



Thatch and thatching: *a guidance note*



ENGLISH HERITAGE

SUMMARY

Thatch is an ancient roofing material which must continue to be used in ways that will sustain its rich traditions. English Heritage has been concerned at the lack of an agreed history, and at the difficulty which the planning system has in conserving these traditions.

Only very recently has it been realised that the thatch on some roofs is medieval. Study of these and more recent roofs has confirmed that most English thatching has always been in straw, and that the three traditions prevalent today (water reed, combed wheat reed and long straw) are all valid and historic methods of preparation and application.

Each method or style has its qualities and may be regarded as a local tradition to be cherished. Broad generalisations on longevity are unhelpful or even wrong, and should not obscure this objective. In any case, conservation policy suggests that thatch should be considered more often for repair, rather than for replacement: this was the normal practice in the past.

Local authorities should control the loss of thatch, when a change of material or style is suggested, by Listed Building Consent. The onus should be placed on the applicant to explain the need for change - in line with general policy - but in turn the local authority's policy should be based on a thorough knowledge of local traditions of thatching. The policy should aim to recognise regional diversity, sustain materials and techniques, conserve the character of an area and protect material of archaeological interest. These factors should also be taken into account where grant is in question, so that local traditions are fully understood and sustained.

Some local authorities are taking a sensible view of fire risks in thatch, and this is paving the way for new buildings to be roofed in this highly sustainable material.

English Heritage will foster these objectives by:

- encouraging research into local traditions and practice
- working for the coalescence of the industry into one professional body
- seeking to improve the indigenous production of materials
- monitoring research and the dissemination of information on thatching

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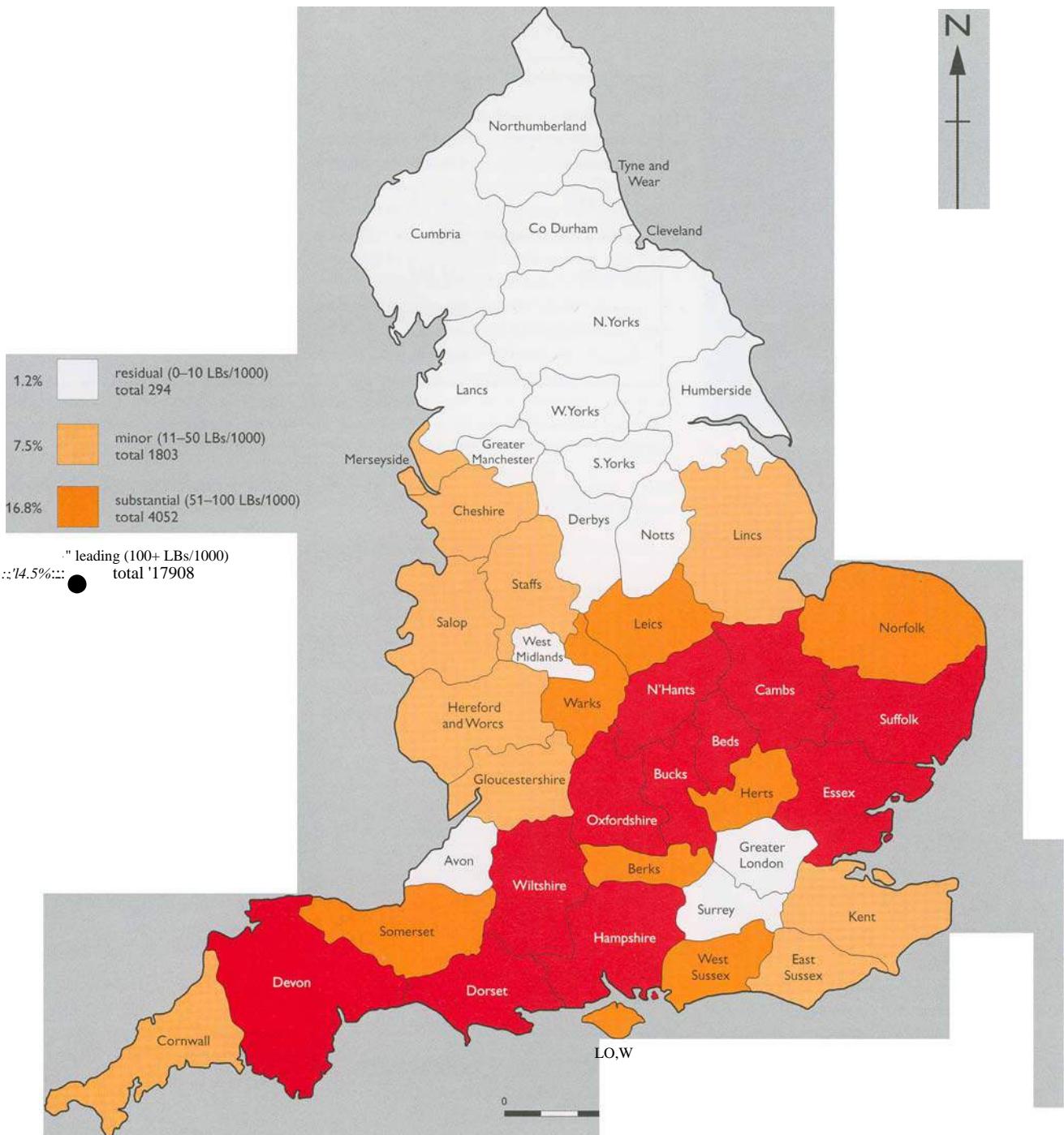


Fig 1 Listed thatched buildings as a proportion of the total of listed buildings for each county (counties as in 1981)

Introduction

Thatch, the covering of a roof with plant stems, is one of the most ancient of roof coverings, and to many the most characteristic of all vernacular materials. Its survival into the third millennium is not assured. Thatch is an organic material, and therefore truly sustainable. This ought to give it a great future as finite resources become scarcer, but its organic character has also rendered thatch peculiarly vulnerable to adverse environmental factors. Difficulties with supply and application have bedevilled thatch for decades. Severe economic and agrarian

pressure has been part of the picture for two hundred years. Central to the current difficulties is the question of how far the methods and materials of thatching should be influenced by the concerns of conservation or controlled by the planning process.

The great majority of thatchers provide an excellent service to their clients and to the heritage, and their expertise is justly admired. However, thatching is in a unique position as an industry or craft: the thatcher exercises a degree of independence unknown to the other building trades, and information about thatching is often subjectively presented.

By contrast with most topics in the world of building conservation, thatch has had no agreed history, there is no consensus on the scope of conservation, and standards and practice are difficult for lay folk to assess. There are no beneficiaries from the current confusion - certainly not thatchers, who find wide variations in the attitudes of local authorities, nor local authorities who often feel that the planning system lacks the tools to operate in this area, and least of all the owners of thatched buildings (whether listed or in conservation areas), who often cannot predict when or in what form control will affect them.

The scope of this guidance

English Heritage is the lead body in England in the field of historic building conservation. It has undertaken research into the history of thatch, summarised below. The publication of both this research and the present guidance note are intended to be helpful to all those concerned with thatch and thatching.

- local authorities, both for the compilation of Development Plans and for general practice in relation to listed buildings and conservation areas
- grant-giving bodies concerned with sustaining the historic environment
- thatchers, to show how the industry fits into the conservation of the built heritage and to provide a background to the implementation of local and national policy
- other professionals concerned with the built environment, who may be responsible for works involving thatching
- owners of thatched buildings, to assist them in understanding their rights and responsibilities.

This leaflet is not, however, a manual of thatching. It is intended simply as a guide to the conservation issues for all those who are concerned with thatching, and insofar as it touches on standards and techniques the advice given is only general. Moreover, practices vary across the country and what applies in one area may not apply in another. Further advice on local thatching practices may be sought from the local planning authority or from the Master Thatchers' Association in the area.

The technical terms used may be found in the Glossary, Appendix 4.

History of thatch

Until recently the history of thatch had never been professionally studied, and this has allowed a proliferation of theories about the origin and legitimacy of the different forms. Three major works of research have been commissioned by English Heritage, starting with the earliest intact evidence in buildings and taking the story up to the present day. These studies have now been published as *Smoke-blackened thatch* (Letts, 1999) and *Thatch* (two volumes: Moir and Letts, 1999, and Cox and Letts, 2000). Only a summary can be given here.

	1800	1862–3	1960	% decline 1800 – 1862–3	% decline 1862–3 – 1960
South west	411,805	150,069	9,789	63.5	93.5
South east	26,568	9,695	556	63.5	94.3
South (inc East Anglia)	330,318	573,544	23,114	(+42.4)	95.9
Midlands	128,909	95,209	1,173	26.1	98.8
North	59,646	13,344	30	77.6	99.8
Totals	957,246	841,861	34,662		

(Sources of 1800 and 1862–3 data: Sun Life and Royal Exchange insurance policies (unpublished); sources of 1960 data: returns to the Rural Industries Bureau questionnaire on thatched properties (unpublished). Figures shown for 1960 derive from an incomplete survey.)

Table 1 Estimated number of thatched buildings by region 1800, 1862–3 and 1960. Note that the 1960 survey is known to have been incomplete.

