



Historic England

Adapting Traditional Farm Buildings

Best Practice Guidelines for Adaptive Reuse



Summary

Traditional farmsteads and farm buildings make an important contribution to the remarkably varied character of England's landscape. They are fundamental to its sense of place and local distinctiveness but most of them have now become redundant for modern agricultural purposes. Although they lack the agricultural income needed to keep them in good repair many nevertheless have the potential to accommodate a variety of economically viable new uses.

Successful adaptive reuse of any farmstead or building depends on understanding its significance, its relationship to the wider landscape setting and its sensitivity to and capacity for change.

This advice is aimed at owners of farm buildings, building professionals and local authority planning and conservation officers. It explains how significance can be retained and enhanced through well-informed maintenance and sympathetic development, provided that repairs, design and implementation are carried out to a high standard.

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Further research and advice on traditional farm buildings is available at:
www.HistoricEngland.org.uk/farmbuildings

Front cover

A field barn in Herefordshire adapted for use as an architect's office.

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Introduction

Historic England's advice

The purpose of this advice is to help secure sustainable development and the conservation of traditional farmsteads and their buildings through the planning and design process. Traditional farmsteads and buildings are assets which make an important contribution to landscape character and local distinctiveness. They do so through a diversity of uses which are of benefit to local communities and economies.

Without appropriate uses to fund their long-term maintenance and repair, they will disappear from the landscape. Whilst poor adaptation poses a threat, new commercial, residential or other uses that enhance their historic character and significance are to be encouraged.

Our advice is based on a positive approach to informing sympathetic change and development in rural areas. In accordance with the principles set out in the National Planning Policy Framework, it:

- Requires an understanding of the historic character and significance of traditional farmsteads and their buildings in their local rural setting
- Considers their potential for and sensitivity to change, including opportunities for adaptation to new uses that will ensure their long-term survival
- Explains how this understanding should inform designs, both traditional and contemporary, that reveal, enhance and retains their significance

- Is relevant to all situations, from buildings that will allow only the lightest form of adaptive reuse to entirely new structures that respect the historic layout and character of a site

The advice is intended for all parties involved in planning and implementing the repair, restoration or adaptation of historic farm buildings. It is addressed equally to owners and commercial developers seeking to secure viable economic futures for their buildings and to the planners and conservation officers responsible for their care as historic assets. If followed from the outset of a restoration or adaptation project the advice will:

- Ensure that the significance and setting of the site and its buildings are understood
- Inform good quality adaptations and innovative design, including new buildings, open spaces and access within and around the site
- Save time and costs in preparing applications for detailed planning consents
- Ensure that an application complies with national plan policy, and also local plan policies (including the neighbourhood plan if relevant) regarding landscape, the historic environment, biodiversity, siting and design
- Identify where professional advice and support would be helpful

An application will have a much greater chance of success if these issues are identified and considered with appropriate advisers and the local planning authority at the pre-application stage.



A



B



C

Images A-C

Dereliction is a significant and increasing problem facing traditional farm buildings.

The National Planning Policy Framework (NPPF) places good design, enhancement of local distinctiveness and conservation of the historic environment at the heart of sustainable development in rural areas (paragraphs 7-8, 55-64, 126-141). For instance, paragraph 64 states that permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area; and paragraph 126 stresses the desirability of new development making a positive contribution to local character and distinctiveness and opportunities to draw on the contribution made by the historic environment to the character of place.

Informing and managing change

Most traditional farm buildings date from the 19th century and only a very small proportion, usually older and more architecturally significant buildings, are protected through listing. The vast majority form part of farmsteads that include other traditional buildings.

Structural changes in the farming industry have required farmers to construct new buildings that reduce labour costs and conform to animal welfare standards. As a result of this, the majority of traditional farm buildings are redundant for modern agricultural purposes.

In future, the pace of change will accelerate in response to the restructuring and diversification of farm businesses and an increasing demand for living and working in rural landscapes. Maintaining and reusing farm buildings which no longer have a viable agricultural use is a sustainable option, taking into account the wide range of benefits that they afford.



Image D

Traditional farm buildings can be an economic asset for farm businesses. This 18th century barn in Cumbria is now in use as a farm shop.

