance of doubt, it should be emphasised that ‘like for like’ in this context means the same materials (timber), glazing (single glazed), proportions, thickness, profile, glazing pattern, details of construction, decorative finish and details as the existing. Careful attention needs to be paid to replicating astragals, glazing bars, horns and colour. If any element is not identical then you may require planning or listed building consent. Please contact the planning department before commencing your project.

Summary of Statement 1 – Repair and Refurbish

- **Heritage** – Excellent. Retains the existing character and appearance of the building as intended by original architect.
- **Cost** - Excellent – Refurbishment is regularly cheaper than replacement options. A planning application is not required. Retains local carpentry skills / employment. Cost dependant on extent of overhauling required, shutters, level of draft proofing or installation of secondary glazing.
- **Energy efficiency & noise attenuation** – It is accepted that poorly maintained traditional windows can prove to be thermally inefficient. Draft stripping and the installation of timber shutters, curtains or internal secondary glazing can significantly improve performance.
- **Maintenance** - Simplex hinges are normally fitted (inward swing) and can make maintenance, cleaning and repair quite straightforward. Certain parts of window can also be replaced / painted in isolation as required. Historic Scotland recommends painting ever 5 years.
- **Ease of opening** – The weight of certain traditional sash and case windows may make them difficult for some people to open. Consideration should be given to re-balancing the windows or the installation of a fenestrator.



New timber sash and case windows @ Guildford Square

Statement 2 – Replace ‘like for like’ in listed buildings and prime townscape blocks

Listed Buildings have been designated by Historic Environment Scotland (HES - formally Historic Scotland), on behalf of Scottish Ministers, specifically due to their special interest. They are vitally important to the distinctive character of Rothesay and contribute significantly to the overall heritage appeal of the Conservation Area. Arguably, they are the most important buildings in the context of the Conservation Area.

A survey carried out in 2015 has identified townscape blocks where elevations of prominent buildings have been well maintained and windows / doors remain mostly traditional. These townscape blocks are identified in **Appendix B – Prime Townscape Blocks** and like listed buildings play a pivotal role in creating the unique sense of place and heritage interest in the Conservation Area. These important buildings that have retained their integrity are referred to as ‘Prime Townscape Blocks’.

In Listed Buildings and Prime Townscape Blocks, only refurbishment / repair (Statement 1) or ‘like for like’ timber replacement shall be permitted.

There are currently 199 domestic listed buildings within the conservation area, 148 prime listed buildings and 51 de valued listed buildings along with 3 identified Prime Townscape Blocks, namely:-

1. Town Core;
2. Crichton Road;
3. Castle Street, Port Bannatyne.

Replacement sash and case units are widely available from glaziers, window fitters and joiners and can be a good substitute for traditional windows, especially if the original is incapable of being repaired or refurbished. The new material and seals shall have very good energy efficiency and noise attenuation properties similar to uPVC ones. New modern timber sash and case windows are also likely to be fitted with Simplex hinges or inward opening to allow ease of access for painting and cleaning.

When considering the design of your replacement window its essential to consider the fine detail and characteristics of your existing window to get a ‘like for like’ match. If the same materials (timber), glazing (single glazed), general proportions, glazing pattern, details of construction, decorative finish, thickness of profile and details as the existing are proposed then the Council may consider this as a ‘like for like’ replacement. Most joiners should be able to create a ‘like for like’ replacement timber sash and case units. In these cases neither planning nor listed building consent will be required. A saving of over £202 for submitting a planning application could be achieved over other replacements.

In opting for a ‘like for like’ solution careful attention needs to be paid to replicating astragals, glazing bars, horns and colour. If any element is not identical then you will require planning or listed building consent. We advise that you contact the Planning Department before commencing your project.

In prime Listed Buildings all replacements (frontage and rear) should be sympathetic to the original and traditional windows.

Rear Elevations and De-Valued Listed Buildings

On rear or secondary elevations of some Prime Townscape Blocks additional flexibility may be afforded (similar to approach under Statement 3, below) depending on the availability of public views, contribution to the Conservation Area and integrity.

In exceptional circumstances, where a listed building has been identified as being 'de-valued' (listed on appendix plans) through unsympathetic historic window replacements and alterations a more flexible approach will also be applied. In such cases we will always seek to secure uplift in design and window quality in the first instance. High quality timber dual swing which give the appearance of a sash and case windows in all respects except when open and high quality well-proportioned uPVC sliding sash units which retain the distinct step of sash and case windows are likely to be acceptable. Fixed pane windows should also seek to have a stepped effect but greater flexibility will be afforded as long as the proportions and window pattern are acceptable.