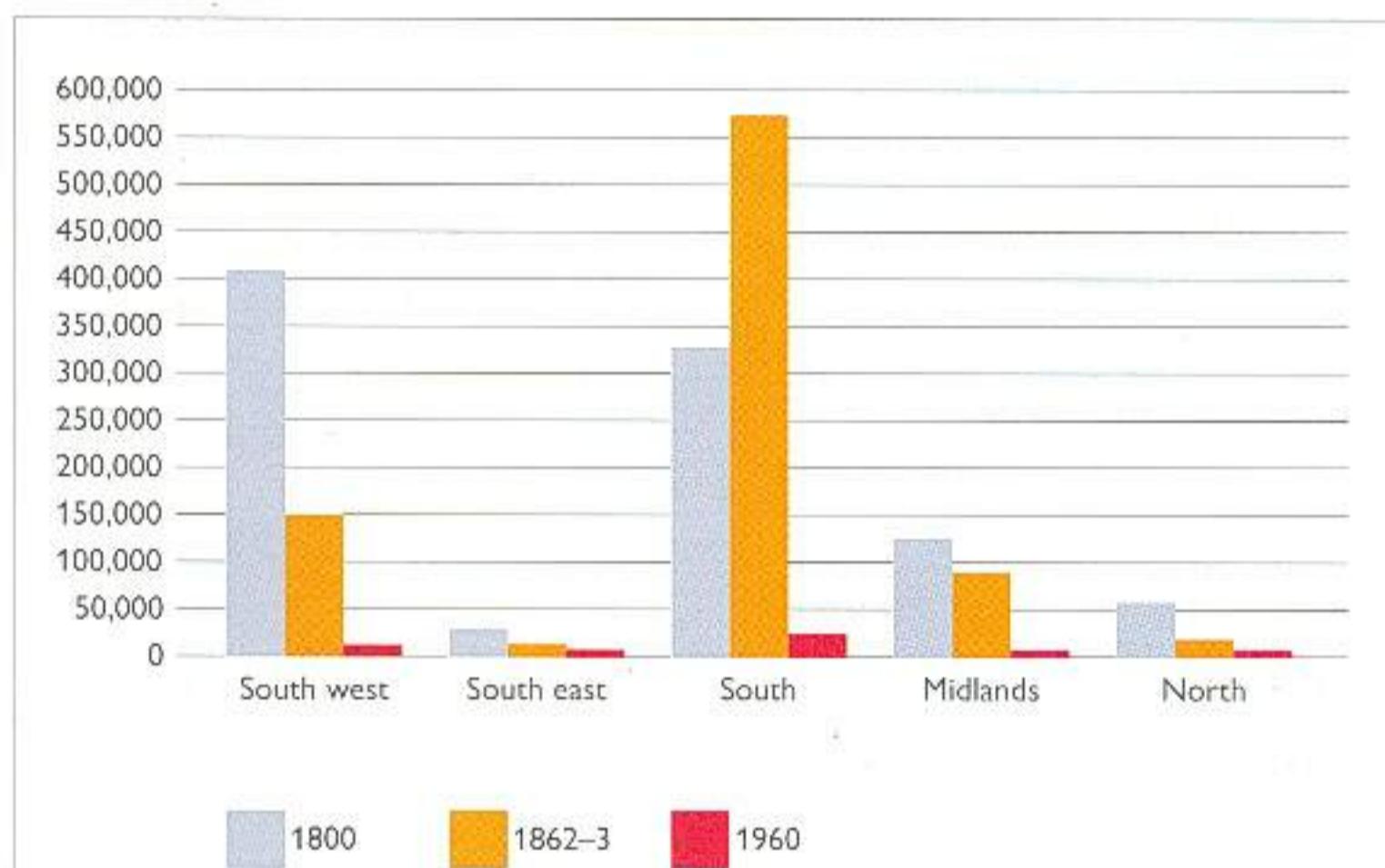


Fig 2 Estimated number of thatched buildings by region: 1800, 1862–3 and 1960



Fig 3 Smoke-blackened roofspace. In this photograph the contrast is clear between the sooting of the earlier portion of the roofspace (left), and the later part (right) which was built after the house ceased to have an open fire. (Photograph copyright © John B Letts)

Smoke-blackened thatch

Some few hundred buildings survive in which the underside of the thatch dates from the Middle Ages, as demonstrated by the coating of soot from open fires. These roofs provide invaluable insights into the agriculture and building technology of their time, as well as providing examples of earlier 'land races' of cereals (not produced by selective breeding). This study shows that straw thatching was the norm in the counties from which any evidence survives, and that the straw was used with great skill to exploit its characteristics of length and resilience. The examples which could be studied, clearly only a proportion of the surviving resource, are notably concentrated in Devon, where there has been continuity in the practice of overcoating old roofs.

Evolution and distribution of thatch, 1790 to the present day

The other two studies cover a continuous period up to the present. The physical evidence has also been drawn upon, but documentary sources play a greater role, beginning with the series of county Reports to the Board of Agriculture which detail practice in the first years of the nineteenth century. Again it is clear that straw thatching was the norm throughout this period, which begins before threshing machines had had any influence on thatching practice. The modern distinction between combed wheat reed and long straw (see Figs 4 and 5, and pages 7-8) is reflected in thatching practice from the beginning of the period and there is no reason to think it was then new. It evidently

had its origins in the management of the resource. The use of combed wheat reed reflected the constant shortage of wheat straw in the wetter climate of the west, which had always encouraged a sparing use of the raw material. Over the rest of southern England, East Anglia and the Midlands the comparative abundance of straw encouraged a different approach to its processing, and the resulting method of application is today called long straw. It is certain, although the evidence is elusive, that a form of combed wheat reed thatching was practised outside the West Country on occasion, but this appears to have declined during the nineteenth century when the straw acreage was at its height. Surprisingly, the overall number of thatched buildings in the south of England (though not in the south west) actually rose between 1800 and 1862, but the general trend was one of steep decline, especially in the north. Water reed thatching was confined to a few distinct coastal areas and to the Norfolk Broads, as apparently had always been the case.

In the early twentieth century a handful of East Anglian firms of thatchers made water reed the best known of thatching materials to the architectural world, but the general pattern of use remained broadly as it had been before the Agricultural Depression of the 1870s despite a serious contraction in the arable acreage. This apparent stability stood in contrast to an immense drop in the number of thatched buildings, registered by the Rural Industries Bureau survey of 1960 (see Fig 2 above). Since the Second World War, however, official interest in sustaining

thatching has led to the eastward spread of combed wheat reed thatching and also to the expansion of water reed thatching, usually drawing on foreign supplies of reed. These changes prompted, for the first time, professional organisation within thatching. Today, thatching remains the province of individuals or small firms. Contrary to what some experts thought as recently as 1970, it has not disappeared and about 24,000 listed buildings are thatched (see Fig 1). The absolute decline in numbers has been halted by a combination of planning controls with new private investment in the houses of the countryside.

Types of thatch

What follows is a description of the three thatch types found commonly today.

To itemise them creates a danger that the differences between thatch types may be thought less important than the characteristics which separate thatch from other roofing materials. All three types employ plant stems laid so that the stems slope downwards towards the outside of the thatch layer. The business of the coat of thatch is to speed water from the surface as fast and as directly as possible so as to minimise, and slow down, the rotting process to which all thatch is subject. The overall pitch of the roof, the pitch of the stems within it, and the design of the roof surfaces should all contribute if possible to this end. It is particularly important for architects to heed this in designing new work (see Appendix 2).

The following brief descriptions are a



Fig 4 This long straw roof in Suffolk, with its distinctive wrapped and cut gables, is typical of the steep pitches found in east Anglia. (Photograph copyright @ Rural Development Commission)



Fig 5 By contrast, the house in Devon (background) roofed in the same material, shows the more rounded outline of a typical hipped roof thatched in combed wheat reed. The house in the foreground is thatched in water reed. (Photograph copyright @ Rural Development Commission)



Fig 6 The great barn at Wimpole, Cambridgeshire, is thatched in water reed which faithfully follows the architectural structure under the thatch.

guide to current practice in the three main types of thatch. The historical studies make clear that old thatched roofs, particularly if thatched in straw, will contain evidence for many variations of these techniques and even for the use of different materials. Documentary sources, including photographs, reveal many local traditions of form and detail. Some of these materials, such as heather, may well be due for revival. However, the present coalescence of practice on materials and methods allows us to define the three main types in such a way that, where the work is subject to planning controls, a departure from the practice described below would need to be justified by the individual circumstances of the building.

In all three cases, the material - in the form in which it reaches the roof - has a strong influence on the method and on the resulting appearance. It is often pointed out that there is also a broad variation between the treatment of roofs across England which makes generalisation about appearance more difficult than about technique. For example, the observer in

East Anglia will often see steep roofs which carry comparatively angular thatches (with even dormer windows individually gabled), whereas in the West Country the pitches are slacker and the shapes generally more rounded (Figs 4 and 5). This variety is a crucial feature of the English landscape: thatch contributes to it and the preservation of thatch is only one aspect of its protection; it serves to illustrate how significant thatch is in the 'familiar and cherished local scene' (*Planning Policy Guidance 15* paragraph 1.1).

