



**Historic  
Environment  
Grants**

**Building Repair  
Grants Scheme**

**Advisory  
Standards of  
Repair**

(to be read in conjunction  
with the ARCH1 report)  
Revision C 2007

# 1 Introduction

Historic Buildings Repair Grant is given to assist in the execution of a repair scheme on site. It is important that the repair scheme reflects the cautious, studied approach set out in various international conservation charters. In particular, the cultural significance of the building should not be compromised and the work should retain as much historic and original fabric as possible by minimising interventions. Approved repairs to the existing fabric should adopt the traditional materials, craft skills and construction techniques found in the original building.

Applicants should note that Listed Building Consent procedures and repair grant procedures are entirely separate systems. It should be understood that any proposals to alter any part of the building may require Listed Building Consent and that Listed Building Consent does not necessarily mean that the proposals qualify for repair grant. Changes to the fabric arising as a direct consequence of a conversion proposal or change of use is not eligible for grant assistance. Where an historic building or structure is conterminous with a Scheduled Monument, Scheduled Monument Consent may also be required.

In order to attract grant assistance from Historic Scotland the applicant's Conservation Accredited professional adviser should develop repair proposals to the highest standards of conservation practice using the Historic Scotland project-specific ARCH1 advisory report as the basis of the scheme. It is recommended that the following advisory standards of repair are adopted where indicated in that report. (Note, however, that some advisory standards are not grant-eligible.) It is equally important that the subsequent works on site are also administered to high standards. Management of the works to meet the requirements of the Health and Safety legislation is the responsibility of the applicant, his or her contractor(s) and professional advisor(s).

Historic Scotland should be consulted on detailed points where repair techniques or use of materials affects the appearance or integrity of the historic fabric. When preparing the scheme of works, any conflict between Historic Scotland guidance and emerging site or documentary evidence should be drawn to Historic Scotland's attention and the way forward agreed in writing before proceeding.

## 2 Documents

A copy of the relevant tender drawings showing the proposed works, specification and bills of quantities is to be submitted to Historic Scotland for comment prior to tender documentation being finalised. Copies of the priced documents will be required by Historic

Scotland as they become available. Documentation submitted to Historic Scotland should be kept to the minimum commensurate with a full understanding of the historic fabric repair work and other work in context. Provide a note of contract period and defects liability period.

## 3 Costs

Tender costs should be summarised according to the paragraphs in the project-specific report for the building and set out so that any future alteration to the costs (with explanation) can be compared directly with the tendered amount. Figures should also be provided for the following costs expressed as a percentage of the total grant eligible costs for works identified in the project-specific report:

1. Contract preliminaries
2. Contingencies
3. VAT on works
4. Professional fees
5. VAT on professional fees

In exceptional circumstances and where agreed in advance, specialist reports such as archaeological work or paint analysis may be eligible for grant assistance at Historic Scotland's discretion.

## 4 Scaffolding

### 4.1 Scaffolding Design

1. When bracing scaffolding, avoid the use of damaging masonry anchors. Consider the use of window openings, window jamb cramps, raking support or fixing into mortar joints that are sufficiently wide to prevent damage to adjacent stone surfaces.

2. If anchors are required, they must not be fixed close to edges of carved decorative features.

3. A strategy for the insertion **and** removal of fixings should be devised before scaffolding is erected. Expanded ferrous anchor sockets left in masonry will cause staining and cracking as they rust and must be removed at the end of the work. Consider rubber sleeved anchors which can be withdrawn on completion of the works

## 5 Roof and Rainwater Disposal

### 5.1 Roof Structure

1. Ensure the roof structure is sound. Where there are significant signs of movement in the roof structure, advice from an engineer experienced in the repair of historic structures may be required. When designing remedial structural repairs, adopt a minimum intervention approach and discuss the proposed repair with Historic Scotland.
2. Clear sarking of old nails and lift the lowest sarking boards to inspect the rafter ends and the wall plate.
3. Inspect timbers for rot, insect attack and structural weakness. Repair damaged timbers using new preservative treated timbers run to the original profile and treat rot or insect attack locally as required. Timbers should be spliced in-line rather than cheek bolted (see also 8.2 and 8.3 below).
4. Where possible, separate timber repairs from damp stonework with a DPC and allow for free ventilation where practicable.
5. Check the provision of ventilation to roof voids. If additional ventilation is required, locate discreetly and create using traditional materials e.g. lead.