In summary they:

- Make an essential contribution to England's remarkably varied landscape character and local distinctiveness, telling us about how the land was settled and how our ancestors farmed and lived
- Represent an historical investment in materials and energy that can be sustained through conservation and careful re-use
- Provide an important economic asset for farm businesses or, where they have become redundant, a high quality environment for new housing or rural businesses including home-based working
- Are irreplaceable repositories of local crafts and skills, in harmony with their surroundings and using traditional materials, often closely related to the local geology
- May provide important wildlife habitats

Historic England's research

Historic England's current approach to traditional farm building is based on the results of rigorous research. It updates the advice provided in *Living Buildings in a Living Landscape* (2006). This in turn drew on *Constructing the Evidence Base* (Gaskell and Owen 2005), which provided for the first time statistically robust national and regional estimates of the structural condition and adaptive reuse of listed farm buildings. It also examined the drivers for change and the effectiveness of policy at the national and local level.

Considerable progress, first reported on in *Extending the Evidence Base* (2009), has since been made in understanding the historic character, significance and use of both listed and unlisted farm buildings. It turns out that some areas with the fewest listed buildings have the highest survival of traditional farmsteads, upland areas being particularly significant in this respect. It has also been found that there are other areas, including those covered by out-of-date lists that have high densities of pre-1700 buildings which still await recording and discovery.

Constructing the Evidence Base and the mapping of the historic character, survival and use of traditional farmsteads in the West Midlands and elsewhere in England has found that in many areas fewer than half of farmsteads with surviving traditional buildings retain some form of agricultural function and just 10% are in fully commercial use, whether designated or not. More than 80% of adaptations of listed buildings are for residential occupation, despite planning policies that favour employment and business uses. However, it was also found that residential adaptations more frequently support home-based entrepreneurial businesses than any other kind of urban or rural property.

Options for change

Without a regular stream of income to support their upkeep, most traditional farm buildings will not survive. Isolated buildings, without access, in deteriorating condition or lacking the capacity to accept alternative uses, are those most at risk.

In simple terms, the owners of redundant traditional farm buildings have five options from which to choose:

- **Lose** – through continued dereliction or demolition and salvage
- **Maintain** – through modest investment and the use of traditional or non-traditional materials
- **Repair** – as features in the landscape or as significant historic buildings, with minimal or no alteration

In the majority of cases adaptation, or an appropriate use within a sympathetic development scheme, will be the only means of funding maintenance and repair, the lack of which will lead to further deterioration and eventual loss of heritage assets from the landscape.

- **Adapt** – to new agricultural or non-agricultural uses
- **Replace** – new building to support continued on-farm operations, non-agricultural business accommodation, restore and enhance historic character or reduce pressure on buildings too sensitive for adaptation

On some sites a wholesale change of use may be desirable but on others a mix of new and agricultural uses could be more appropriate.



Image E

Successful adaptive reuse of farm buildings requires an understanding of their significance, their relationship to the wider landscape setting and their capacity for change.

Getting the design right is critical for such sensitive sites. Key issues to consider are the impact on:

- Setting, boundaries and curtilage, through improvement of access, provision of car parking and gardens, development of prominent viewpoints and elevations
- Historic buildings, depending on their form and scale, the materials from which they are constructed, the demand for more new openings to provide light and the sub-division or amalgamation of spaces
- Habitats for wildlife

A small proportion of buildings—whether protected through listing or within the curtilage of a listed building, unlisted but set within designated landscapes or simply unlisted buildings – will have little or no capacity for adaptive reuse. This may be because of their scale, a difficult access, a form that is not readily adaptable or they are of

such intrinsic importance that a new use cannot be absorbed without serious compromise to their fabric or the wider landscape setting.

When taking planning decisions involving farm buildings, local authorities should consider all relevant matters, including wider policy on the open countryside and the need to take account of the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation.

Field barns and out farms pose the most significant obstacles to reuse, due to their small scale, lack of vehicular access and landscape setting. However, many of them make a positive contribution to locally valued and nationally designated landscapes, including those where Countryside Stewardship plays a significant role in the local economy and communities. Some are ideal for sustainable rural tourism, thus opening the door to innovative alternative uses as informal camping barns and bunkhouses.

