

Managing
Change
in the Historic
Environment

External Walls



Consultation draft
August 2009

Key Issues

- 1. The external walls of a building are perhaps the most important single element of its character. When planning works affecting the walls it is important to understand the contribution of their design, materials, method of construction, colour, texture and detailing to the character of the building.**
- 2. Walls often use local building materials or local traditions. New work should seek to maintain this wherever possible.**
- 3. Physical or documentary evidence should inform the reinstatement or reconstruction of walls.**
- 4. Where archaeological evidence of blocked openings or phases is revealed, this should be documented, and where possible retained.**
- 5. Traditional walls contribute to energy efficiency through their thermal mass, which allows for natural warming and cooling. Maintenance and appropriate repair of traditional walls is normally more sustainable than replacement in modern materials.**
- 6. Local authorities give advice on the requirement for listed building consent, conservation area consent and other permissions.**

INTRODUCTION

This is one of a series of guidance notes on managing change in the historic environment. The series explains how to apply the policies contained in the *Scottish Historic Environment Policy* ([SHEP](#), PDF 312K) and *Scottish Planning Policy 23: Planning and the Historic Environment* ([SPP23](#), PDF 192K).

This note sets out the principles that apply to the alteration of the external walls of listed buildings. It replaces the equivalent guidance in *The Memorandum of Guidance on Listed Buildings & Conservation Areas* (1998) and should be afforded equal weight in drawing up planning policies and determining applications relating to the historic environment.

Monuments scheduled under the Ancient Monuments & Archaeological Areas Act 1979 require scheduled monument consent for any works. Where a structure is both scheduled and listed, the scheduling controls have precedence. Separate advice is available from Historic Scotland's website: [Scheduled Monuments: Guidance for Owners, Occupiers & Land Managers](#) (PDF 718K).

WHY ARE HISTORIC EXTERNAL WALLS IMPORTANT?

External walls are usually the defining feature of a historic building or monument. They not only incorporate the bulk of the historic fabric and perform structural or weather-protection tasks, but through their design they can also express some of the cultural and intellectual context in which the building was produced.

Design qualities

Many of the formal qualities of a historic building, such as scale, proportion, colour, texture or style, are largely derived from the design and construction of its walls. The dimensions, types of materials and finishes, and the position and size of openings within the wall may all be important indicators of the building's age, purpose, status, or development through time.

Material qualities

Often design considerations were determined by the technological capabilities of the period, local building materials and traditions, topography and climate, stylistic intent, and social or economic circumstances.

Structural qualities

Many external walls have a structural function in supporting floors and roofs as well as providing a protective envelope around the internal spaces. Other external walls act primarily as a weatherproof skin, with structural support provided by a framework of timber, iron, steel, or reinforced concrete (depending on the age of the building). Whether structural or non-loadbearing, external walls are critical to the long-term stability and technical performance of the building.



Neolithic house, Skara Brae, Orkney. From the earliest times walls were designed to provide shelter and security, to contain warmth, and to meet the functional requirements of domestic and ritual life. Local materials and skill traditions established different patterns of wall construction and building design in different parts of the country, and adapted to new types of building and usage over time.



Central block of the former Fife Arms Hotel, Banff, 1843–45. The classical design places emphasis on the symmetry, proportions and detailing of the walls and reflects the functional hierarchy of the interior. Corniced windows indicate the principal rooms on the first floor; smaller windows relate to private or subsidiary rooms. The design maximises the architectural impact of the walls by hiding the shallow pitched roof behind a parapet. © N Haynes.



The mid 18th-century Old Schoolhouse at Cottown, Perth & Kinross. The uneven character of the wall surface is derived from the local materials used in its straw-bonded mudwalls. The colour reflects the use of local clay as a pigment in the modern coating of lime harl and limewash applied during repairs by the National Trust for Scotland. The different window sizes reflect the internal hierarchy of rooms. © N Haynes.