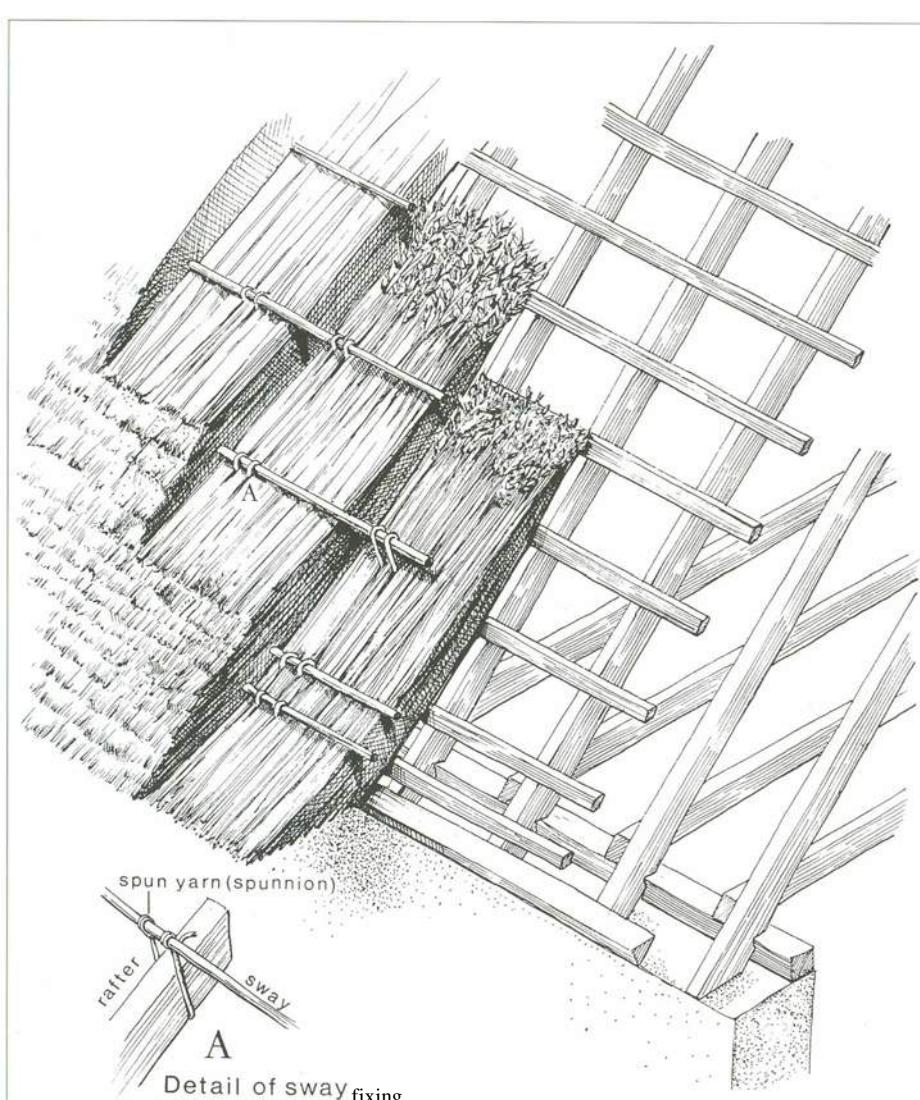


Fig 7 Water reed construction: drawing after Boardman, 1933. Today the sways are more often attached with iron hooks.

Water reed

Water reed (*Phragmites australis*) is a wetland plant which is naturally a successional species, that is it flourishes at a certain stage of an area's ecology. The existing English reed beds must therefore be maintained if they are to continue to produce reed, and indeed most of the Norfolk Broads which provide the main supply of English reed were originally man-made. Clearly in the past there were many more undrained wetlands from which reed might have been taken, but by the nineteenth century its use was confined to Norfolk and the Fens (in modern Cambridgeshire), and to pockets along the south coast such as Abbotsbury in Dorset. These supplies have not been able to satisfy modern demand and probably three-quarters of the water reed used in Britain is now imported from sources such

as France, Hungary, Turkey and the Danube delta.

The plant grows tall, up to 2.5m, and is harvested low on the stem. The resulting bunches are relatively tight and stiff and their application on the roof requires a fairly even substrate. Normally this is the timber structure of the roof, although since the 1960s water reed in the south west has sometimes been spattered on to an existing layer of thatch. The bunches are then applied to the roof in horizontal courses, and the reed is pushed up into position so that the butt ends, which face down, present an even surface. The coat is fixed by sways (horizontal rods) which are usually bound to the roof structure by iron hooks hammered into the rafters. Because water reed is not pliable, the ridging is done in another material, either sedge (*Cladium mariscus*) or straw. In most areas the ridge of a water reed roof which has been applied directly to the roof structure will stand out from the roof surface as a 'block ridge' and it is at this point only that the roof shows visible fixings in the form of external rods that hold the ridge to the main coat. The eaves show no visible fixings, the reed being secured by its concealed fixings and by its own tension against the wooden structure, which is made to splay out at this point.

The resulting appearance is extremely uniform, and except for the ridge shows entirely the butt ends of the reeds, adjusted in position to give sharp, water-shedding edges to all the planes of the roof. The coat is rarely as thick as in the straw methods and it tends to follow the lines of the roof structure beneath with great fidelity, emphasising such features as dormer windows.

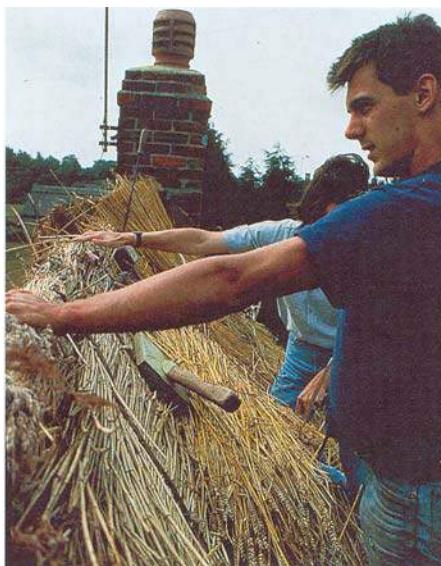


Fig 8 Forming the ridge during rethatching in combed wheat reed. The horizontal bundle used as a core for the ridge can be seen.



Fig 9 Cutting off a long straw eave



Fig 10 Combed wheat reed roof in Devon (late 1950s). (Photograph copyright @ Rural Development Commission)



Fig 11 Long straw thatch in Hampshire, of the same date as Fig 10. (Photograph copyright @ Rural Development Commission)

Combed wheat reed

This form of thatch uses cereal straw (usually wheat), despite the name. The material begins as wheat straw of one of the varieties which are now grown especially for thatching, ie for the length of their stems; harvesting for thatch is done with a reaper-binder. Modern varieties which have been bred to suit combine harvesters are not suitable for thatching. At this point the material is identical to the raw material of long straw. Combed wheat reed is produced by passing the stems through a reed comber, which removes the leaf and the grain without crushing the stems. The stems are then bound up in bunches all lying in the same direction.

Normally the existing thatch is stripped only down to a sound substrate.



Fig 12 Thatching long straw to a basecoat

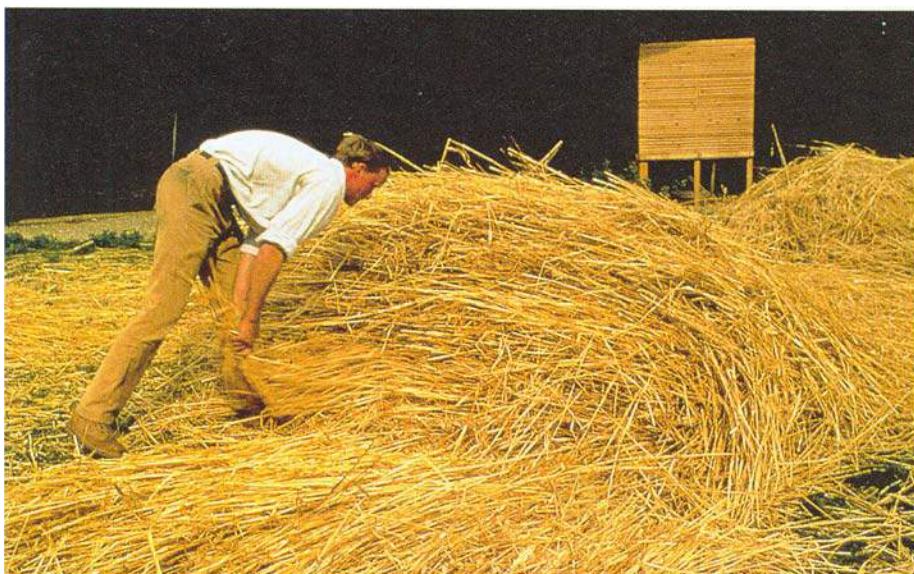


Fig 13 Drawing straw (Photograph copyright @ John B Letts)

Application to the roof then follows a similar technique to water reed thatching, with the butts of the straw downwards. The bunches are loosened on the roof and the material is dressed into place rather as water reed is. The final appearance of the edges is usually achieved by either clipping or dressing. The ridge is usually made of straw like the rest of the roof and may be flush (as until the Second World War it seems almost always to have been) although the external fixings will be evident.

In appearance a weathered combed wheat reed roof may closely resemble a water reed roof and the extent of visible fixings will be the same. Often, the accumulated layers give a more rounded appearance even to the flatter planes of a combed wheat reed roof, and the customary treatment of gables and eaves reinforces this softer impression.

Long straw

Long straw thatching was at one time the commonest form of thatching in most

parts of England. The origin of the name is disputed, but it certainly goes back long before the invention of the threshing machine, as does the method. As with combed wheat the basic material used is wheat straw, in this case threshed, although rye straw can still be found in use; sedge may be mixed in with the straw. Material of adequate length needs to be included, and the average length of stem should not be less than 700mm.