Double glazing

The introduction of double glazing within new timber sash and case windows is likely to be acceptable but will require planning and listed building consent. The inclusion of slim line double glazing is the preferred option and shall significantly increase sound reduction and energy efficiency. Slim line double glazing is filled with a mixture of Krypton and Xenon gases which are heavier gases and offer much better performance than most uPVC windows which are filled with Argon. They usually come with a much longer guarantee than most windows.

Glazing replacement is unlikely to be supported where the glass is original and has heritage value such as curved glass, crown glass, stained glass or other significance.

Regular (ie non- slim line) double glazing may be acceptable however it can present problems with small paned windows as the glazing bars have generally to be deeper and wider than the original patterns to accommodate the sealed glazing units.

It is acknowledged that new or replacement timber sliding sash windows, particularly if double glazed, can be expensive. **See Appendix C – Cost Comparison.**

Summary of Statement 2 – Like for Like replacements

- **Heritage** – Good. Largely retains the existing character and appearance of the building as intended by original architect by using traditional materials and proportions.
- **Cost** - Most expensive option especially if installing slim line double glazing. Retains local carpentry skills / employment. Cost dependant on product chosen. Planning application may not be required (no £202 fee). extent of overhauling required, shutters, level of draft proofing or installation of secondary glazing.
- **Energy efficiency & noise attenuation** – Excellent. New materials and draft proofing mean these will perform as good as most uPVC windows – especially if double glazing installed. shutters, curtains or internal secondary glazing can significantly improve performance.
- **Maintenance** - Simplex hinges are normally fitted (inward swing) and can make maintenance, cleaning and repair quite straightforward.

- **Ease of opening** – The weight of sash and case windows may make them difficult for some people to open. New ones should be balanced properly or consideration should be given installing a fenestrator.

Statement 3 – Flexibility for unlisted buildings & other townscape blocks

Buildings that are not listed or have not been identified as a Prime Townscape Block are still important within the Conservation Area and can contribute effectively to it. **For these buildings it is still recommended that either repair, refurbishment or 'like for like' timber replacement is pursued in the first instance.** However, it is accepted that these buildings have already lost some or all of their original windows or historical fenestration value through inappropriate replacements over the years.

In these circumstances, a number of different units will be permitted including:-

1. **Good quality, well-proportioned white uPVC sliding sash and case;**
2. **White painted timber double swing / tilt & turn with a stepped effect which give the appearance of a sash and case windows in all respects except when open; and**
3. **uPVC fixed pane units (no opening mechanism in accordance with Building Standards) with good proportions and that mimic the stepped effect of sash and case window will also normally be acceptable**



Timber swing windows @ Montague St



uPVC sliding sash Windows @ Crichton Rd



uPVC sliding sash @ Albert Place



Timber double swing windows @ Victoria Road

In all of these situations planning consent will be required (£202 fee) along with suitable drawings and manufacturer specifications. Care should be taken when considering the introduction of new materials and double glazing to ensure that the thickness of the mouldings/ surrounds, proportions, ironmongery and detailing match the original window as closely as possible. This can be particularly difficult to achieve with some low quality or older styles of double glazed uPVC units.

In all instances the general glazing pattern should mirror the existing traditional window unless there are strong reasons for permitting a change e.g. to reinstate some consistency or unity to a building or street frontage where different glazing pattern predominates and where there is no sound reason for maintaining a different pattern. Where glazing bars or astragals are required, these must be carefully designed and detailed to match the original or, where appropriate the predominant window style.

Rear Elevations

On rear elevations additional flexibility may be afforded depending on the availability of public views, contribution to the Conservation Area and overall integrity of the block. Replacements should match the original in terms of general design, but does not necessarily have to replicate a traditional sliding sash and case in terms of opening mechanism or stepped effect. Most white coated modern materials and products are likely to be acceptable if the glazing pattern and proportions are broadly similar to the original or surrounding the windows.

