INFORM

THATCHED ROOFS

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

Fig. 1 Reed-thatched houses, Perthshire.

Fig. 2 Marram-thatched cottage, Western Isles.

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Thatched roofs were once a familiar sight in Scotland, but their numbers have declined since the mid-19th century as other more durable roofing materials became available. In some areas only one or two thatched roofs now survive. The majority of thatched buildings in Scotland are listed, recognising their special architectural or historic interest. Thatch is closely associated with traditionally constructed and vernacular buildings, but those that survive in anything like their original form are now rare.

Thatched buildings vary in style, from architect-designed Arts and Craft style houses, such as those in Fortingall, Perthshire (Fig. 1) to the straw and marram-thatched cottages characteristic of the Hebrides (Fig. 2). Conserving what thatch survives is a challenge. This INFORM guide identifies the key issues in the repair and maintenance of thatched roofs in Scotland and offers guidance on where and when to seek further advice.

The importance of thatched roofs

The first step when planning work is to identify the significance of the building element and what contributes to its special interest. With thatched roofs this is most often the thatching materials, the roof structure beneath, the style of thatching, and features such as fixing methods and chimney details. The building's setting and how it relates to other structures can also contribute to its significance. Any loss or alteration to an old thatched roof will normally have an impact on a building's significance. In a few cases thatched buildings may have a close historical association with people or events such as Burns Cottage in Alloway (Fig. 3) or Old Leanach Cottage in Culloden (Fig. 4), both cared for by the National Trust for Scotland.

Thatch can survive under later roofing materials such as corrugated iron or other sheet roofs, which will often be of historic interest themselves. In such cases the roofs will normally have a high architectural and archaeological value, and should be retained and protected while advice is sought from the local authority and Historic Environment Scotland (Fig. 5).

Fig. 3 Burns Cottage, Alloway, thatched in reed.

Thatching materials

Thatch tends to be locally distinctive, with variations found even in relatively small geographical areas. Materials used for thatching roofs in Scotland were once extremely diverse including oat and barley straw, rye, reed, heather, bracken, broom, rushes and marram grass (grown on sand dunes). Materials chosen for repair and re-thatching should be locally sourced wherever possible, and consistent with local traditions.

Marram grass is an ideal thatching material for parts of the Hebrides, where a significant number of thatched buildings survive. It can withstand strong winds and scouring from wind-blown sand. Marram grass is pliable enough to allow a swept ridge, which minimises wind-lift. In other areas, water reed, heather and cereal straw were also common and can still be sourced, although the traditional varieties may be more difficult to find. Errol reed, traditionally used in Tayside and Fife, is the most appropriate available material for areas with a history of thatching in reed. It is not generally suitable as a replacement for other types of thatch such as heather, marram or straw.

Fig. 4 Old Leanach Cottage, Culloden, thatched in heather.

Fig. 5 Bracken and heather thatch surviving under corrugated iron, Kingussie.

Fig. 6 Thatching a Hebridean blackhouse roof with turves under marram.

Imported materials are not naturally adapted to the climate, tend to look out of place and may perform less well than local materials. Where availability of specific thatch types has changed, alternative local materials or sources should be identified. Local characteristic details of application and fixing should be specified.

Base layer

Thatched roofs typically have two layers. The base layer is formed to support the principal thatching material, prevent the thatch falling into the interior, and provide additional protection to the roof structure from water ingress. Depending on location, turves (laid grass-side down) were often used (Fig. 6) but other materials such as wattle or timber planks are also found. In Orkney, a system of straw or heather rope 'simmens' were made, and wound tightly over the roof structure to form a base for the thatching materials. The base layer is usually the oldest part of a thatched roof and can contain evidence of the building's development. It should be retained during re-thatching, but where it is disturbed there is an opportunity for recording and analysis.

Roof structure

The roof structure underneath thatch is as important as the roof covering. In vernacular buildings early structures such as cruck-frames, or roofs constructed from driftwood or reclaimed timber, can tell us about the history of the buildings and those who lived in and constructed them. Where thatch deteriorates, the roof structure becomes at risk from decay and collapse. Keeping a weather-proof roof covering through maintenance or, where appropriate, secondary protection (such as corrugated iron) is essential to the protection of traditional roof structures under thatch.