### 5.2 Slating

1. Understand the original roof build-up and design the repair, including the use of underfelt where appropriate, to suit the site circumstances.
2. Where different types of slate have been used across building phases or ranges as part of the natural evolution, these characteristics are to be respected.
3. Re-slate using sound original slates recovered from the site together with matching slates brought in as required to make up the required number. Samples of slate to make up broken or unsuitable slates should be agreed before purchase.
4. Slates to be laid to exactly match the original laying pattern using slates of the same shape as the originals.
5. Re-used slates should **not** be re-dressed as a matter of routine.
6. Slates should be fixed with non-ferrous nails.
7. Replacement lead flashings, secret gutters, ridges and other weatherings to be lead as described below.
8. Mortar fillets at skews may be reinforced with expanded non-ferrous metal reinforcing lath and formed on top of code 4 soakers.

### 5.3 Leadwork

1. Weathering to lead flat roofs to be in new milled or cast lead as follows:
  - cupola astragal cover flashings to be a minimum of code 5;
  - flashings, secret gutters, dormer cheeks etc to be code 6;
  - valleys to be minimum code 7;
  - short gutters or small areas of flat roofs without foot traffic may be minimum code 7;
  - all other flat roofs or gutters on geotextile underlay to be code 8;
  - ridges to be code 8 and fixed with clips of minimum code 8 lead, copper or terne-coated stainless steel.
2. Lead to be laid to follow the recommendations of the Lead Sheet Association. Complex and details unique to the building should be drawn at a large scale sufficient to illustrate how these areas are to be constructed.
3. Flashings are to be inserted into raggles sufficiently deep to allow the raggles to be pointed. Existing raggles should be used wherever possible. Lead should be isolated from lime mortar by a protective coating
4. The use of sacrificial flashings where slating discharges into valleys and parapet gutters is encouraged.
5. On flat roofs, hollow roll joints should not automatically be replaced with wood cored roll joints, consideration should be given to the historical context, the roof pitch and any likely foot traffic

### 5.4 Fired Clay Roof Tiles

1. Understand the original roof construction and repair the timber substructure - including replacement felt as appropriate.
2. Tiled roofs are normally laid on battens and counter battens (over roofing felt).
3. Fired clay roof tiles have a limited life as the tile begins to delaminate, shatter and break down with exposure and age. Consequently, older roofs may require a higher proportion of new tiles.
4. Replace broken or unsound tiles with new tiles of the same colour, profile, size and glaze (if relevant).

### 5.5 Asphalt

1. Where an asphalt roof covering is damaged and leaking this should be lifted and replaced with new asphalt laid in coats strictly in accordance with the instructions of the Mastic Asphalt Council. Sand dusted surface is preferred.
2. If an insulated asphalt roof is required, solar reflective surfaces and insulation are not eligible for grant assistance. Lead overflashings to be detailed in accordance with the recommendations of the Lead Sheet Association.

## 5.6 Thatch

1. There are many types of thatch and thatching techniques in Scotland and these roofs are now a scarce and highly valued historic resource. Repairing traditional thatched roofs requires the most careful investigation and consideration.

2. A search for archival visual or photographic evidence of the building and its thatched roof will be necessary before works are proposed.

3. Recording should include the building type, evidence of changes in the building use, primary and secondary roof structures including connections and changes in thatch type.