Long straw is distinguished by the preparation it receives on the ground. The threshed straw is shaken into a layered bed, without regard to the alignment of the stems as they fall. It is carefully wetted as the work of shaking out proceeds, and should then be allowed to steep: this makes the material pliable - without it straw will not form properly into yealms, the basic units of long straw thatching. The straw is drawn from the front of the bed (see Fig 13) and formed into yealms, which are compacted layers.

Long straw can be applied to rafters as new work or added to an existing secure base coat as a top coat. New work is secured to the roof frame by means of sways and thatching hooks, while a new top coat is secured by means of spars driven into the base coat, perhaps with the assistance of a twisted straw rope.

Long straw is laid into place and not dressed into place. Eaves are cut to shape,

and verges are cut or rolled, according to local custom. Surface rods are used to secure all eaves (which is a distinctive feature of this method) and the verges may have similar fixings. The ridge itself may be, and historically was, flush (as it is of the same material) although block ridges are now found in some areas. Long straw is finished by means of raking, hand plucking and occasional clipping.

Long straw is a more pliable material than either water reed or combed wheat reed and its tendency to swell slightly above its fixings gives it a somewhat more rounded and 'poured on' appearance than combed wheat reed.

Longevity

A truly vernacular material is used because it comes to hand and past experience suggests that it will work. No great longevity may be required of it, especially if its application is easy and future supplies are assured. Today, thatch seldom falls into this category: it is applied '(either to new build or to existing thatched houses) in the consciousness of relative roofing costs. While it is widely accepted that listed status prevents a fundamental change of roofing material in normal circumstances, an owner may be thinking of maximising the benefit of the work by using what is perceived, or alleged, to be the longestlasting of the thatch types. However, the issue of longevity is an extremely vexed one.

In 1960 the Rural Industries Bureau published *The Thatcher's Craft*, to date the best description of the practice of the three main thatch types outlined above. The main text, which was produced with the active involvement of the Bureau's Thatching Officers, does not venture an opinion on the longevity of the three thatches. A short introductory note, much qualified, gives the figures which are still often quoted: 'Water reed, 50 to 60 years; Combed wheat reed, 25 to 40 years; Long straw, 10 to 20 years.' At the time of these estimates, long straw was not in official favour. Straw was to sink further in official estimation after a number of serious premature failures were reported in combed wheat reed (though not in long straw) during the 1970s. Thatchers had long been aware that the growing regime of straw was crucial to its performance. The suspected reason for these failures was the enhanced use of fertilisers in growing the straw, although this was never scientifically proved. Today straw grown for thatching is

controlled in this respect, with many thatchers closing the circle by growing their own. Early failures of water reed roofs have also been recorded in recent years, but these have not as yet been traced to an overriding cause.

Many thatchers would point out that the *Thatcher's Craft* estimates were made 40 years ago, and would profoundly disagree with these figures. Most thatchers working with straw believe that its quality has greatly improved in recent years, despite the cyclical difficulties of harvests. In giving their tentative estimates, the Thatching Officers wrote that longevity was 'dependent on so many factors, for example quality of crop and materials, weather conditions, situation with regard to prevailing winds and trees, and of considerable importance whether or not a skilled thatcher is employed'. This was evidently only a short list - omitting for instance the pitch of the roof - and if restated today it would be longer. Above all, perhaps, the climate and levels of rainfall affect the life of thatch; the figures in *The Thatcher's Craft* were averaged across the country, and this generalisation strongly favoured water reed which was predominantly found in the dry East of England. In reality, examples of roofs over

fifty years old are known from all three types of thatch. Research which might determine what gave these roofs their essential health is still in its infancy. Starting with the fundamental issues, research has begun into the way in which straw takes up moisture. Even when this research is complete, no absolute figures for longevity will ever be possible.

Should an owner receive advice on changing to a particular type of thatch, the

following should be borne in mind. While the advice may have been given in good faith by the prospective thatcher or another professional adviser, it may cut across the local authority's declared policy of sustaining a local tradition of thatching, which in turn reflects national policy (see below). A local authority should always be ready to hear arguments sincerely advanced for the good of a building which by some quirk of siting or climate requires exceptional measures, but in normal cases a soundly-based policy of sustaining local thatching methods and styles should override the short-term economic arguments for importing materials or methods. In a case where a conflict of this kind arises, independent professional advice should be sought (see Appendix 1, page 16).

English Heritage's approach to repair is embodied in the following quotation from *Principles of repair* (Brereton, 1995, page 2).

In making repairs, the aim should be to match existing materials and methods of construction, in order to preserve the appearance of the building or monument, and to ensure that repairs have an appropriate life. . . New methods and techniques should only be used where they have proved themselves over a sufficient period, and where traditional alternatives cannot be identified, or where the use of modern methods enables important features to be retained. In deciding whether to adopt new methods and techniques it will be necessary to balance the degree of benefit to the building or monument in the future against any damage which may be caused to its appearance or historic integrity and fabric.

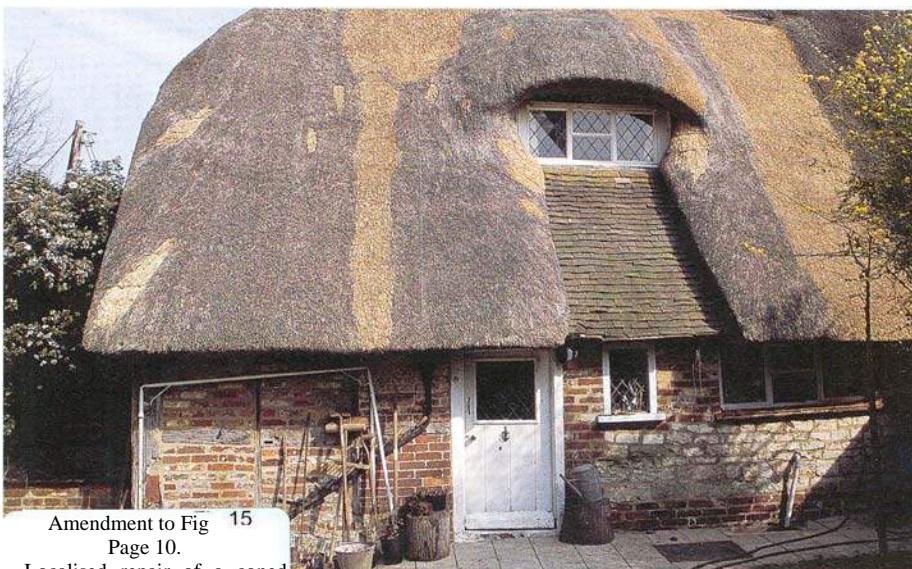
Conservation and maintenance

While it is widely assumed that water reed would be found more durable than the straw thatches in the controlled conditions of a laboratory test, the conservation debate on thatching has brought to the fore the different modes of operation of the main thatch types. Water reed thatching today frequently involves the entire loss of the existing thatch and sometimes the reformation of the underlying roof timbers, which should not be the case with the straw thatches; water reed roofs today are seldom repaired before replacement (other than by re-ridging as in the other thatch types).

In the straw thatches, by contrast, there is a tradition of localised repair by patching which can substantially extend the life of the main coat. To this day, some thatchers spend more of their time in repair than in re-coating. Although the thatcher will try to thatch a roof as evenly as possible areas of differential decay will sometimes occur. The obvious case of this is the ridge, which in all the thatches requires replacement sooner than the main coat, but valleys,



Fig 14 A mossy roof may look attractive, but usually indicates significant moisture retention. However, the moss may not be harmful.



Amendment to Fig 15
Page 10.

Localised repair of a coned wheat reed roof, indicating continuous maintenance in the old tradition.

chimney abutments, dormers and other complications of the roof form can provide opportunities for decay as can the action of birds and rodents, or casual damage. In such cases the same thatching method that was used at first can be adapted without difficulty to re-thatch a limited area. In thatches where netting is used (see Appendix 2) moss may build up under the netting and this can, if desired, be gently removed. There is as yet no agreement, however, as to whether the moss does more harm by retaining moisture than it does good by forming an extra coating to the thatch. Bear in mind that the performance of thatch is not linked intimately to its appearance, and like a much-repaired wall a roof can present a motley appearance without being inferior to a much neater-looking new job.

Complete re-thatching may be more

profitable for the thatcher, and it may be recommended in a material not previously used for reasons in which the thatcher is financially interested. In these circumstances, it may be appropriate to seek further advice, on which see Appendix 1. However there will be many instances where a relatively small repair is better for the building, and if there are any problems with supply of materials these are likely to be less for a repair than for a recoating. It is important that the full range of considerations, technical, historical and economic, is brought fairly into the equation and the roof is not condemned before its time. Thatch in its potential for small-scale repair should be seen as a material that can be conserved, despite its organic nature; it does not lie outside the realm of conservation or escape the need to justify renewal.

Building Regulations, fire

and safety

Thatch has faced a multitude of prejudices in recent years, some of which are still reflected in legislation. It is often assumed that thatched roofs are at very high risk from fire, but the insurance records argue against this. Spark arrestors used to be recommended on the assumption that thatch fires were started by sparks coming out of chimneys, but the fire risk from external sparks is now believed by the fire services to be less significant than that of wood-burning stoves. These may superheat the chimneys of thatched houses to the point where combustion can occur within the thatch layer, and care is now recommended in the use of these stoves (further notes on the treatment of chimneys are found in Appendix 2). Some safety requirements, ironically, are suspected of shortening the life of the roofs in which they have been incorporated. In particular the practice of underdrawing thatch with a rigid board or an impermeable membrane appears to have inhibited the natural movement of moisture. This practice has now been reexamined by the Building Research Establishment (BRE 1999), which has concluded that if such boarding or membrane is used, it should be kept well back from the inner face of the thatch so as to provide adequate ventilation for the thatch layer. The option of fire protection by soaking the straw or reed in fire retardant before application has attracted some advocates, but the balance of evidence seems to be against modifying the basic behaviour of the materials, which could adversely affect the roof's performance.