Summary of Statement 3 – Flexible approach for un-listed buildings and other townscape blocks

- **Heritage** – Fair. May include materials or opening mechanism that is not authentic. When windows are closed the appearance of a traditional sash and case will be apparent. Shall only be applied to buildings or elevations of lesser importance in the Conservation Area.
- **Cost** - More expensive than refurbishment / repair but some units likely to cost less than replacement timber sash and case. Price dependant on the style and material of window unit.
- **Energy efficiency & noise attenuation** – New materials and draft proofing mean these will perform very well – especially if double glazing and good quality.
- **Maintenance** - May offer a variety of opening arrangements to clean from inside and unlikely to require surface treatment (painting). uPVC windows usually cannot be repaired – defects will require total new unit.
- **Ease of opening** – May offer a variety of opening arrangements for internal cleaning

Statement 4 – Replacing non-traditional windows

One of the important aims of this Technical Working Note is to uplift the current status quo and reverse the damage caused by some of unsympathetic window replacements that have occurred over the years. The presence of poor quality windows in certain townscape blocks does not mean that they are appropriate or necessarily that a precedent has been set. Whilst 'like for like' replacements do not need consent the Council shall always seek to improve the current arrangements where possible.

In all properties where the original windows have already been replaced or the fenestration has been devalued every effort shall be made to reintroduce new traditional / sympathetic units.

When assessing applications to replace windows that are not original / traditional a sequential approach should be applied:-

1. Re-introduction of timber sliding sash and case units;
2. Installation of better quality windows than currently installed - good quality uPVC sliding sash or timber swing units for example; then
3. Installation of units of any material which retain the distinct step of sash and case windows and which give the appearance of a sash and case windows in all respects except when open.

It is unlikely that windows outside the parameters listed above shall be acceptable unless there is clear benefit or enhancement from what has already been installed.

6 - Enforcement

Replacing windows without obtaining the necessary planning or listed building consents is a serious matter. Argyll and Bute Council has the power to challenge any owner / occupier and require a retrospective application to be submitted or instigate formal enforcement proceedings if the replacements are deemed to be unacceptable. In situations where an amicable solution cannot be reached the Council may pursue the owner / occupier to restore the property to its original state. Alternatively, the Council may undertake the works themselves and then place a charge upon the property. Enforcement action can only be taken within 4 years of the installation or replacement taking place for most buildings however for listed buildings there is no time limit.

Unauthorised and unsympathetic alterations to a Listed Building can be a criminal offence and you may be reported the Procurator Fiscal. Any formal enforcement action may lead to problems in the sale of your property as it shall be recorded as a burden against the address until it is resolved.

Appendix A – Performance Improvements

Maintenance

The poor performance of many traditional timber sash and case windows is caused by substandard maintenance. Decay in sash windows is mainly caused by moisture penetration which can be prevented by through painting. Historic Scotland recommends painting timber sash and case windows every 5 years. Where rot has penetrated a frame it is possible to splice in individual sections to match the originals in all respects. It is recommended all owners of timber sash and case windows read the Rothesay Windows Guide (<http://www.argyll-bute.gov.uk/sites/default/files/RothesayWindowAdviceNote1.pdf>) and Historic Scotland's Guide for Homeowners (<http://www.historic-scotland.gov.uk/sash-and-case-windows.pdf>)

The ease of opening and cleaning of traditional windows can be significantly improved by re-balancing the weights within the existing windows, fitting Simplex hinges (if not already fitted) or Fenestrators and usually be attended to from within the property.

An application to the outer pane of slim profile double glazing is applied to make it self-cleaning. This cannot be removed by water cleaning agents or high pressure equipment and the coating is much more scratch resistant than normal glass. It is water and dust repellent and improves light transmission by around 2%. It also comes with a 10 year guarantee.

<http://www.slimliteglass.co.uk/slimlite-self-cleaning-double-glazed-units.html>

Until 5 years ago there was only 1 supplier making the product but there are now 8 due to the level of demand.

The benefit of timber is that it can be repaired. New sections can be spliced in if they rot, however plastic windows cannot be repaired and need to be completely replaced when they fail.

Please see advice on maintenance at the following:

<http://www.argyll-bute.gov.uk/chord/maintenance-advice>

<http://www.historic-scotland.gov.uk/index/learning/freepublications.htm>

Performance

REPAIR

Draught proofing, repairing seals, and re-hanging can have the following effect:

- Reducing draughts
- Eliminating rattle
- Substantially reducing noise
- Smoother operation

Many traditional timber windows are sound and can be overhauled to retrofit slim profile double glazing and other draughtproofing measures.

<http://www.historic-scotland.gov.uk/technicalpaper1.pdf>

Well-fitted external or internal wooden shutters dramatically decrease heat loss from both draughts and conduction through the window. Conduction losses alone are cut by 60%.