4. Archaeological trenching through the thatch may help to provide invaluable information on the make up of the roof and allow the sources of the thatch materials, including substratum layers, to be identified. Many thatches survive as an insulation layer under corrugated iron roofs.

5. Proposals for the repair of traditional thatched roofs should follow the original as far as possible and include repair or replacement of structure, substratum and thatch type.

6. Discuss proposals with Historic Scotland in advance of repair.

## 5.7 Metal Roofs

1. Repairs to copper roofs should replace copper trays by closely matching the original but with details, gauge of copper and underfelt as recommended by the Copper Sheet Association.

2. Corrugated iron used as a roofing material or wall cladding should be replaced with new galvanised corrugated iron to the original profile and using fixings to match the original.

## 5.8 Stone Slab Roofing

1. Record existing stone slab slating noting course heights, lap and peg fixing.

2. Carefully remove existing slabs using best practice and lay aside for re-use. Do not lever out pegs by lifting tails of slabs. Pegs should be removed without splitting slabs or enlarging peg holes. This may require a higher than usual level of skill and workmanship.

3. Re-grade slabs and make up differences in new stone slabs which match the source, colour and texture of the original.

4. Re-fix using newly made seasoned timber pegs of matching species (traditionally oak).

## 5.9 Bitumen Felt Roof Covering

1. Where bitumen felt roof covering was the original and historically correct roof covering on a flat roof, modern equivalents such as single ply membranes may be considered grant eligible. Perimeter details should remain broadly the same as for the felt original. Note, however, that these membranes will not be accepted as a replacement for roofs that were originally finished in lead, zinc, copper or mastic asphalt.

## 5.10 Rainwater Disposal

1. Check that the existing rainwater goods are adequate to control and discharge water safely away from the building. If not, the professional adviser should submit proposals for additional installations. Note that alterations may require Listed Building Consent.
2. Where cast iron rainwater goods are sound ensure they are clear and flowing freely.
3. Where broken damaged, missing or in non-original materials such as uPVC, replace to match original profile and detail in cast iron.
4. Ensure maintenance access exists at ground level.
5. Ground drainage to be checked and made fully operational to ensure water is being conducted properly away from the building. Digging within archaeologically sensitive areas such as graveyards may require an archaeologist.
6. All cast-iron pipework and rhones to be prepared, primed and painted in accordance with manufacturer's written instructions using a high performance paint specification. Paint new cast iron goods before site assembly and make good joints, chips and fixings immediately after fixing. The final colour may be selected using evidence gained in the cleaning process or to match the background masonry.

## 5.11 Skylights/Ventilators

1. Original cast iron skylights are usually sound and should be repaired and reused rather than replaced. These are to be painted as outlined for rainwater goods above.
2. Where replacement rooflights are required, replace with new rooflights to the same size, detail and materials. Modern skylights of the same size and appearance but incorporating thermal breaks and alloy castings are acceptable.

## 5.12 Safe Access

1. The opportunity should be taken to ensure there is adequate safe access for maintenance and repair.
2. Where required, provide attic walkways to allow safe inspection and maintenance of these spaces.
3. Locate access ladders and roof hatches discreetly.

## 5.13 Lightning Conductors

1. Lightning conductor systems can result in a considerable visual intrusion on historic structure; refer to English Heritage design guide "*Lightning Protection of Churches*" for guidance on discreet design.
2. Fixings should be secured in joints rather than stones and conductor lines are to be discreetly located behind or beside other building elements such as downpipes or buttresses.
3. Early lightning conductors may be retained and integrated into the new system.