Despite the fear still found in some areas about fire, the potential benefits of thatch in meeting other modern concerns have become increasingly evident in recent years. Thatch is, after all, the sustainable material par excellence and its insulation properties alone should commend it for modern use. The need for the research mentioned above arose in the first instance because thatched properties are once more being built from new. It is important that this development should receive proper consideration under the Building Regulations, since in many areas thatch contributes vitally to the character of conservation areas. The long-standing requirement that a new thatched roof shall be at least 12 metres from the property boundary needs particular attention, since

its strict application would prevent new development, however desirable in itself, from following the rhythm of most village streets. The way forward must lie in the sensible assessment of the fire risk and the taking of reasonable precautions, such as minimising wiring in the roofspace and seeing that it is adequately protected. This is exemplified by the 'Dorset Model' (see Appendix 6, *Further reading*) which has been agreed by the Building Control authorities of the county in consultation with the Fire and Rescue Service.

Significant new build with thatched roofs is now to be seen in many Dorset villages and this initiative should certainly be taken up elsewhere.

It would be difficult at this juncture to summarise all the work which is going forward, but the key to safety in thatched buildings lies not in changing the behaviour of the thatch itself but in a sensible assessment of the risks, particularly those which modern life brings into old buildings.

Developing thatching policies

Both in respect of the Building Regulations, and more generally because of their planning powers, local authorities hold the key to the future of thatch. It is common ground that thatch is a distinctive feature of the English landscape and that it should be conserved as part of our built heritage. The practical challenges of conservation range from the physically specific to those which touch on the character of whole regions, and different strategies are required for each issue. The golden rule for policy formation is that a policy should be transparent, consistent, and firm, but flexible enough to acknowledge legitimate exceptions. The main concerns are set out below.

Regional diversity

As the historical surveys amply show, the diversity of thatching materials and styles is not a historical accident or the result of recent changes. The materials and the methods by which they are applied both reflect the broad geographic and economic character of their areas over time. The history of these areas will have marked them in many other ways which conservation policy aims to sustain. The survival of regional diversity in thatching is, therefore, a central aim of conservation policy in those areas where the character can be securely established. It should be possible to reconcile this aim with the expression of identity often found in an



Fig 16 A flush ridge, the treatment which would have been normal in most thatch areas until recently.

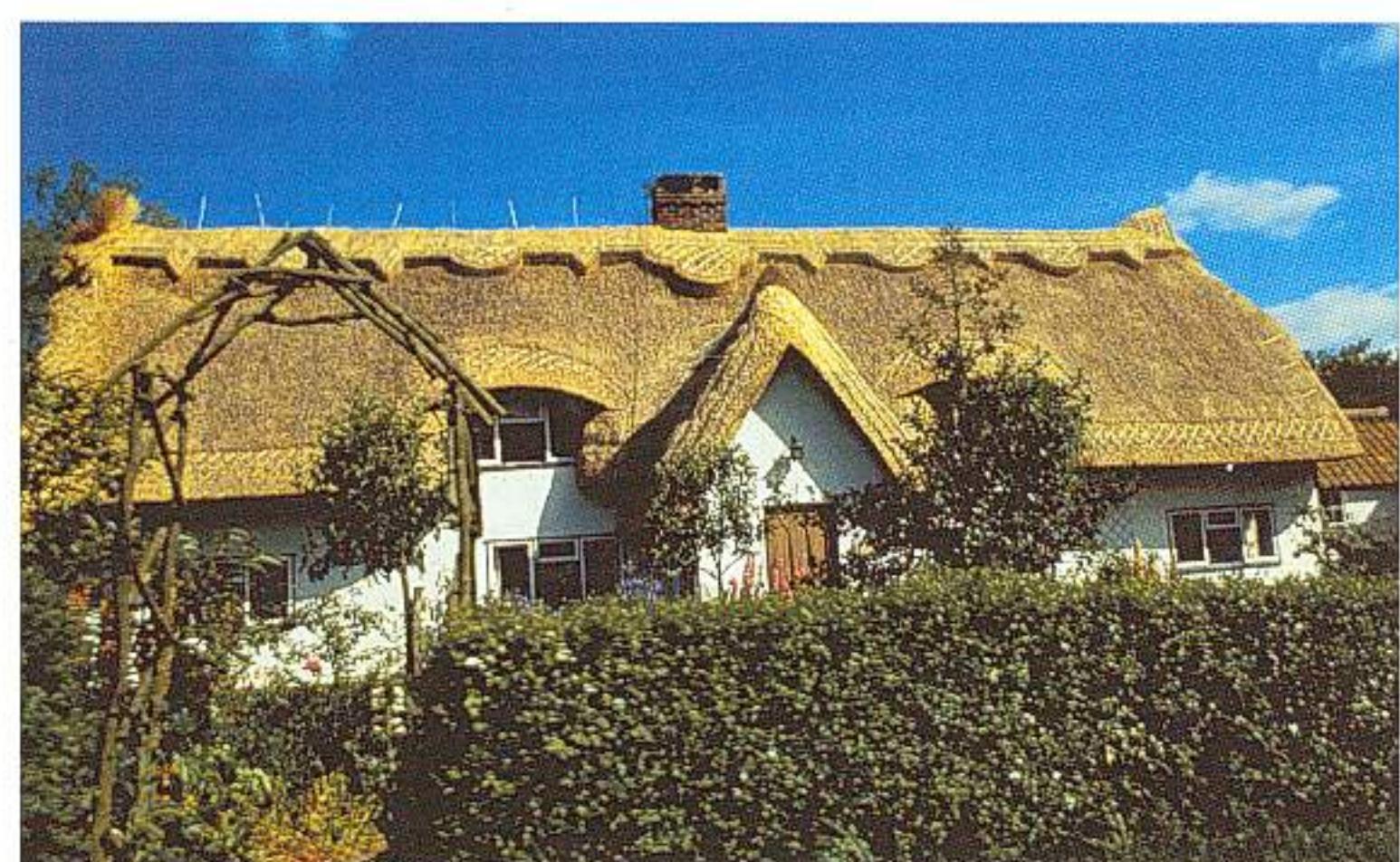


Fig 17 An elaborately patterned block ridge of the kind widely seen since the 1960s



Fig 18 Thatched houses in Dorset, built 1999



Fig 19 Stepped excavation of a roof showing the different identifiable layers. (Photograph copyright © John B Lens)

individual thatcher's work, if the thatcher works within the local tradition.

Range of materials and techniques

A remarkable abundance of materials and corresponding techniques is found in historic thatch, which teaches us how well traditional building skills are adapted to the solution of specific problems. Although the current range of materials and techniques is much more limited and derives from a gradual process of standardisation, thatchers remain unparalleled in their ability among building craftsmen to adapt their practice to the demands of the task in hand. The ability of the thatcher to solve unexpected problems of detailing by varying his techniques should be respected.

Preservation of character in listed buildings and conservation areas

It follows from the recognition of a broad continuity in the main thatching traditions that the listed buildings and conservation

areas of a given region have roofs which contribute to their historic character by exhibiting a particular type (or types) of thatch, and this may extend to details characteristic of the region or county. The practical expression of a concern for regional or local character is therefore the preservation of listed buildings and conservation areas.

Survival of archaeological material The studies in smoke-blackened thatch and into the period 1790–1940 were accompanied by pioneering archaeological sampling. This has revealed the exceptional interest which a thatched roof can hold for the history of botany and agriculture as well as for that of building. It is a paradox not yet sufficiently appreciated that a thatched roof may have a surface which is younger than most historic roofing materials, but be at base older than any of the inorganic materials, thanks to the once universal practice of stripping only the decayed material from the surface of the thatch before repair. It should be an aim of conservation policy to protect this historic or archaeological material and to ensure where necessary that it is adequately recorded.

and Country Planning (Listed Buildings and Conservation Areas) Act 1990 to control alterations and demolitions, and total demolitions of unlisted buildings in conservation areas.

As well as the Act, local authorities and those who need consent can turn for advice to *Planning Policy Guidance 15: Planning and the Historic Environment*. This sets out the general presumption in favour of the preservation of listed buildings 'except where a convincing case can be made out... for alteration or demolition'

(paragraph 3.3). From this it follows that the applicant, not the authority, is responsible for making the case should an alteration be sought (paragraph 3.4). The PPG (see box below, left) sets out the basic interpretation of this legislative framework in relation to thatch, making clear that rethatching 'should normally be done in a form of thatch traditional to the region'.

The crucial apparatus for a decision will be an understanding of the history and character of thatching in the locality concerned. The English Heritage studies (see page 4) are intended to give a national picture, and cannot substitute for a proper understanding of thatching in each district or county where it is still found. Fortunately, a number of County Councils and some District Councils are now producing thatching documents which will underpin their practice in this regard. English Heritage regards it as essential for any local authority in a thatching area to undertake this research (see Appendix 3).