1 Introducing Traditional Farmsteads

1.1 Traditional farmsteads and their buildings

Traditional farmsteads comprise the farmhouse and some or all of the working farm buildings. Some farms also have isolated field barns or out-farms. Most traditional buildings date from the 19th century but will often display evidence of successive episodes of change. A small number continued to be built for individual farmers, estates and county council smallholdings into the 1930s.

Farm buildings reflect a combination of local traditions and national influences. Most were the work of local craftsmen but some were built to the more formal designs of agents, architects and engineers. They display an immense variation in their scale, layout, architectural form and use of materials. Buildings also relate in varying ways to their yards, other working spaces and the surrounding landscape and settlement.

This guidance makes a simple distinction between these traditional farm buildings, nearly all of which predate 1940, and the prefabricated modern buildings which are critical to the

modern farming industry. These include so-called Dutch barns and covered yards, built of metal or machine-sawn timber, which were built from the 1870s in some areas. Modern sheds are either sited on the farmstead perimeter or replaced earlier buildings. They often relate to new access routes and concreted areas of hard standings.

1.2 Landscape setting

Traditional farmsteads are an integral part of the rural landscape and reflect how it has developed over centuries. There are major distinctions, rooted in the medieval period, in the way they are distributed. Isolated farmsteads tend to be rare in parts of central and eastern England dominated since the medieval period by nucleated villages. In many other parts of the country they are common, and villages are comparatively rare. In upland and previously wooded regions, for example, the landscape is characterised by hamlets and isolated farmsteads around which blocks of fields were interspersed with rough land and extensive areas of woodland.



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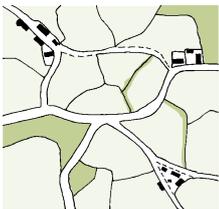
3

Images 1-3

1 Drebley in the Yorkshire Dales is typical of many hamlets in the uplands of northern England, which often developed into clusters of farms and hamlets as their surrounding fields and pastures were enclosed on a piecemeal basis.

2 A farmstead in the Howardian Hills of North Yorkshire set amongst fields that date from the planned enclosure of open pastures and farmland after 1750.

3 Isolated farmsteads sited among small-scale and irregular fields cleared from woodland and heaths, as here in Worcestershire.



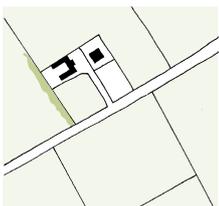
Ancient irregular enclosure

Ancient irregular enclosure is 17th century or earlier in date, and may relate to the creation of farmland from woodland (sometimes termed assarting) and areas of rough grazing in and around the heath, mosses and upland moor. Ancient enclosure is strongly associated with dispersed settlement, around which farmland was interspersed with blocks of strip fields, rough land and extensive areas of woodland.



Piecemeal or gradual enclosure

This results from a long process – starting in the 13th century – of farm amalgamation and the exchange of land between farmers, and often the resiting of farmsteads away from settlements. Boundaries may retain the curved form of the strips into which the medieval open fields around villages and other settlements were subdivided. The development of large farms has often resulted in the removal and sometimes the straightening of boundaries to create larger-scale fields.



Regular or planned enclosure

This usually results from a later process of formal agreement between the late 17th and 19th centuries, often driven by estates and in some cases by parliamentary act. Planned enclosure landscapes display a great variety in the scale of their fields and the density and size of their farmsteads. Sinuous roads may respond to the boundaries of earlier fields or tracks, whereas some areas were completely re-planned with straight roads.



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Images 4-8

4 A regular courtyard group in the North Pennines, whose buildings are carefully planned as linked ranges.

5 Linear plans, where houses and working buildings are attached in-line, are found around the uplands of northern and western England, as here in this Dartmoor longhouse, and around heaths and commons in some other areas.

6 A medieval farmstead in the South Downs with a range of buildings set around several yards.

7 A loose courtyard complex, with detached working building and the house facing into its own garden, dating from the 16th century in the lowlands of Herefordshire.

8 Farmsteads within and on the edge of settlements can be appreciated in relationship to other historic buildings and distinctive patterns of enclosure as here in a Leicestershire Vales village.