## 6 Masonry

### 6.1 Structural Condition

1. Where significant structural movement, settlement cracking or other evidence of a compromised structure is identified, advice from an engineer experienced in the repair of historic structures may be required. Discuss the proposed remedial works with Historic Scotland

### 6.2 Masonry Repair

1. Carefully remove any vegetation while avoiding damage to the masonry.
2. From the scaffolding, brush down loose stone (with bristle brushes, not wire) and tap the existing surface to ensure the face of the stone is sound. Where the stone face is eroded or crumbly but this does not pose a threat to the weathering function (eg cills), the structural integrity or the architectural interpretation of the building, it is advisable to leave the stone in place for attention at some time in the future.
3. Where soft, cracked or crumbly stones are identified as a threat to the structure or weathering, or **significantly** detracting from the architectural composition and integrity of the building, they may be carefully cut out and indented with a matching stone that respects the existing stone joint pattern. Where it is necessary to replace missing, broken, cracked or eroded stones with new stone, ensure that the new stone is a suitable replacement for the original in terms

of colour, texture, porosity, crushing strength and weathering properties. Advice on suitable new stone to match existing can be obtained from the British Geological Survey.

4. Remove any redundant fixings, surface-mounted cables, television aerials and extraneous ferramenta - including redundant drainage branch pipework. Where services cables or aerials are required, discreetly route them behind internal finishes. This services-related work is not grant-eligible.

5. Exposed surfaces of new stone should be hand dressed to match the original face or tooling. Avoid the use of power tools on any exposed surface of stone. Cut replacement stone on the correct geological bed for the circumstances of its use in different elements of the building. Lay on a full mortar bed, grout behind and point fully to ensure loads are taken by the new stone. Indented face stone should have a minimum bed depth of 150 mm. New stone should not be distressed or toned down to match original.

6. Avoid the use of restoration mortars on face work or margins. Mortar made from lime, sand and graded matching stone, may be acceptable for fine cracks or small "pocket" repairs in otherwise sound stone and where lying water and subsequent frost damage may be considered a risk.

### 6.3 Joints in Ashlar Masonry

1. Where ashlar masonry is quite tight with few open joints, avoid re-pointing this masonry.
2. Re-point open ashlar joints by raking out loose or crumbly mortar by hand with a hacksaw blade or similar and hose joint clean. **Angle grinders and power drills must not be used.**
3. Wet joints and re-point using putty lime mortar and fine light coloured sand.
4. Take care to protect the arrises to avoid staining on the ashlar.
5. Brush off any loose mortar. Ensure stones are not stained by water used to sponge off any mortar residue. Protect pointing while it is curing in accordance with best practice.
6. Do not point open joints which were originally dry built such as some harbour walls or dry-stane dykes.

### 6.4 Removal of Cementitious Pointing

1. As it can be damaging to the adjacent stone arrises to remove well-adhered cement mortar, it is often better to avoid removing sound cementitious pointing.
2. Where cracked and open or separating from the stone, carefully remove cementitious mortar by the use of fine masonry chisels. Power tools should not be used.
3. When free space has been created, mortar may be freed from the stone by

working back into this space. Pointing should be raked out to a minimum depth of 35 mm and the joint flushed clean.

### 6.5 Joints in Rubble Masonry

1. Where mortar joints in rubble masonry are loose or crumbly, carefully rake out to a minimum of 35 mm using tools narrower than the joint to avoid damaging the stone.
2. Thoroughly flush clean the joint and re-point with the mortar mix informed by analysis (see below). Pointing to be well packed into the joint and finished to match the original and suit the style of masonry construction, including, where appropriate, the correct number of pinning stones to maintain the mortar/stone ratio of the wall indicated in the original build.
3. Stones used for pinning repair in rubble masonry should have the same colour, surface treatment and edge dressing as the surrounding masonry.

### 6.6 Brick

1. All brickwork repairs to accurately follow the original build, using brick of accurately matching colour, size, hardness and porosity.
2. Following brickwork repair, re-point using a pointing tool and application technique similar to that used originally with a mortar specification suiting the age of the building and the strength of the brick.