Whether or not re-thatching requires Listed Building Consent will depend on the effect of the works on the character of the listed building as a building of special architectural or historic interest. Consent is not required unless this character is affected. This guidance does not seek to impose on thatching any form of control not already embodied in the legislation on listed buildings in general. As with any form of roof, changes to the shape (for example by inserting a dormer) will of course require consent. Similarly changes to the underlying structure, such as the renewal of the rafters, are likely to require consent regardless of the eventual appearance of the thatch.

Re-thatching by stripping the upper layer and replacing it in the same material and to the same method as existed before the operation began is - as with any other such operation - a repair and will not normally require consent. In the case of a roof which is thatched in water reed, repair usually involves the removal of all existing

Thatched roofs should be preserved, and consent should not be given for their replacement by different roof coverings. Where medieval thatch survives with characteristic smoke blackening on the underside, it should be retained in situ and overlaid. When roofs are re-thatched, this should normally be done in a form of thatch traditional to the region, and local ways of detailing eaves, ridges and verges should be followed. Re-thatching roofs that have lost their thatch will require a waiver of building regulations in most cases, since they may not be allowed within 12 metres of a site boundary, but local authorities should be prepared to relax this rule if it does not constitute an unacceptable fire risk to other properties.

(*Planning Policy Guidance 15, Annex C29*)

Applicants for listed building consent must be able to justify their proposals.

They will need to show why works which would affect the character of a listed building are desirable or necessary. They should provide the local planning authority with full information, to enable them to assess the likely impact of their proposals on the special architectural or historic interest of the building and on its setting (*Planning Policy Guidance 15, para. 3.4*)

The Secretary of State considers that to avoid any doubt about what is required by way of information from an applicant, authorities should set out at the beginning of discussions exactly what information they will require to enable them to consider an application for listed building consent. For all but the simplest work, this will normally include a plan to identify the building in question... and external or internal elevations affected by the proposed works. Drawings should also show the building as existing and as proposed. The inclusion of photographs, is particularly helpful (*Department of the Environment Circular 14/97 Appendix C2*)

material (although this may not be necessary). If a straw thatch is to be removed entirely (even for reasons which are uncontentious), and also if change to the material or method is proposed - even in the case of the ridge alone - English Heritage is firmly of the view that Listed Building Consent is required. The character of the building derives both from the material and from the style of thatching employed. English Heritage believes that, in normal circumstances, the three main methods (as described in *The Thatcher's Craft*) should be adhered to. The following general rules can be given:



Fig 20 Combed wheat reed being sparrowed onto a pre-existing base of straw. This technique is also used to attach water reed to a straw base. (Photograph copyright © John B Letts)

ill a proposed removal of material which is clearly of archaeological or historic importance requires consent. Smokeblackened material is usually medieval or at the latest seventeenth century, and always falls into this category, as would be the case with any other material of this age.

ill a proposed change of material between water reed and straw, or any other botanically distinct species, requires consent. This includes the covering of one material by another in the technique called 'spar-coating' (Fig 20).

ill a proposed change of material between combed wheat reed and long straw, which may be botanically identical but have been differently prepared, requires consent.

ill a proposed change of thatching method between the main types as described requires consent.

11 a proposed change of external appearance or surface configuration, such as the formation of a different ridge, requires consent.

Other specific categories may be added to protect local techniques or the evidence for their past use, for example in the use of fixings.

Clearly it would be almost impossible for a local authority to establish all the relevant facts in a reasonable timescale, if it fell to the authority to do so. It is therefore important to bear in mind that the applicant has to justify his or her proposals, which means that an owner needs to ensure that the thatcher, or any professional who may be employed, is able to explain the scope of the work fully to the

These works require Listed Building Consent:

ill the removal of material of archaeological or historic importance

ill a change of material between water reed and straw

ill a change of material between combed wheat reed and long straw

ill a change of thatching method between the main styles

ill a change of external appearance, such as forming a different ridge

Archaeological mitigation

If material in the roof is proposed for removal and it appears to be of archaeological interest (this may include evidence for local craft practices of recent date as well as historic underlayers or carpentry) this should be explained in the application for Listed Building Consent. Mitigation may be required: that is, arrangements made for any loss to be minimised either by changing the technical specification (eg to preserve a base coat) or by recording. Recording, if decided on, should be carried out by an accredited archaeologist to a brief provided or agreed by the local authority. The archaeological contractor should produce a method statement explaining how the work is to proceed. The techniques used to record a thatched roof are still being developed, and the approach taken will depend on the time available, the degree of access, the depth of material, etc. In ideal circumstances, a section face is revealed as in an archaeological excavation (Fig 19) in order to demonstrate the chronological sequence. Small samples can be very important, but in these cases it is essential to record their positions as localised stripping over generations produces different sequences at different places on one roof. Special attention should also be paid to the fixing methods used and the ways in which the various layers that survive were applied. Samples should be analysed by an archaeobotanist: they may be able to show the species used and how the materials present were harvested and processed for use as thatch. Some samples may include extraneous materials that may also be of interest, such as weeds, mosses or insects.

local authority (see box top left, page 13).

Examples of the sort of information which the local authority may need include:

- !III evidence of the nature and provenance of materials, including samples
- !III a historical report on the thatching of the building
- !III a method statement for the preparation of materials
- !III a method statement, and possibly a specification, for the thatching work (see Appendix 2)
- !III scale drawings to show the final effect, or photographs of comparable work
- !III an archaeological mitigation strategy, ie an explanation of how any reduction in the archaeological interest of the roof could be minimised, for example by special engineering techniques or by recording (see box, page 13).

It would be a most unusual case which would require all of these, and it would certainly be necessary for the authority to give its reasons for seeking them, in the context of PPG 15. Nevertheless, English

Heritage anticipates that in the majority of cases where a visual change is proposed to the appearance good scale drawings which show the extent of the change will be required. In cases where a change to the material is proposed, it will be in the interests of the applicant to open the discussion as soon as possible and in any case before a contract to supply the materials has been entered into.

The archaeological sampling of a thatched roof is explained in outline in the box (page 13, lower right). For examples of how this has worked in practice, see *Smoke-blackened thatch* and *Thatch* (Research Transactions Vol 5, Chapter 9).

Grant aid

Grant aid for thatching is available from some local authorities and, in certain circumstances, from English Heritage. Not long ago thatch was assumed to be dying on its feet and grant aid was thought to accomplish its purpose if it sustained any form of thatching. Today, a general contraction in the funds available and a growing awareness among local authorities of the pressures within thatching have led, where grants are available at all, to policies which discriminate in favour of one method or material over another. Obviously, it is fairer and easier to give out grants within a framework of policy which



Fig 21 The changing fortunes of a roof. A Hampshire public house, the Sir John Barleycorn, with long straw thatch (early 1950s)



Fig 22 How the character of a building can be affected by re-thatching. The Sir John Barleycorn some years later with a combed wheat reed roof. (Figs 21 and 22 both copyright @ the Rural Development Commission)



Fig 23 The Sir John Barleycorn, roofed in combed wheat reed with block ridge, in 1999

is based on adequate local research and an agreed definition of the local tradition or traditions. Good practice in relation to grants therefore throws further into relief the need to understand local tradition.

In particular cases it may also be necessary to establish the thatching history of the building. Normally an applicant to English Heritage will need to provide a report on the past thatching of the building, with an independent assessment of the options for re-thatching if appropriate (on this see Appendix I).

In addition to the normal processes of competitive tendering, the process of selecting a thatcher in such cases should involve submission of evidence of the qualifications and experience of the thatcher to work in the manner proposed.

Further work

Thatching has always been heavily dependent on the economic circumstances of the locality and usually on the state of agriculture. Many varieties of thatching material, such as stubble straw, have fallen out of use with the passing of the agricultural practices which made them available. Today, agricultural practice is generally not attuned to thatching. By contrast to the situation before 1940, a thatched property is likely to be owned by people less subject to the economic imperatives of the traditional countryside but anxious to achieve the best result for the building both as a thing of cultural worth and as an investment. The aim of conservation policy in relation to thatch should be to sustain the richness of English thatching by positive means as well as by control. This can be achieved in several ways:

- 1 Local authorities should publish their policies and guidance, with the research which lies behind them.

In this complex and politically charged field, owners and thatchers need to know as far as possible not only the actual policies by which applications will be judged but the reasoning behind those policies. Publication would permit policy to be fully understood by all concerned, and the heritage of thatch would be better appreciated. If the policies are adopted as supplementary planning guidance, and therefore part of the Development Plan process, they can be debated in the light of the research and the experience of all interested parties. In less formal terms,

local authorities are also in a position to advocate and promote good practice, for example in relation to archaeological recording and maintenance as opposed to full replacement.

English Heritage will encourage local authorities to evolve local policies and to undertake the necessary research along the lines indicated in Appendix 3.

- 2 Professional organisations within and without thatching should coalesce to agree and disseminate standards.

It has been calculated that only about a quarter of thatchers belong to any of the current trade organisations. There is consequently no restriction on the use of the term 'Master Thatcher' and the public cannot easily establish the bona fides of members of the industry. While the introduction and adoption of the National Vocational Qualification in thatching should substantially improve this situation, English Heritage believes that it would be to the benefit of thatch if thatchers came together in a single self-regulating body which would be generally acknowledged by the industry and capable of enforcing standards. The promotion of thatch, and of good practice within thatching, would be greatly facilitated as has been the case in other branches of the building industry. Such a body would, additionally, be able to negotiate with the existing bodies responsible for the other building professions which currently experience difficulties in applying their own standards to projects of which thatching forms a part.