Ridge

The ridge detail is closely linked to the main roof covering as the thatching material will influence the way the ridge is finished. Marram grass or some types of straw thatch are suited to the swept ridge, where the material is laid continuously over the apex of the roof (Fig. 2). This gives rise to the characteristic low, rounded appearance of roofs in the Hebrides and Northern Isles. Reed is a much stiffer material and requires a separate ridge, either in straw, sedge, turf or

Fig. 7 Timber ridge detail, characteristic of Ayrshire.

Fig. 8 Rolled skew detail, Scottish Borders.

sometimes cast concrete or timber (Fig. 7). It is difficult to replicate the style of one material using a different material and the choice of ridge detail will often indicate the type of thatch used. Every effort should be made to source appropriate thatching materials to enable the traditional ridge detail to be replicated. Chimney details should be retained.

Edge details

Thatch lends itself to swept valleys and hips, detailed to avoid vulnerable junctions. Common areas of weakness in thatched roofs are the skew and verge, where the thatch meets a gable or abuts an adjoining building. A sufficient depth of well-laid thatch should prevent water ingress. A rolled skew (Fig. 8), bargeboard (Fig. 9) or turf skew over crowsteps are all traditional details to shed water away from the junction. Where flashings or mortar fillets are added to provide additional protection they should be discreetly detailed (Fig. 10 and Fig. 11). More modern details include overhanging verges (Fig. 12) and a lead or zinc flashing (Fig. 13). There is considerable variety in how detailing has developed over time, but traditional edge

Fig. 9 Bargeboard detail, Perth and Kinross.

Fig. 10 Thatch with cement skew fillet, Fife.

Fig. 11 Discreet lead flashing detail at chimney abutment, Western Isles.

Fig. 12 Overhanging verge detail, Angus.

and junction details should be replicated or reinstated wherever possible to preserve or enhance the character of the thatched roof.

Fixing methods

The thatching material influences the fixing method. Reed is traditionally fixed with hazel spars, while heather is 'stitched' in place with twine and secured with hazel rods (sways) or tied on with twisted rope. Straw and marram-thatched roofs in the Hebrides were fixed using coir rope or old fishing net, which is wound over the roof and weighted down with field stones. Nowadays chicken-wire or other netting is used to secure the thatch, but the tradition of weighting the thatch with stones continues. Many different materials appear, often whatever is conveniently found. Retaining unusual detailing contributes to the rich variety of thatched roofs and tells a story of rural resourcefulness (Fig. 14).

Fig. 13 Timber and lead verge detail, Perth and Kinross.

Fig. 14 Thatched cottage fixed with metal and timber poles, and weighted with field stones, Kyle, Highlands.

Fig 15. Weights and fixings should be regularly checked and secured.

Repair and maintenance

Being built of organic materials, a thatched house will rapidly deteriorate unless the roof is kept in good repair. Regular repair and maintenance of the roof should be carried out, which may include top-dressing, checking and securing fixings, checking for bird and rodent damage and removing debris (Fig.15). The ridge is often the most vulnerable part, requiring more frequent attention, as it is critical to protecting the main thatch. Thatch should be inspected after high winds or storms to check for loose thatch and areas where water may penetrate. Vegetation will naturally colonise on thatch, so moss, leaves and invasive plants should be removed (Fig. 16).

Owners may do some work themselves, particularly reactive maintenance such as re-fixing loose weights or netting, but generally an experienced thatcher will be required to undertake repairs. Continued maintenance and phased repair/ renewal avoids the need for wholesale re-thatching, which is expensive, time consuming and requires large amounts of thatching materials. It may be cost effective to consider collaborating with neighbours on repairs and maintenance if there are a number of thatched buildings of the same type in one area. The local planning authority and HES can advise on appropriate works for thatched roofs, but the starting point should normally be like-for-like repairs with matching details and minimal loss of fabric. Listed building consent may be required for works undertaken on listed properties.