## 6.7 Flue Terminals

1. Chimney pots to be replaced to match the original form indicated by documentary or site evidence. Where there is no evidence of the original, use pots that are in use on buildings of similar period in the vicinity.
2. Ensure that the number of pots accurately reflects the number of flues.
3. Chimneys not in use should be cleared of debris and then terminated with a vented weathered top to match the pot and a vent at the bottom of the flue to allow free air circulation.

## 6.8 Concrete

1. Commission an independent investigative specialist report on the condition of the concrete and repair the structure accordingly. The report should include such techniques as use of a cover-meter to establish the depth of cover to the reinforcement and include core samples at strategic locations to enable analysis of the depth of carbonation, chloride content and quality of concrete.
2. Remedial works may include treatment with corrosion inhibitors and repair of spalling by breaking out poor concrete, cleaning or replacing reinforcement and repairing concrete to match the original finish. Consider treating repair locally with corrosion inhibitor to prevent localised sacrificial corrosion.

## 6.9 Harl/Render

1. Harl or render coats should be applied in accordance with traditional harling (or throwing) techniques. Samples of the original harl should be analysed to clearly identify the various constituents eg shell, aggregate, lime proportions etc. The new harl should have a wide range of aggregate grading and replicate any local mix or application traditions.
2. Quality and appearance of work to be determined by sample panels.
3. Harling/rendering to be applied using a lime mortar mix in 2 or 3 coats.
4. Site operations should ensure that flashings, rainwater goods and external joinery are fitted at the appropriate time in order to ensure a good finish to the harl/render.
5. Where a lined out “ashlar” appearance is to be made, the surface should be pressed flat and the lining out undertaken to a pre-determined pattern of joints. The ruling tool is to be appropriately shaped in order to provide lines of the correct depth, consistency and cross-section.

## 6.10 Lime Mortars for Building, Pointing and Harling.

1. Lime mortars have significantly different working properties to cement mortars. Advice on procedures and suitable mixes can be obtained from the Scottish Lime Centre Trust.

2. All works to be undertaken by fully trained masons with experience of historic building work.

3. Lime mortar mix for indenting or pointing should match the original mortar and be informed by careful analysis of original build mortar samples. It should be prepared in advance to achieve maturity and may require a hydraulic content to achieve a predictable set and avoid lime leaching. Pozzolanic materials may be added to putty lime mortars to aid setting.

4. Where evidence of the original mix does not exist, lime and sand for the mix is to be carefully selected to ensure the mix has a suitable self colour, even if it is to be limewashed.

5. Ensure lime mortar work is undertaken in appropriate weather conditions and protect lime mortar from sun, rain and frost until cured in accordance with best practice.

6. Earth mortar exists in some early or rural buildings. Care should be taken to identify, analyse and carefully reproduce where repair is required.

### **6.11 Removal of Algae from Masonry**

1. Where water has caused moss and algal growth on masonry, the area is to be scraped clean with wooden spatulas and cleaned down to remove all organic debris and soil prior to re-pointing. The source of moisture encouraging such growth must be addressed in order to prevent re-growth.

2. The use of a biocide is acceptable within a grant aided scheme but is

**not eligible for grant assistance.**

It should be recognised, however, that biocide is unlikely to have a long-lasting effect and may damage the masonry. Consequently, the use of biocide should not form part of a regular maintenance regime.

### **6.12 Removal of Paint and Graffiti from Masonry**

1. The use of a paint remover is acceptable in a grant aided scheme but is **not eligible for grant assistance.**

2. It is necessary to analyse the paint type to establish the least damaging paint removal method. 2. Paint and graffiti removal should be tested and approved for use on that particular stone type before approval to proceed is given.

3. Chemicals used on stone are to be neutralised immediately after use as recommended in the manufacturer's written instructions.

### **6.13 Removal of Invasive Vegetation from Masonry and Immediate Vicinity**

1. The main vegetation trunks are to be cut and roots treated with suitable systemic weed killer in accordance with the manufacturer's instructions. Larger growths of surface vegetation may be cut into smaller areas (creating a grid) prior to treatment. This will identify areas where growth persists and allow subsequent treatment to be more selective. More than one treatment may be necessary over a period of time.