A decorative anthemion (1923), crisply carved in local grey granite, Union Street, Aberdeen. © N Haynes.



Mass concrete tenements in Dundee, cast in-situ in 1874–5 by the Concrete Building Company for the Working Men's House Building Association. The buildings were renovated and a buff render applied in 1982–4. © Crown copyright: RCAHMS. Licensor www.rcahms.gov.uk.

IDENTIFYING THE INTEREST OF HISTORIC WALLS

The walls of historic buildings have a wide variety of forms and materials, ranging from relatively simple local vernacular to highly crafted opulence, reflecting their ownership, location, purpose, and the period(s) of their construction.

Earth and clay

From the earliest of times, walls were constructed from local natural materials such as clay, timber and stone. While stone rubble walls remain the most obvious legacy from the past, buildings were constructed into the 19th century from walls of clay mixed with straw or from clay and boole (uncut stone), often with a sacrificial layer of lime or clay render to provide further protection. Double-skinned stone rubble walls with earth packed between were a common form of construction until the 19th century.

Stone

However, stone is the predominant building material in Scotland and often reflects the local geology: e.g. red sandstone in the South-West, paler sandstone in the East, granite in Aberdeenshire. Advances in technology in the 19th century freed stone from being the main structural element of building, although it continued to be used in wall construction and cladding to protect the structural frame. The size of the stones, their position and the style of jointing contribute significantly to the character of a wall and can demonstrate distinctive local traditions. The finish of stone ranges from roughly shaped or simply squared rubble to tooled and finely polished ashlars. Jointing can vary from broad 'slaister' pointing in lime mortar to wafer-thin joints filled with lime putty. Decorative carved stone details are employed on walls from the medieval period into the 20th century.

Harling

Harl or render was extensively used as a surface coating to protect friable construction materials or to provide the illusion of a fine masonry finish. Until the early 20th century harl was predominantly made from non-hydraulic lime mixed with local aggregates, from which it gained its pigmentation.

Brick

Brick began to be manufactured in Scotland in the 17th century but did not gain significant production and use until the 18th century. Garden walls, farm offices and farmhouses saw the early adoption of brick. 19th-century improvements in production quality and volume led to a widespread use of brick for industrial purposes and housing, particularly in mining areas. Brick was also widely used for housing between the wars, and was put to good use by 20th-century modernist architects.

Concrete

From the 1850s, mass concrete was used for building sheds and houses, often using similar construction techniques to clay walling. Reinforced concrete was used extensively in the 20th century, initially for its structural properties but in the post-war period for the aesthetic value

of its finishes. The aggregate employed could result in a very coarse surface, and the imprint of rough wooden shuttering resulted in a highly textured surface.

Other materials

From the mid 19th century, many firms produced catalogues of prefabricated buildings ranging from cottages, barns, meeting halls and churches to whole factories made of timber frames clad with corrugated iron. The profile, pitch and gauge of the metal and the choice of finish establish the distinctive character of these walls. Technological advances have resulted in cladding in a variety of metals in the 20th century as well as materials such as ceramic tiles, terracotta, faience, vitrolite and glass.

GENERAL PRINCIPLES FOR ALTERATIONS AND REPAIRS

Character and interest of the building

Alterations or repairs to the external walls of a historic building should protect its character. Walls are valuable in their own right as major elements in the design of a historic building and for their practical performance and appearance. Documentary research and fabric analysis can be useful in understanding the design and material properties of historic walls before undertaking alterations or repairs.

Maintenance

Regular inspection, maintenance and appropriate repair are essential to maintaining the structural and visual integrity of historic walls.