<http://www.english-heritage.org.uk/publications/traditional-windows-care-repair-upgrading/traditional-windows.pdf>

Repairing windows, rather than whole scale replacement is often the most cost effective approach, as well as being the most environmentally friendly and most aesthetically pleasing.

ENERGY

Heat loss is often cited as a factor as to why people want to alter windows.

A window renovation process, which retains much of the existing material, has clear environmental benefits over manufacturing replacement windows, be these wooden or uPVC.

Most heat is lost through gaps in the seal around the glazing and/or the window itself.

The process of renovation, rather than replacement, has the benefit of using 1/40th of the embodied energy of replacement.

Where a window is clearly 'leaky' (with gaps around the frame and rails where sash windows meet) research has shown that repairing and draught proofing it can reduce air infiltration by over 80%. Further benefits can be gained simply by closing curtains, blinds and shutters and these can produce the same heat savings as double glazing. The addition of secondary glazing can also reduce heat loss by nearly 60% (and is also effective in reducing sound transmission).

<http://www.english-heritage.org.uk/publications/traditional-windows-care-repair-upgrading/traditional-windows.pdf>

Secondary glazing, rather than double glazing, actually offers the best U value performance.

The whole-life environmental costs of replacement will be much greater than simply refurbishing. It will take many years before savings on heating offset the large amounts of energy used to make PVC-u windows in the first place.

- 82% of uPVC goes to landfill
- 43% of uPVC is made up of non-renewable resources
- 15% of uPVC is incinerated
- Only 3% of uPVC is recycled

<http://www.english-heritage.org.uk/publications/traditional-windows-care-repair-upgrading/traditional-windows.pdf>

The environmental benefits of window renovation are:

- Uses 1/40th of the energy of replacement
- Material sent to landfill is reduced
- Use of finite resources is minimised
- Invested energy, or carbon store, is retained

ACOUSTIC

Re-hanging and draught proofing original seals around the window will significantly reduce noise levels.

Draught proofing can increase sound protection levels by up to 10 decibels .

The inclusion of double glazing further increases sound reduction.

Many new windows are filled with Argon gas, which is very light and ineffective for sound reduction, however slim profile double glazing is filled with a mixture of Krypton and Xenon gases which are heavier gases and offer much better sound reduction as a result, offering up to 31 decibel noise reduction.

<http://www.slimliteglass.co.uk/sound-reduction-a-u-values.html>

Windows are one of the most vulnerable parts of a building to noise transmission due to their relatively lightweight construction. Depending on the number of openings and the quality of the seals between the openings, a single glazed window without seals may only achieve a noise reduction of 18–25dBA. When closed, sealed double glazed units perform little better than single glazing because the two panes of glass are rigidly connected with a minimal cavity so the two panes resonate together. A secondary window with an air space of 100mm or more de-couples the movement of the two panes of glass and reduces the resonance between the two. Sound insulation of up to 45dBA can typically be achieved. Higher levels of sound insulation are obtained as the gap increases, particularly if the reveals are lined with an acoustic material, though minimal improvements occur with cavities beyond 200mm. The use of thicker or acoustic laminate glass within the secondary window also improves the acoustic performance of the installation.

<http://www.english-heritage.org.uk/publications/traditional-windows-care-repair-upgrading/traditional-windows.pdf>

Quality

If a town's buildings are well maintained, people are more likely to spend time in that town.

Heritage acts as an economic driver for a number of towns with historic interest.

The Historic Environment Advisory Council for Scotland submitted a paper to Scottish Ministers in 2009 to provide strategic advice to matters affecting such historic environment.
(<http://www.heacs.org.uk/documents/2009/economicimpact.pdf>)

They found that the historic environment played a large part to the prosperity of the nation:

'The greater share of economic impacts relate to tourism expenditure attributable to the historic environment. Indeed, tourism expenditure attributable to the historic environment is estimated to support some 37,000 FTE employees in Scotland, with this representing nearly £1.3 billion in respect of GVA'.

They concluded that:

'There is a compelling case for increased investment in the historic environment. Traditionally, the case has been made for greater investment to ensure the protection and enhancement of the historic environment. The results of this study demonstrate that there is also a strong economic rationale for increased investment in order to maximise the contribution the historic environment makes to the prosperity of the nation. The Scottish Ministers should consider the appropriate level of investment in the historic environment against this wider background.'