2. The vegetation adhering to the masonry is to be left until dead, and then carefully removed by gently teasing the mat away from the building taking care to sever roots that penetrate the masonry. Larger vegetation should be removed by hand weeding ensuring that all roots are removed to avoid leaving potential open paths for water ingress as they decay
3. Stones that are found to be loose are to be held in place by wooden wedges until consolidation work is undertaken.

#### **6.14 Limewash**

1. Historic limewash can have several constituents ranging from natural pigments, tallow and other organic additives. As with mortars, analysis and sample panels should be carried out before the specification is finalised.
2. Limewash should be applied to a pre-wetted surface. Multiple coats will be required as it should be applied in sufficiently thin coats (the consistency of skimmed milk) to allow carbonation.

3. Limewash should be screened from rapid drying in accordance with best practice. Where the limewash is exposed to drying winds or temperature, repeated wetting of the screens will be necessary.
4. Layers of limewash should not be applied if the appropriate attendance to control rapid drying is not possible.
5. Regular maintenance coats will be required over subsequent years.

#### **6.15 DPC**

1. Installation of new chemical DPCs are not considered grant eligible and should not feature in a grant eligible scheme as the long term effect of chemicals on the masonry is not known.
2. Appropriate DPCs may be considered for situations such as under copes etc. Lead-cored sanded bitumen DPC's may be preferable to avoid slip planes.

## 7 Windows and Doors

### 7.1 Leaded Glazing and Zinc Camed Glazing

1. Before beginning a repair to leaded or zinc camed windows, a report should be commissioned from a glass specialist to schedule the works required to bring the window construction into a good state of repair. This report should be sufficiently detailed to give an outline of the works proposed with the associated costs and give a brief outline of the importance of the glazing and identify any unique attributes that may require more in-depth investigation.

### 7.2 Leaded Glass Protection

1. Remove any inappropriate window protection and make new window protection in woven or welded non-ferrous or stainless steel wire mesh with a pitch and strength designed to meet the risk. Meshes should be made by a skilled wireworker to accurate templates.
2. Protection should follow the glass line and not cover stone tracery. It should be fixed using non-ferrous fixings into joints in the masonry in, back from the outside stone face but suitably spaced away from the glass to give maximum protection.
3. To increase protection in highly vulnerable areas, consider safety glass or where weight is an issue, clear polycarbonate. Clear sheet material should be fitted behind mesh but not against the leaded glass and be

installed with adequate ventilation at top and bottom. Clear sheet used without mesh gives unsightly reflections.

### 7.3 Joinery

1. Windows should be overhauled and repaired wherever possible by carefully splicing in new matching timber to follow accurately the original profile using traditional techniques and glue.
2. Where new replacement windows are required they should be single glazed and manufactured from matching timber sections accurately following the original design and profiles.
3. Reuse original ironmongery where possible. Where necessary select historically appropriate new ironmongery that meets the modern requirements of security and exit, yet is of an appropriate style and quality. Use only slot headed screws.

### 7.4 Original Glass

1. Original historic glass (crown, cylinder, plate, patterned or coloured glass or glass with seeds, reams or other notable impurities) should be saved for re-use. The use of a proprietary putty lamp can be valuable in removing old putty without damaging the glass.
2. Modern cylinder, Vauxhall, crown, float glass or horticultural glass may

be used for replacements depending on the original glass type to be found on the building. These may vary on a single building or elevation.

3. Match glass type to original examples on site or to date of building construction. Any patterns established as a result of evolution of the building should be respected.

### **7.5 Secondary Glazing (not generally eligible for grant)**

1. Secondary glazing may be fitted on the inside but this should follow the glazing divisions of the window and not foul or damage any shutters or the opening of the window.