Alterations

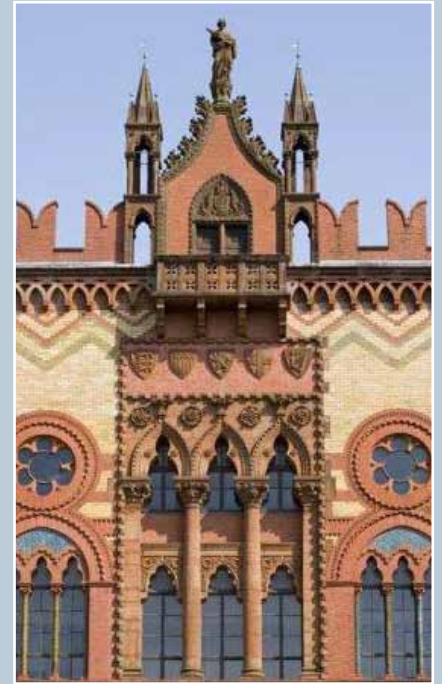
All alteration proposals should take into account the design and material characteristics of the historic wall. Most buildings have one or more principal elevation, which is usually particularly sensitive to alteration. There are often ways of accommodating alterations, perhaps in alternative locations, without detriment to the character of a principal elevation. The design, materials and construction of alterations should seek to complement the original in terms of quality.

New openings

The formation of a new opening in a wall needs to be considered in light of the overall composition of the wall and assessed as to whether or not it would be consistent with the existing design. Where the formation of a new opening is found to be consistent with the design of the wall, the minimum historic fabric should be removed and the opening should be detailed to match the existing openings. Where there is no obvious precedent, a clearly modern intervention of high-quality design may be appropriate. Service ducts and vents should be located on secondary elevations. Separate guidance on extending buildings is provided in this series.

Rebuilding

There may be occasions where a wall needs to be rebuilt for structural reasons. In most cases it is possible to rebuild the wall reusing the



Former Templeton's Carpet Factory, City of Glasgow (1889). The decorative brick alludes to the pattern of an Axminster carpet and to the form of the Doge's Palace, Venice. This was acid cleaned in the 1980s and is now paler than before. © Crown copyright: RCAHMS. Licensor www.rcahms.gov.uk.



High Street, Arbroath. Rich pink-red sandstone, typical of parts of Angus. Here the stone is laid in regular courses. © N Haynes.



New wide openings were created at the rear of Kelvingrove Art Gallery in Glasgow to provide level access to the building. The scheme used the existing architectural stone framework to set off new high-quality gates sculpted in stainless steel.



Structural instability requires the rebuilding of this wall in Peterhead. The granite stones have been numbered ready for reinstatement.



Dymock's Buildings (late 17th century), Bo'ness, was restored by the National Trust for Scotland in 2004. A cement render was removed, the archaeology of the wall recorded, and then a lime harl and limewash were applied. Evidence of former openings remains visible. © N Haynes.

bulk of the dismantled original material. Dressed stone in particular should be rebuilt in its original position. It is important to maintain the proportions, depth and irregularities arising from historic methods of construction in the rebuilt wall. New materials should match the characteristics of the existing in all respects. The opportunity can be taken to restore any details of the wall that have previously been altered. Proposals to rebuild should normally be accompanied by a structural report and detailed survey drawings to enable a faithful reconstruction.

Facade retention

In most cases a large part of the significance of a building is likely to lie in the integrity of all its surviving parts. Removal of everything except the outside walls is almost always damaging to the integrity and significance of the building, and can normally be avoided.

Reinstatement

Where walls have been altered inappropriately in the past, reinstatement should be based on documentary or physical evidence of missing features or materials.

Harling

New harl, render or limewash should be based on evidence of previous use of the material on the building. Properly specified traditional materials allow the wall to absorb and evaporate moisture effectively. Historic cement renders should only be removed if found to be causing damage. The application of limewash and its boundaries should likewise be backed by evidence. Repointing should use traditional materials compatible with the walls' original construction and detailed in a manner appropriate to the character of the building. It is advisable to seek professional guidance in specifying and using traditional materials.