Heating and ventilation

Thatched buildings should be kept well ventilated and heated to keep the thatch dry and prevent rot. Where the building is not continuously occupied, adequate heating and ventilation should be provided to prevent damp and deterioration. Keeping thatch dry and in good condition will optimise its thermal properties. Where the thatch is thin or lacks a base layer, additional insulation at ceiling level is usually the best option if required. It is not generally advisable to insulate directly below the thatch (i.e. to create a warm roof), as the cold, restricted space created above can be susceptible to condensation. Eaves ventilation

Fig 16. Moss and vegetation will eventually degrade the thatch if it is allowed to accumulate.

must be maintained. When used correctly thatch is one of the best insulators of any roofing material, and offers excellent soundproofing.

Fire

A significant number of fires in thatched buildings are linked to wood burning stoves. To minimise risk, a competent installer should be used and the flue and chimney should always be lined, regularly swept and maintained. A raised chimney height (up to 1.8 metres) above the thatch is advised but this may be disproportionate for smaller buildings. Chimneys can be raised by adding additional courses of masonry or a taller chimney pot where appropriate. Where the building is listed advice should be sought from the local authority.

Further protection can be achieved using fire-resistant materials underneath thatch. If the building is being fully re-roofed, fire board can be installed between the rafters. This is only possible where the rafters are regular, and will not be suitable for older roofs built with materials such as larch poles and driftwood. More generally, fire separation should be provided at ceiling level, the attic space should be kept clear, and a smoke alarm installed. Unless ventilation is provided, the use of impermeable barriers below the thatch is not recommended as it may cause the thatch to rot.

Finding a thatcher

There are a several skilled working thatchers in Scotland, and they are often willing to travel to carry out work. Thatchers may have competence in several materials, but tend to have a specialism. It is important to appoint someone who is able to source and work with the local materials. Local planning authorities and HES can give advice on finding the right craftsperson and sourcing materials for thatching.

The thatching tradition in Scotland is different from that of England where long straw, water reed and combed wheat reed are more commonly found. Due to issues with local skills and materials it is not uncommon to see the local vernacular in Scotland replaced with an English-style thatch, sometimes inappropriately detailed. These styles, however accomplished, lack authenticity in the rural landscape. Wherever possible, employing locally-trained thatchers will ensure the most authentic finish, and build capacity for future repair and maintenance work.

Grant funding

HES can provide grant support for thatched building owners in Scotland who are considering repair of their property. The HES thatched buildings maintenance grant is part of the larger Historic Environment Support Fund, which enables a broader variety of activities to be financially supported, including training and materials sourcing.

Conclusion

Surviving thatched roofs are rare in Scotland, and their numbers have declined in recent years. Maintaining and preserving those that survive contributes to the conservation of the vernacular built heritage of Scotland. Choosing the right materials and details, carrying out regular inspections and repairs, and seeking advice and support when needed is key to avoiding extensive and costly repairs or risking the loss of traditional thatched roofs.

Further reading

Holden, T., (1998) *The Archaeology of Scottish Thatch*, Historic Scotland Technical Advice Note 13

Holden, T., (2010) 'Thatch' in *Building Scotland*, Ed. Moses Jenkins, Historic Scotland

Managing Change in the Historic Environment: Roofs
W: www.historicenvironment.scot/managing-change-roofs

Scotland's Listed Buildings (2016)
W: www.historicenvironment.scot/scotlands-listed-buildings

Society for the Protection of Ancient Buildings (SPAB) Scotland (2016) *A Survey of Thatched Buildings in Scotland*, Historic Environment Scotland

Walker, B., and McGregor, C., and Stark, G., (1996) *Thatch and Thatching Techniques: a guide to conserving Scottish thatching traditions*, Historic Scotland Technical Advice Note 4

Walker, B. and McGregor, C. (1996) *The Hebridean Blackhouse*, Historic Scotland Technical Advice Note 5

Further information

Thatch building advice
W: www.engineshed.scot/building-advice

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E: technicalresearch@hes.scot

Casework and designations
T: 0131 668 8716
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Grants
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SPAB (Scotland)
W: www.spab.org.uk/spab-scotland
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The Scottish Vernacular Buildings Working Group
W: www.svbwg.org.uk

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