1.3 Building types

Farmsteads and their buildings have to be understood in terms of the functions they were intended to house. Their scale and form are directly related to the historic land use of the area. Buildings and whole farmsteads may also express particular vernacular traditions or the desire of farmers and landowners for agricultural improvement which may also be reflected in the landscape around them.

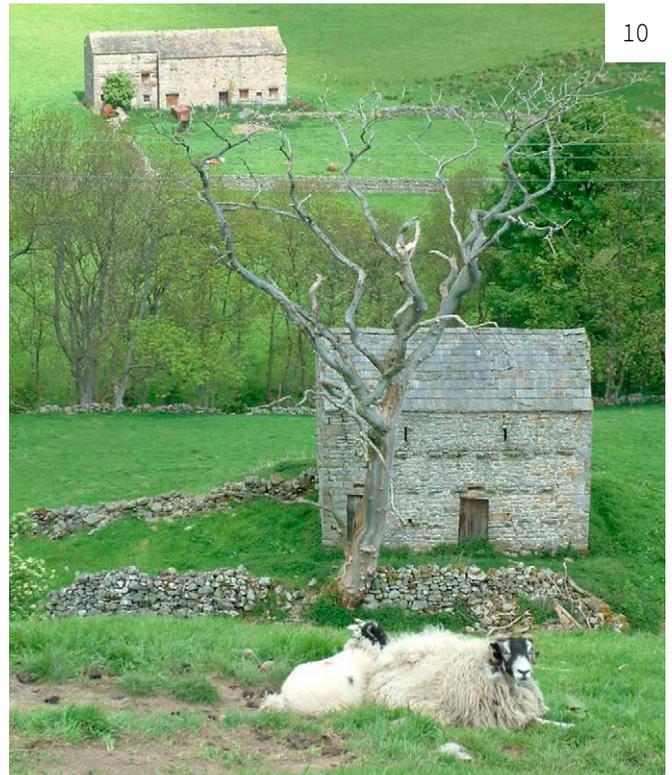
Regardless of local differences in design, farmsteads everywhere needed:

- Access to and from farmland, communal land, other settlements and markets
- A farmhouse, either attached to the working buildings (commonly found in upland areas), positioned to one side of them or detached with its own driveways and gardens (as often seen in larger and high-status farmsteads of the 18th and 19th centuries)
- Cottages for farm workers or rooms for live-in farm labourers – usually in the attic or back wing of the house. Seasonal workers were often housed in the lofts of farm buildings
- Specialist buildings or ranges of structures for storing and processing crops, sheltering animals and their fodder, storing carts and implements, making dairy products and in rare cases other non-agricultural products
- Yards for stacking harvested corn and hay, sorting and containing livestock, storing their manure, milking cattle, as well as other spaces used as gardens or orchards

Large arable farms required more space for stacking, storing and processing corn, for storing carts, and housing the horses that pulled ploughs and other vehicles and machinery, than farmsteads which specialised in the rearing of cattle and dairying.



9



10

Images 9 and 10

9 Barns have dark and well-ventilated spaces for storing the harvested corn crop and a floor on which the crop was beaten out and then the grain separated from the husks or chaff in a cross-draught created by opposing doors or openings. Threshing barns have few external openings, other than at least one pair of double doors or more rarely (in upland areas usually) a single door to the threshing floor. Combination barns, commonly found in upland and wood pasture areas, have many more openings and often additional floor levels to cater for additional functions.

10 Field barns and out-farms are set within the fields away from the main farmstead. They saved on transporting the harvested crop (hay or corn crops) to the farmstead and enabled manure from the cattle housed in them to be carted back out to the distant fields.

11



13



12



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Images 11-14

11 Granaries were designed to keep grain clean, dry and secure from rodents and pilferers. They could be detached structures, placed above the ground or located in the loft of the house, above the stable or cart shed, or within a combination barn.

12 Shelter or housing for cattle, usually facing onto yard areas, comprise open-fronted shelter sheds; small cubicles (looseboxes) with doors for intensive fattening or for bulls; cow-houses with stalls, and with access for both the cattle and in some cases passages for feeding and mucking out; large cattle sheds or covered yards. Interiors to cattle housing could be quite dark with

slits providing ventilation, proper lighting being more commonly introduced in the 19th century.