A stronger professional organisation could foster the adoption of a code of conduct which in time could become mandatory. The transparency within which thatching would then operate could only benefit the general public, and thus also thatchers themselves.

- 3 The relevant government bodies and specialist organisations should investigate the supply of thatching materials and endeavour to remove some of the uncertainties which have distorted the market.

This is probably the most intractable problem currently faced by the thatching industry. General conservation philosophy does not encourage the importation of foreign materials, but it is frequently argued that these sources provide greater reliability. The availability of imported

water reed is bringing pressure not only on the indigenous reed industry but on the more fragmented straw growing industry. Straw imports are also now a factor in the market. It will be necessary to explore the reasons for straw shortages in an attempt to create a climate which is more attractive to this specialist branch of agriculture, and to experimentation with thatching strains.

English Heritage will support specific initiatives recording the behaviour of thatch and will encourage the growing of straw for thatching. It will encourage the development of these varieties if this proves necessary and will also investigate the legal impediments to free movement of unrecognised varieties.

- 4 Research can be conducted into optimum thatching methods and materials.

Scientific research into thatching has been relatively specialised until recently and there is still much to be done, particularly in the realm of longevity, before we can say that we understand the strengths and weaknesses of both methods and materials on a fully scientific basis. The experience of growers as well as laboratory scientists will be essential to this enquiry.

Even where it has not commissioned research English Heritage will maintain an overview of the research being conducted into thatching methods and materials and endeavour to bring it to the users so that the industry and the house-owner will benefit.

Conclusion

Thatch is a part of the built heritage of this country, a sustainable organic material which is deeply ingrained in the regional identity of many parts of England. It must be protected from further loss and also from inappropriate alteration, which can come about through technical change to the material used as well as to thatching style. We cannot, however, ignore the changes to the world in which thatching is now practised. We believe that further scientific research and greater professional organisation offer the prospect of sustaining thatch into the future in its full variety, within the framework of the planning system.

APPENDICES

Independent professional advice

A number of references are made in this guidance to seeking independent professional advice in difficult cases. By this we mean advice for which payment is made, but where the consultant has no financial interest in the eventual work. The provision of independent advice in thatching (whether free or paid for) is not a new problem. This appendix attempts to explain how we have arrived at the current situation and what the prospects are for such advice.

From the 1940s to the 1980s, the Rural Industries Bureau (subsequently the Council for Small Industries in Rural Areas, then the Rural Development Commission, now part of the Countryside Agency) maintained Thatching Officers. They had the two-fold task of travelling the country to inform thatchers of methods and standards which the Bureau wished to promote, and of teaching all methods to thatchers who came to the school established at Knuston Hall, Northamptonshire. The Officers had a unique position in the thatching world and were universally respected.

Happily the school is still in being and continues its invaluable work as the only place of formal instruction open to all thatchers. However, there are no Thatching Officers as such today, and the staff of Knuston Hall, though welcoming all students, are unable to answer specific queries or travel to sites requiring inspection. Two bodies have a specific remit to consider how standards in thatching may be assessed and validated. The Thatching Standards Committee consists of a representative from each County Master Thatchers Association. The Construction Industry Training Board's Occupational Working Group on Thatching consists of the Thatching Standards Committee, a representative of the National Society of Master Thatchers and CITB staff. Neither body is able to comment on individual cases.

Where a query arises for which independent professional advice is required, the first port of call should be the local Master Thatchers Association, as a source of names and addresses. It may already publish standards. Names of experienced thatchers in the National Society of Master Thatchers may also be obtained from the contact given in Appendix 5. In most cases we envisage that specific advice should come from a thatcher, who should be able to speak from long experience, but it is possible that professionals in other related fields could contribute to the pool of experience available to the house-owner and the local authority, particularly if the work involves technical questions other than those relating specifically to thatching. In all cases, experience and competence are clearly essential: this can probably be assessed in the case of thatchers by reference to the level of attainment under the evolving National

Vocational Qualification scheme (for further information on this scheme, refer to the CITB at the address in Appendix 5).

The particular need in some thatching cases will be for advice that is independent in the sense of being financially disinterested in the outcome of the advice. This may mean that the client will wish to employ a thatcher in a purely consultative role. There are encouraging signs that this form of help, which is commonplace in other areas of the construction industry, will become a feature of the thatching scene. English Heritage will seek to encourage this trend.

where necessary locally repaired. They should then be adequately flashed; this will often involve the use of lead, with box gutters formed on the upper side under the last course of thatch. However, a fillet of lime mortar is a traditional solution, and this may be acceptable so long as cement mortar is not substituted.

If Listed Building Consent is required, the roof structure should be inspected and assessed if at all possible before the application is lodged. Where repairs or replacements are proposed these should be separately specified in accordance with normal building practice; where the state of the roof is uncertain until the works proceed, adequate provision should be made in all respects to reach agreement at a later stage. The fixings into the rafters may be required to be screwed (rather than hammered) so as to minimise damage.

Coatwork should be of an even density and texture, and as flat as possible (ie convex and concave areas are both to be avoided). Valleys should be swept, so that no sharp hollow is left in which water could be concentrated.

Netting is advisable in some cases to prevent damage either by wind or by birds and rodents. Local circumstances need to be ascertained in most cases. Where used, it should be 19mm 20SWG, with strips adjacent but not overlapping and connected at intervals. The fixings should not be so frequent or fast as to prevent the rapid removal of the netting in case of fire.

2 General guidance on design and methods

The following notes are not intended to serve in any sense as a specification, but as a short checklist, particularly for those not trained in thatching. The need for clarity in this respect has become greater in recent years as attempts have been made to pass off one material as another, or to compromise on aspects of the method required for producing a given type of thatch. What follows therefore gives some general indications of good practice, minimum requirements associated with the three types and certain peculiarities which help to distinguish between them. As a rule, the applicant either for grant or for consent should be able to demonstrate that these guidelines are being followed as a precondition, or to justify a departure from these criteria.

In all the thatches

The behaviour of thatch has been briefly described above (pages 4-9). Architects, surveyors and designers should not attempt to complicate roof forms more than is essential to achieve the design objective, and should always bear in mind the task the thatch has to perform, ie the speedy removal of water from the building. Up stands which would pierce the thatch, such as flue pipes, should be avoided on principle as well as because, if they are to conduct heat, they could be a fire risk. Particular care should be taken to see that wood-burning stoves have their flues well insulated, even if these are to pass up existing chimneys. Dormers and similar features should not be designed for positions near gables, valleys or hips. Rooflights should be discouraged as they can be difficult to weather properly. The thatcher should be consulted at the earliest possible stage about the technical feasibility of any alteration of this kind.

If the roofspace is to be underdrawn, care should be taken to ensure that the thatch receives adequate ventilation (see under *Building Regulations, fire and safety*, page 10).

Chimneys, where they project into the coatwork, should be carefully examined for soundness, especially below the level to which the thatch will rise after re-thatching, and

Water reed

By this term the wetland plant *Phragmites australis* is meant.

Ili The provenance of the material should be demonstrated, as well as its fitness for the purpose; evidence of the growing regime may be required.

Ili The depth of materials over the fixings should be a minimum of 130mm, regardless of the substrate.

Ili The overall depth of the new thatch should be a minimum of 300mm.

Ili The ridge (which will usually be block cut) should be in pitch with the coatwork.

Ili There should be no external fixings other than on the ridge, as these are unnecessary and could provide points of weakness.

Combed wheat reed

By this term winter grown cereal straw is meant; it may be wheat, rye or a hybrid.

Ili In all cases the provenance will need to be demonstrated and evidence may be required of the growing regime, including the use of fertilisers. The variety should be known and should be one of those generally approved for thatching (eg Maris Huntsman, Maris Widgeon).

III The straw will need to have been harvested well before it was dead ripe, and a sample provided to demonstrate that it retains adequate flexibility. The length of the straw should ideally be as much as 900mm, although lengths down to 700mm may be accepted. It must have been combed and must at no time have passed through the drum of a threshing machine. The bundles should have the straws all lying the same way.

III The depth of material over the fixings should be a minimum of 150mm.

III The depth of material above the base coat (which may be the sound surface of the previous coat) should be a minimum of 300mm.

!ill The ridge should usually be flush and of straw.

III There should be no external fixings other than on the ridge as these are unnecessary and may provide points of weakness.

Long straw

In the choice of straw the same considerations apply as to the straw used for combed wheat reed (see above) but the straw is not combed and has passed through the drum of the threshing machine.

11 On arrival at site, the straw should be turned out into a bed by cutting any bonds, and the bed thoroughly but carefully wetted. After due time for the wetting to take effect the straw is drawn and formed into yealms, with ears and butts mixed (though not necessarily 50:50).

!ill New work is secured to the roof frame. Each course of a new top coat is fixed with spars to a secure base coat. The depth of material over the fixings should be a minimum of 150mm. The material is not beaten up (ie pushed into position like water reed), but on completion of the coatwork it should be raked and it may occasionally be clipped.

III The depth of material above the base coat (which may be the sound surface of the previous coat) should be a minimum of 250mm.

!ill The ridge should usually be flush and of straw.

!ill External fixings at eaves and verges should be made by driving spars horizontally or upwards into the main coat.

III Netting is advisable (see above under general remarks).

3 Undertaking research on thatch

Research into the thatching tradition or traditions of a region, county or district involves the distillation of some very diverse sources, which will vary greatly in richness and relevance. There can be no set formula for undertaking this research, but it is essential to understand both current and past practice. The English Heritage publications listed provide exemplars for undertaking research in this field but it is appreciated that research on this scale will not usually be justified and this appendix gives some pointers to the main lines all such research is likely to take.