The Townscape Heritage Initiative and Conservation Area Regeneration Scheme projects running in Campbeltown, Inveraray and Rothesay are therefore critical to the economic development of each town and seek not just to preserve each respective town's historic architecture but to instigate positive change by making substantial improvements in key areas with large visual impact.

The historic value of each town is also critical in attracting external funding.

The appropriate use of materials is crucial in assisting this positive change and in lifting the appearance of town centres.

If poor quality materials are used they not only undermine the positive change but can also be harmful to the performance of the building.

Environmental

The environmental advantages of Window Renovation are as follows:

- Consumes up to 40x less energy than would be needed for replacement
- Reduction in material needed to be sent to landfill
- Less dependence on, and usage of, finite resources
- Carbon store and invested energy is retained

PVC-u is short for *Poly Vinyl Chloride un-plasticised* and these windows are assembled from factory-made components designed for rigidity, thermal performance and ease of production. Their design, detailing and operation make them look completely different to traditional windows.

<http://www.english-heritage.org.uk/publications/traditional-windows-care-repair-upgrading/traditional-windows.pdf>

Appendix B – Location of Prime Townscape Blocks & Listed Buildings

MAPS TO BE INSERTED

Appendix C – Cost Comparison

Research has been undertaken to obtain an indicative price quotations for the most popular types of window refurbishments or replacements:-

| TYPE OF PRODUCT OR WORKS | DESCRIPTION | COST |
|--|--|------|
| Paint window | | £65 |
| Add simplex hinge | | £55 |
| Make small repair | | £50 |
| Good overhaul of window | Include draft strip and fixing of loose parts / joints | £140 |
| Install slim line Double Glazing | On standard window (1m X 2m) | £350 |
| Make big repair | Including a new cill on standard sized window | £185 |
| Big repair on big window | Including new cill and installation of double glazing | £900 |
| New top swing (fully reversible) uPVC Unit | 900 X 1170 dimension. Flat profiled unlike traditional sash and case. Excluding fitting | £310 |
| New uPVC casement unit | 900 X 1170 dimension. Flat profiled unlike traditional sash and case. Excluding fitting | £386 |
| New timber swing unit with | Stepped profile that appears like sash and case | X |
| New vertical sliding sash and case (uPVC) | 900 X 1170 dimension. Good proportioned uPVC sash and case unit including stepped profile. Excluding fitting | £412 |
| New timber vertical sliding sash and case | 900 X 1170 dimension. Excluding fitting | £681 |

Additional Information

Useful sources of information

- Scottish Civic Trust: Windows: a frame of mind, a guide to window repair and replacement
- Historic Scotland: Thermal performance of traditional windows
- Historic Scotland: Caring for your sash and case windows a home owners guide
- Historic Scotland: Managing change in the historic environment: Windows (this document is a material consideration in determining planning applications)

- English Heritage: Secondary glazing for windows
- English Heritage: Draft proofing doors and windows

Maintenance Advice for homeowners

- *Historic Scotland – Sash and Case Windows a homeowners guide*
<http://www.historic-scotland.gov.uk/sash-and-case-windows.pdf>

Product Information

- Sash Fenestrator (makes it easy to open sash windows)
<https://www.mightonproducts.com/products/sash-window-hardware/window-assistance/fenestrator#>

More references:

Case Study South Uist, insulation to windows, doors walls and roof

<http://conservation.historic-scotland.gov.uk/hs-refurb-case-study-6.pdf>

Case Study: Five Edinburgh Tenement Flats – Wall and window upgrades

<http://conservation.historic-scotland.gov.uk/hs-refurb-case-study-1.pdf>

Case Study : Garden Bothy, Cumnock

<http://conservation.historic-scotland.gov.uk/hs-refurb-case-study-8.pdf>

Slim-profile double glazing Thermal performance and embodied energy

<http://conservation.historic-scotland.gov.uk/techpaper9.pdf>

Technical Paper 23: Thermal assessment of internal shutters and window film applied to traditional single glazed sash and case windows

<http://conservation.historic-scotland.gov.uk/hs-technicalpaper-23.pdf>

Thermal performance of traditional windows

<http://conservation.historic-scotland.gov.uk/techpaper1-thermal-performance-traditional-windows.pdf>

A guide for practitioners: <http://conservation.historic-scotland.gov.uk/publication-detail?pubid=8563>

Inform easy read guide to improving thermal efficiency :

<http://conservation.historic-scotland.gov.uk/inform-energy-efficiency.pdf>