13 Stables for horses were generally well-lit and ventilated buildings, with typically tall and narrower doors than to cow-houses.

14 Cart sheds often include overhead granaries. Waggon houses, designed to shelter a loaded waggon overnight, are much larger than simple cart sheds and were normally open at both ends, although some have now been closed off at one end.

Most farms adopted a courtyard plan in which buildings were arranged around one or more yards. The largest developed in arable area and the smallest in stock-rearing and dairying areas where the yards simply served as areas to move cattle and store their manure.

Linear farmsteads, where the house and working buildings are attached in-line, are concentrated in upland and wood pasture districts. Dispersed

plans with multiple yards are also found in these areas and on mixed farms which developed in a piecemeal fashion. Smallholdings are sometimes hard to distinguish from landless cottages if they had few or no working buildings.

The scale, range and form of working buildings reflect their requirements for internal space, lighting and fittings. Some, such as dovecotes and threshing barns, were detached and highly

specialised whilst others combined two or more functions in individual rooms or inter-linked ranges. Minor buildings, such as cart-sheds and pigsties, also provide important evidence of how a farmstead has been planned or evolved over time.

The materials from which farm buildings are constructed reflect not only the local geology but also the status of the farm and its owner. This has led to great contrasts in the way in which walls and roofs were constructed, the evidence for which often survives better in working buildings than in farmhouses.

In the late 18th century mass-walled buildings in stone and brick, roofed with tile or slate, began

to replace earlier forms constructed from earth, timber and thatch. These novel building materials were imported onto the farm via the new network of canals and railways. The 19th century also saw the introduction of a range of standardised architectural elements, such as part-glazed and ventilated windows and the use of cast and wrought iron for columns. However, prefabricated construction in industrial materials did not become widespread until after the 1950s.

Further information about historic farm buildings can be found in the Historic England publications [National Farmsteads Character Statement](#) and [National Farm Buildings Types](#).

2 Assessing Character and Significance

2.1 Farmstead Assessment Framework

A practical toolkit for assessing the development potential of historic farm buildings is provided in the Historic England publication *Farmstead Assessment Framework: Informing sustainable development and the conservation of traditional*

farmsteads. As well as explaining how to develop a successful scheme, the document describes how good understanding of the site can inform the design and development process.

Appraising a site at the pre-application stage helps the applicant and local planning authority to:

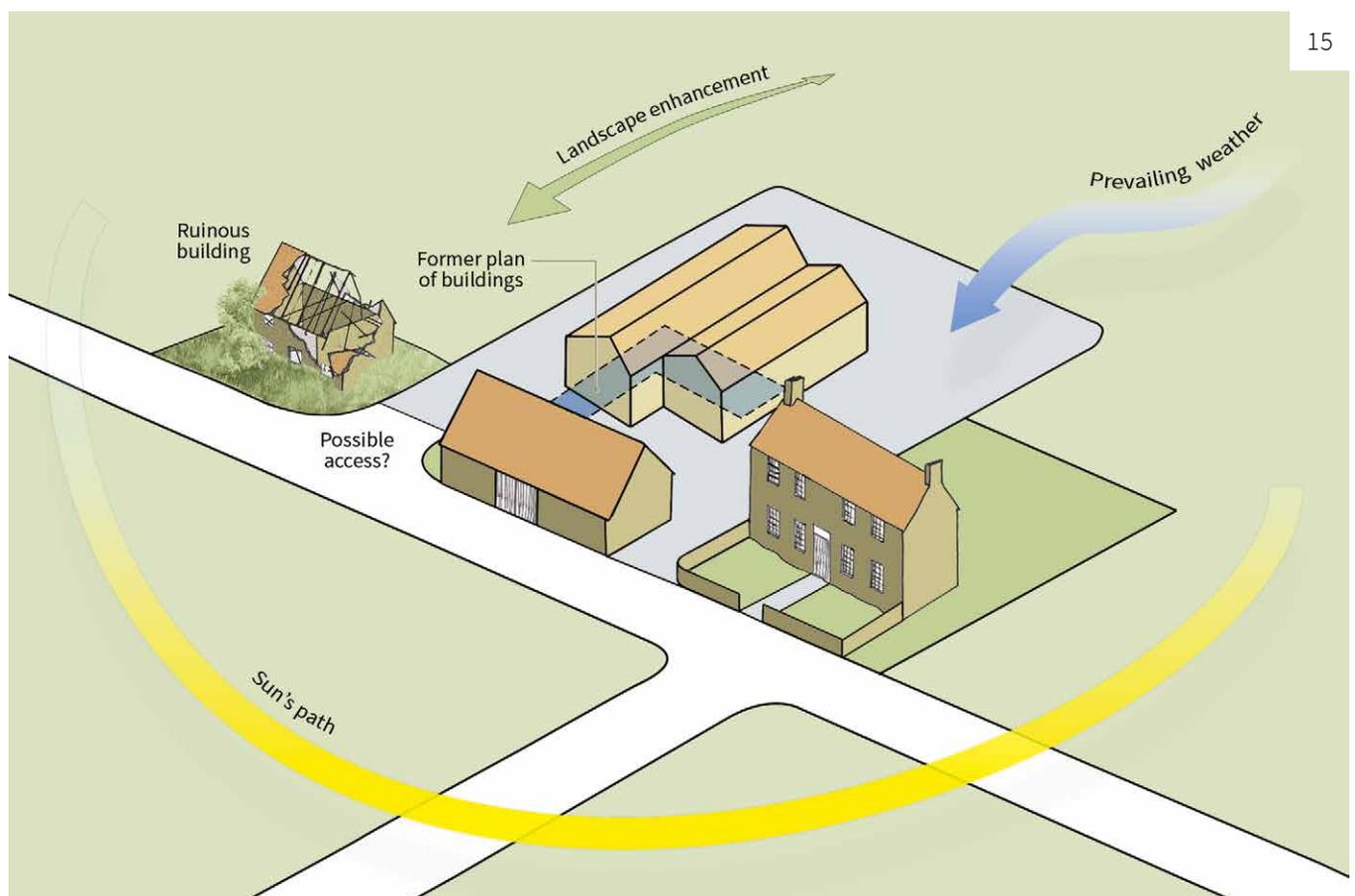


Image 15
Looking at the whole site will help when considering the opportunities for change that can enhance the

distinctive qualities of a farmstead and its landscape setting.

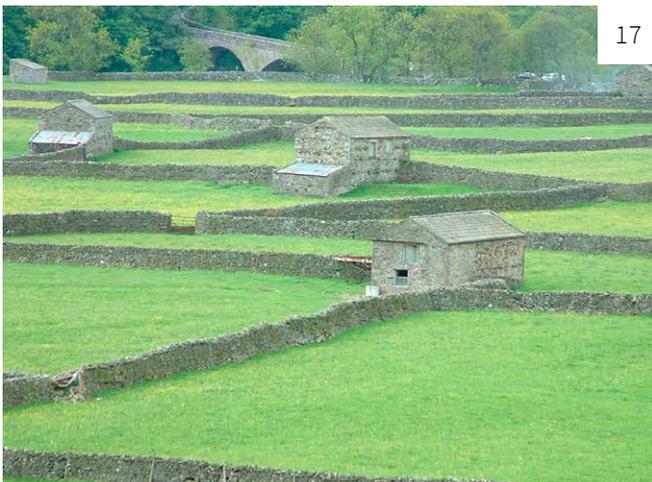
- Understand the historic evolution of the farmstead in its setting and its overall significance as well as the significance of its individual components
- Identify those aspects of its character that will need to be respected if adaptive reuse of buildings is being considered
- Assess the site and the capacity for change of the buildings

- Evaluate what form of adaptation can successfully conserve character and significance

Most schemes for adaptation are likely to have an impact on the surrounding farmstead and its landscape setting. This will need to be positively addressed throughout the planning and design process. Initial discussions with the local authority will indicate if planning permission and or other consents, such as listed building consent, will be required.



16



17



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Images 16-18

Significant traditional farmsteads and buildings remote from the farmstead make a positive contribution to local distinctiveness through their varied scales and

layouts, use of materials and the way they relate to the surrounding form and patterning of landscape and settlement.