For current practice, a questionnaire to all thatchers known to work in the area is probably an essential starting point. If the resource is of manageable proportions there should also be a visual survey of all existing roofs.

For past practice also thatchers of long experience or now retired should be the first port of call. If opportunities arise for archaeological investigation they should be seized, since the physical evidence to be derived from roofs has great objective value for the study of historic thatch. The English Heritage studies suggest that local museums hold a surprising quantity of thatching tools, which thanks to their specialisation can indicate the methods of the past.

The lion's share of the research is likely to be documentary, and this can be bafflingly diverse. A good starting point is in the County Reports to the Board of Agriculture made in the course of the French wars (1790s to 1815): these vary in their sympathy and perception but give an accurate picture of the official reaction to thatch at this time. Two obvious sources, though to be used with caution, are estate papers, which may describe the process of obtaining materials as well as that of covering roofs, and collections of old photographs. Local authority archives, embracing public health as well as building control, may be helpful in understanding the more recent period.

Drawing this material together and interpreting it may require knowledge of agrarian and social history as well as the history of building and the practice of thatching. It may be necessary to call on several specialists. English Heritage will be happy to advise on the form and personnel of any research project.

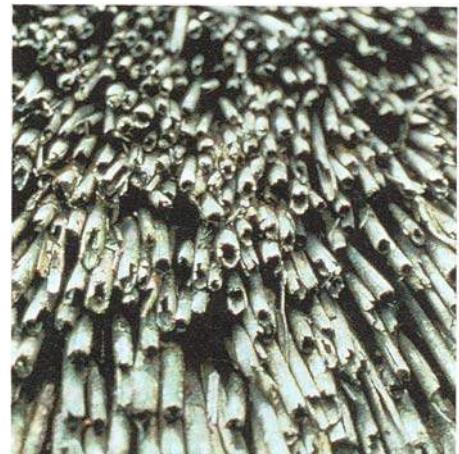


Fig 24 Water reed (Photograph copyright @ John B Letts)

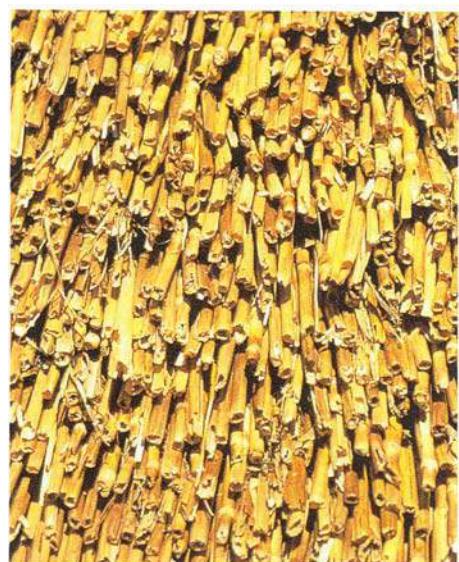


Fig 25 Combed wheat reed (Photograph copyright @ John B Letts)



Fig 26 Long straw (Photograph copyright @ English Heritage: English Heritage Photo Library).

4 Glossary

This Glossary is confined to terms used in this guidance. Thatching has a rich terminology and many regional variants, only a few of which can be noted here. [Variants appear in square brackets.]

Coatwork [casework] The main upper surface of a thatched roof, or the work of creating it.

Overcoating refers to the practice of putting a new coat over surviving thatch, not necessarily of the same material. **Combed wheat reed** [combed wheat, Devon reed, wheat reed]

I A form of thatching straw composed of stems that have been combed mechanically to remove grain and extraneous waste material without crushing the stems.

2 The technique of thatching a roof with this material, using the material in bunches which retain a common orientation to the stems. The material is dressed into place and usually secured without external fixings other than at the ridge.

Drawing The technique of pulling stems of a jumbled material from a heap or bed, thus aligning them for use as thatch and removing short stems, leaves and weeds. Now associated with long straw, which is drawn into yealms.

Leggat [leggatt, legget] A wooden bat with one surface treated to catch the ends of water reed or combed wheat reed, used to dress the material into position on the roof.

Ligger A length of roundwood (usually hazel or willow), often split, laid over the upper surface of a thatch to hold it in place, with the help of spars, and therefore similar

to a sway except for its position. Rarely used in modern water reed or combed wheat reed thatching except on ridges, but used to hold in the eaves and verges of a long straw roof.

Long straw [longstraw]

1 The technique of thatching a roof with straw, using yealms made up by drawing from a bed of threshed straw, the ears and butts lying both ways. The resulting material is laid on the roof and is tied down by spars and liggers rather than dressed into place as in water reed or combed wheat reed thatching. 2 The material used in this way, straw normally cut low on the stem (by a reaper rather than a combine harvester).

Spar [brawtch, broach, brotch] A section of roundwood (usually hazel) split, sharpened, and twisted into a U-shape. Thrust into the thatch the spar holds one layer to another, usually by holding down a ligger or a sway. **Sway** A rod, formerly of roundwood and now usually of steel, laid across a course in the thatching of a roof. The rod must be concealed in the finished roof by the next course or by the ridge.

Water reed [Norfolk reed]

1 Wetland plant (*Phragmites australis*) used for thatching

2 The technique of thatching with this material, which is carried onto the roof in bundles and secured, butts down, with sways and (today) crooks.

Yealm The prepared layer of long straw formed by drawing straw from a bed of threshed material prior to laying it on the roof. **Yealming** The practice in long straw thatching of preparing the material on the ground and then of forming yealms, by drawing.

5 Contacts

The following organisations have an interest in the practice of thatching or the supply of materials.

British Reed Growers Association

Francis Hornor Brown and Co Old Bank of England Court Queen Street Norwich NR2 4TA Tel 01603629871

Building Research Establishment

Garston
Watford
Herts WD2 7JR
Tel 01923 664000

Construction Industry Training Board

Bircham Newton
Kings Lynn
Norfolk PE31 6RH
Tel 01485577577

Country landowners Association

16 Belgrave Square
London
SW1X 8PQ
Tel 020 7235 0511

Countryside Agency

Crescent Place
Cheltenham
Gloucs GL50 3RA Tel 01242521381

Historic Houses Association

2 Chester Street
London
SW1X 7BB
Tel 020 7259 5688

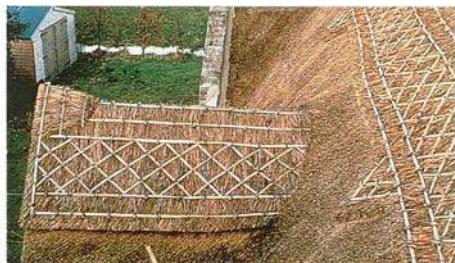


Fig 27 Liggers (Photograph copyright @ John B Letts)



Fig 28 Spar in use



Fig 29 Selection of crooks (iron thatching hooks) from East Anglia and the Midlands. See Fig 20 for crooks in use. (Photograph copyright @ John B Letts)

Institute of Historic Building Conservation

3 Stafford Road
Tunbridge Wells
Kent TN24QZ
Tel 01892618323

National Council of Master Thatchers Associations

12 Greenfinch Drive
Moulton
Northampton NNE 7HX
Tel 07000 781909

Devon and Cornwall Master Thatchers Association

Mrs E Wakley (Secretary)
Higher Whately
Otterford
Chard
Somerset TA20 3QL
Tel/Fax 01460 234477

Dorset Master Thatchers Association

Mr A Banwell (Secretary)
101 Riverscorner
Sturminster Newton
Dorset DT10 2AB
Tel 01258 472802
East Anglia Master Thatchers Association Mr J M M Cousins (Secretary) Hulvertree Farm
Laxfield
Woodbridge
Suffolk
IP138HR
Tel 01728 638721

East Midlands Master Thatchers Association

Mr P Mizon (Secretary)
Whinwillow
High Street
Horseheath
Cambridgeshire
Tel 01223892861

Gloucestershire, Warwickshire, Hereford and Worcestershire Master Thatchers Association

Mr J Raison (Secretary)
24 New Street
Shipston on Stour
Warwickshire CV36 4EN
Tel 01608664384
Fax 01608664767

Kent, Surrey and Sussex Master Thatchers Association

Mr P Arthur (Secretary)

34 Down Park Farm

West Harting

Petersfield

Hampshire GU31 5PF

Tel 01730821370

North of England Master Thatchers Association

Mr B Milne (Secretary)

15 Fleetwood Crescent

Banks

Southport

Lancs PR9 8HF

Tel 01704231510

Northamptonshire Master Thatchers Association

Mr J Costello (Secretary)
104 Ridgeway
\1Veston Favell
Northampton NN3 3AR
Tel 01604 411141

Oxfordshire, Buckinghamshire and Berkshire Master Thatchers Association

Mr I Parkinson (Secretary)
Steps Cottage
St Thomas Street
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National Farmers Union

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National Society of Master Thatchers

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Royal Institute of British Architects

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Tel 020 7580 5533

Royal Institution of Chartered Surveyors

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Royal Town Planning Institute

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Society for the Protection of Ancient Buildings

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6 Further reading

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Unmanaged reed bed in the Norfolk Broads (historically, this material would have been used for thatching).

Bread wheat (Maris Huntsman) grown for thatching. At this nearly ripe stage, it is ready to be harvested.

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