Paint

The application of impermeable paint to unpainted historic walls can cause considerable damage in the long term by preventing the evaporation of moisture from the underlying fabric. Where paint has been applied in the past and is harming the performance of a wall, careful removal is recommended.

Indenting and plastic repairs to masonry

Stones only need to be replaced when they have decayed to such a degree that they affect the structural stability of the surrounding stonework. Indent repairs should be carried out in stone that best matches the existing stonework in mineralogical composition and carried out to the highest technical standards. The visual appearance of eroded stonework does not necessarily require repair. Cladding or plastic repairs in synthetic materials are likely to exacerbate decay as well as being visually detrimental. Planning authorities may ask for evidence to show that repairs are necessary and that the repair methods are appropriate.

Sculpture

Replacing sculptural stonework on a wall must be considered against its significance and that of the building as a whole. Erosion is a naturally occurring phenomenon and can be part of the attractive aging process of an historic building. If decorative stonework is a significant architectural feature then the replacement of sculptural details to maintain its significance may be appropriate.

Cleaning

The patina that materials acquire through weathering should not be considered detrimental to the appearance of a wall. The weathering of building materials often enhances their attractive qualities. Weathering layers can form natural barriers that protect the material from erosion, and attempts to remove them can cause considerable damage and accelerate decay. Cleaning should normally only be considered where the structural integrity of the wall is threatened by surface growths. To ensure that the cleaning method will not damage the stone or brickwork, applications for listed building consent should be supported by a technical analysis and sample test cleaning of small unobtrusive areas. Further information on localised cleaning methods is available in Historic Scotland's [Inform Guide: Graffiti and its Safe Removal](#) (PDF 454K).

Archaeology

Work to historic walls can often reveal features such as blocked openings or a change in material that can provide significant information about the development history and fabric of the building. Photographic or measured recording may be appropriate if the evidence will be covered over in the course of the works. Where there is a high likelihood of uncovering archaeological evidence in a major building, adequate provision should be made for recording as works progress.

ENERGY EFFICIENCY AND SUSTAINABILITY

Generally historic walling materials are extremely durable. Much of the initial and recurring embodied energy of a historic building is likely to be contained in the walls. In most cases, careful maintenance and sensitive repair of existing historic materials can ensure that the initial embodied energy in old walls is not wasted through demolition and replacement. Major repairs can be minimised by regular inspection and repair of defects at an early stage. Where it is necessary to demolish historic walls, the reuse of materials in other projects can similarly help to retain some of the initial embodied energy and avoid contributing to landfill.

Properly maintained traditional masonry walls can be very thermally efficient. Their thermal value is usually achieved through mass and their performance is dependent on their ability to retain heat and 'breathe' out moisture. Preventing the build-up of excess water in external walls will help to optimise their weatherproofing and thermal performance.



Scottish National Portrait Gallery, City of Edinburgh, 1890. Decisions about whether to re-carve stonework are a matter of values. Here the artistic value of a sculpture calls for it to be conserved mostly as found, whereas the architectural elements (finials and hoodmoulds) that also function in shedding rainwater have been completely replaced where required. © Copyright: RCAHMS (William McKelvie Collection). Licensor www.rcahms.gov.uk.



Graffiti: The removal of graffiti requires prompt action before the paint or ink dries into the wall surface. Cleaning methods should be tested on a small unobtrusive area to determine the least aggressive treatment for effective removal of the graffiti. In extreme cases of repeated vandalism, a sacrificial wax coating might be considered for vulnerable surfaces.



The exposed wall of this 17th-century house in Cupar, Fife, reveals archaeological evidence of a number of blocked openings. The previous mixture of window sizes and levels has been regularised in the current arrangement. © N Haynes.



Modern lime mortar pointing, Scottish Lime Centre, Charlestown, Fife. The use of lime allows the wall to 'breathe'. Traditionally, most rubble walls had lime slastered, or buttered, over the joint to achieve a fairly smooth finish that would erode with time. Where pointing does not alter the character of a listed building it would not normally require consent.