2. Secondary glazing is not grant eligible unless an historic installation.

### **7.6 Abutment Pointing**

The joint between joinery and masonry is to be pointed with either of the following:

1. A traditional site mixed mastic comprising burnt mastic sand and boiled linseed oil placed against a suitable backing stop.

or

2. Lime mortar pointing placed against a suitable backing stop. Where a building is harled/rendered the use of lime mortar to fill this joint will allow the harl/render to be brought up to the joinery. This should be placed after joinery fascias have been decorated to ensure good protection of the fascia.

3. For late twentieth century metal windows that are a feature of the original design, polysulphide mastic may be used. Proprietary glazing putty is available for glazing twentieth century metal windows.

### **7.7 Painting of external joinery**

1. Paint external joinery, using traditional methods and using good quality oil-based paint including preparation as recommended in the paint manufacturer's written instructions.

2. Ensure paint is not spread onto adjacent masonry.

3. Window colour to be as original from scrapes, or off-white. Avoid brilliant white for pre-1920 buildings.

4. Consider the use of traditional lead paints on grade "A" listed buildings.

## 8 Internal

### 8.1 Plaster repairs

1. Plaster should be in lime plaster to match the original as determined by analysis of the existing.
2. In rooms where lath and plaster exists, repairs should be carried out in matching materials.
3. Repairs to rooms or buildings where the existing lath is lost entirely, may be undertaken in modern materials but this is not grant eligible.

### 8.2 Joinery work repairs

1. Carefully record, using profile gauges, the original size and form of original internal joinery.
2. Where it is necessary to repair or replace internal joinery sections, profile new timber of suitable species and quality to the original profile, cut and fix in accordance with best practice.

### 8.3 Rot works

1. Locate the reason for moisture getting into the fabric and successfully prevent this happening. Remove rot and, where time permits, allow fabric to dry out
2. Seek expert advice on methods of treatment adopting green principles wherever possible.
3. Carefully patch in new pre-treated timbers to match original and make good internal finishes to match original

### 8.4 Decoration (not generally eligible for grant)

1. Decoration is only grant eligible where it forms part of a historically significant decorative scheme. The proposed inclusion of a decorated paint scheme should be agreed with Historic Scotland in advance.
2. Conduct a historically researched study of the interior. The colour scheme should meticulously follow the research findings in colour, decoration, and paint type.
3. Where interiors are of recognised historic significance and are sensitive to UV light, avoid using UV film on historic window glass as this cannot be removed easily without risk of damage to the glass. Use UV blinds where possible. Blinds may be grant eligible but should be discussed with Historic Scotland in advance.

### 8.5 Services Installations

1. Heating installations within the envelope of the building will be eligible for grant at 25% of the grant-eligible cost.
2. To reduce the risk of electrical fires, ensure that the scheme of works includes testing of the electrical installation and any upgrading found to be necessary as a result of the testing. This is not an historic repair and therefore not grant eligible.
3. In exceptional circumstances refurbishment of decorative electrical fittings may attract grant for repairs but this should be agreed with Historic Scotland in advance.

## 9 Ironwork

The identification of the form of ironwork to be repaired i.e. mild steel, cast iron or wrought iron should be made at an early stage to guide subsequent works.

### 9.1 Cast iron

1. Each project should be assessed and the most appropriate repair technique(s) employed given the application, materials and historic importance.
2. In certain circumstances cast iron may be welded by specialists using high nickel electrodes, or brazed using aluminium bronze. Plate repairs or pinning by drilling and tapping adjoining components may also be appropriate. Cold metal stitching may also be feasible.
3. Re-casting missing components using traditional techniques might also be considered. Design and quality should match existing.

### 9.2 Wrought Iron

1. Wrought iron should be removed for repair by proven experts in this field.
2. To correctly repair wrought iron, use only suitable quality recycled wrought iron. Repairing in wrought iron is preferable to replacing in steel.