Measures to consider include:

- prompt repair of roofs, gutters, downpipes, wallheads, and missing pointing or harling;
- appropriate ground drainage;
- appropriate repairs in traditional materials to maintain the breathable qualities of joints, stonework and internal painted surfaces.

Additional energy conservation measures are best considered in the context of all component parts of a building. Further information is available in Historic Scotland's [Inform Guide: Energy Efficiency in Traditional Homes](#) (PDF 715K).

CONSENTS

Listed building consent is required for any work to a listed building that affects its character. The local authority determines the need for consent.

Where listed building consent is required, an application is made to the local authority. This should include accurate scale drawings showing both the existing situation and proposed works in context. It is normally helpful to provide detailed technical information and photographs.

FURTHER INFORMATION AND ADVICE

Details of all individual scheduled monuments, listed buildings, designated gardens and designed landscapes, and designated wrecks can be obtained from Historic Scotland (see contact details below) or at: www.pastmap.org.uk. Details of listed buildings can also be obtained from the relevant local authority for the area.

Advice on the requirement for listed building consent, conservation area consent, building warrants, and other permissions/consents should be sought from local authorities.

Historic Scotland Inspectorate
Longmore House
Salisbury Place
EDINBURGH
EH9 1SH

Tel: 0131 668 8981 or 8717 Fax: 0131 668 8765

E-mail: hs.inspectorate@scotland.gsi.gov.uk

Web: www.historic-scotland.gov.uk

Advice on technical issues is available from Historic Scotland's Technical Conservation Group at the above address and website or at the following:

Tel: 0131 668 8715 or Fax: 0131 668 8669

E-mail: hs.technicalconservationgroup@scotland.gsi.gov.uk

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www.historicscotlandimages.gov.uk

Cover images

Charles Rennie Mackintosh's Daily Record Building (1900–04), Renfrew Lane, Glasgow. The tall frontage to the narrow lane is faced in white glazed brick at the lower levels to reflect and maximise light. © N Haynes.

Decorative brickwork at the former Templeton's Carpet Factory (by William Leiper, 1888), Glasgow. The colours are paler after acid cleaning in the 1980s. © Crown copyright: RCAHMS. Licensor www.rcahms.gov.uk.

George Square, Edinburgh. The replacement stone (at the bottom of the photograph) is carefully matched with the original 1890s stone for type, colour and tooling. Natural weathering will reduce the contrast between the new and old work. © N Haynes.

Other selected Historic Scotland publications and links

[Maintaining your Home – A Short Guide for Homeowners](#) (2007) (PDF 1.4MB)

[Inform Guide: Energy Efficiency in Traditional Homes](#) (2008) (PDF 715K)

[Inform Guide: Damp Causes & Solutions](#) (2007) (PDF 443K)

[Inform Guide: Masonry Decay](#) (2005) (PDF 367K)

[Inform Guide: Repointing Ashlar Masonry](#) (2008) (PDF 542K)

[Inform Guide: Indent Repairs to Sandstone Masonry](#) (2007) (PDF 479K)

[Inform Guide: Structural Cracks](#) (2008) (PDF 934K)

[Inform Guide: The Use of Lime & Cement in Traditional Buildings](#) (2007) (PDF 480K)

[Inform Guide: Repairing Brickwork](#) (2007) (PDF 513K)

[Inform Guide: Care & Maintenance of Corrugated Iron](#) (2008) (PDF 595K)

[Inform Guide: Cleaning Sandstone: Risks and Consequences](#) (2007) (PDF 439K)

[Inform Guide: Graffiti and its Safe Removal](#) (2005) (PDF 454K)

For the full range of Inform Guides, Practitioner Guides, Technical Advice Notes and Research Reports please see the Publications section of the Historic Scotland website.