3. Pure iron has no superior corrosion resistance to steel and should not be used in preference to wrought iron for historically correct repairs.

### 9.3 Decorative and other Metal Work Repair

1. Weathervanes, roof ventilation louvres, solum ventilators, railings, gates or other historic architectural ferramenta may be considered for repair as part of the eligible works.
2. Flame cleaning; needle gunning or blast cleaning may be appropriate. Chemical cleaning should be avoided, particularly for cast iron due to the porosity of the material.
3. Weathervanes may be gilded.

### 9.4 Metalwork Protection.

1. Generally new steel (not cast or wrought iron) should be galvanised following manufacture.
2. Suitable long life paint treatments for ironwork, such as zinc rich primers, and micaceous iron oxide build coats should be considered for use and applied in accordance with manufacturers' written instructions. Hard shell epoxy paints should not be used on cast iron; dry film thicknesses should strike a balance between protection and loss of detail.

## 10 Other

### 10.1 Non Grant Eligible Works

1. The application should include a list of work intended but which does not form part of the grant eligible repair scheme, together with an indication of costs separately identified from the historic repair work, eg electrical work, ramps, new WCs or other alterations.

### 10.2 Priorities or Phasing

1. The remedial works should be undertaken in one phase but additional phases may be considered. The cost of the complete works should be estimated at the outset and the content of each phase should be priced and agreed in advance with Historic Scotland.

### 10.3 Unforeseen Works

1. It is accepted that unforeseen work may sometimes be necessary. Any such work should be clearly identified, costed and agreed with Historic Scotland before being included in the works.

### 10.4 Sustainability Issues

1. Those involved in specification are requested to satisfy themselves that the products specified or used in the works will not endanger the health of the consumers or others, will not cause significant damage to the environment during manufacture, use, or disposal, will not consume a disproportionate amount of energy during manufacture, use, or disposal, will not cause unnecessary waste because of over-packaging or because of an unusually short shelf life, or will not contain materials derived from threatened species or threatened environments.

2. All timber for the works to be supplied with written confirmation that it is sustainably produced. Large section hardwood timbers to come with the appropriate chain of custody. Historic Scotland may wish to have sight of such confirmation.

3. Specifiers are encouraged to ensure that protected wildlife (eg bats) is not adversely affected by the repair work.

## Bibliography and Further Information

### Historic Scotland, “The Repair of Historic Buildings in Scotland”

#### Historic Scotland, Technical Advice Notes (TANS)

1. TAN 1, Preparation and Use of Lime Mortars Revised 2003]
2. TAN 2, Conservation of Plasterwork
3. TAN 4, Thatch and Thatching Techniques
4. TAN 6, Earth Structures and Construction in Scotland
5. TAN 13, The Archaeology of Scottish Thatch
6. TAN 15, External Lime Coatings on Traditional Buildings
7. TAN 20, Corrosion in Masonry-Clad Early Twentieth Century Buildings
8. TAN 24, The Environmental Control of Dry Rot
9. TAN 26, Care and Conservation of 17th Century Plasterwork in Scotland
10. TAN 29, Corrugated Iron and Other Ferrous Cladding
11. TAN 30, Scottish Turf Construction

### Historic Scotland, Guide for Practitioners

1. The Conservation of Timber Sash and Case Windows
2. Scottish Iron Structures

#### Historic Scotland/English Heritage

1. Timber Decay in Buildings – The Conservation Approach to Treatment

#### English Heritage,

1. Lightning Protection for Churches

#### Other useful Contacts

1. Scottish Lime Centre Trust, Charleston, Fife: for advice on lime mortar mixes
2. British Geological Survey, Edinburgh: for advice on selection of building stone
3. Historic Scotland’s Building Conservation Register: for access to a list of consultants, contractors and suppliers.
4. Historic Scotland’s reference library of ironwork pattern books.



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