An early appraisal will help:

- Identify the suitability of the site for the intended use and identify opportunities for changes which conserve, enhance or better reveal the distinctive character of a farmstead in its setting
- Save time and costs in preparing an application for new development, change of use or listed building consent and where necessary an accompanying Design and Access Statement and Heritage Statement
- Ensure the success of the final application by identifying and resolving as many issues as possible at the pre-application stage
- Inform negotiations with other parties affected by the proposals
- Identify the need for professional support and advice

A high-quality design that makes a positive contribution to its rural context will depend on a well-informed understanding of the evolution of the farmstead, its buildings and surrounding landscape. In particular, this will take account of:

- The extent of past change, which can help to identify opportunities to retain the significance of what survives, reinstate lost features or develop other parts of the site in an appropriate way
- The landscape context, including the potential to connect wildlife with the surrounding area through appropriately sited and managed hedges, walls and verges
- Any designations by which the site is affected and the way in which its buildings relate to historic and modern spaces, routes and the surrounding area
- The architectural styles, materials and details that need to be respected in order to maintain the character of the farmstead in its landscape setting

Farmstead Assessment checklist

Site and management

- Property boundaries – who owns or leases the land?
- Access – what public rights of way are there?
- Services – are water, sewage, electricity and telecommunications available?
- Designation – does the farmstead include listed buildings, scheduled monuments or sites of special scientific interest?
- Non-designated heritage – what other historical or archaeological remains are there?

The National Heritage List for England

provides details of listed buildings and other designated heritage assets. Information on non-designated assets may be obtained from the local planning authority and on sites of special scientific interest from Natural England.

Historic character

- Setting – how is the site viewed in its wider setting?
- Site – how is the farmstead planned and what is the relationship between its traditional and modern farm buildings?
- Buildings – what are they made of and what is their structural condition?

Significance

The National Planning Policy Framework (NPPF) defines significance as “the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance

derives not only from a heritage asset's physical presence, but also from its setting".

Planning policy relating to the historic environment requires the significance of heritage assets to be understood and the impact of proposals upon that significance to be assessed. Both designated and non-designated assets may have a degree of significance although that significance may not be fully reflected in the list entry.

Historic England has produced advice on the assessment of significance:

Good Practice Advice Note 2: Managing Significance in Decision-Taking in the Historic Environment

Historic England Advice Note 2: Making Changes to Heritage Assets

Farmsteads that are likely to be significant at a national level include those that:

- Are within or adjacent to archaeological remains
- Contain rare examples of well-preserved 18th century or earlier farm buildings
- Display innovative design in their architecture or engineering
- Are constructed of rare materials (for example earth walling and thatch) or contain historic fittings and inscriptions

Capacity for change

Consider how the proposed changes will conserve and enhance the character of the site in its landscape setting:

Site and buildings

- Scale and layout of the site in its landscape setting
- Scale, layout, construction and condition of individual buildings, including the availability of natural light
- Costs, robustness and supply of traditional building materials

Access

- Road access that meets the safety requirements of the local highways authority
- Modern and historic points of access that minimise impact on the landscape setting

Neighbours, flooding and contamination

- Impact of increased traffic, overlooking, noise and loss of light
- Risks of flood, contamination or ground stability that may require a risk assessment from the local planning authority

Habitats and landscape character

- Ponds, hedgerows and other boundary features that could enhance wildlife habitats and landscape character
- Bats, owls and other species that may need to be protected

Services

- Cost and potential impact of new services
- Opportunities for generating energy from renewable sources
- Opportunities to minimise water consumption through sustainable drainage systems

Farmsteads and buildings can contribute to local character if they have one or more of the following:

- Traditional farm buildings
- Their historic form as traditional farmsteads, where the historic farm buildings, houses and spaces relate to each other

The greater the survival of the historic form of the group and the detail of individual buildings, as identified here, the greater will be its significance as a traditional farmstead.

Historic maps of the early 1900s, verified by fieldwork, provide a useful benchmark to measure the degree of change to a farmstead.

- Traditional farm buildings
- Modern farm buildings
- Farmhouse

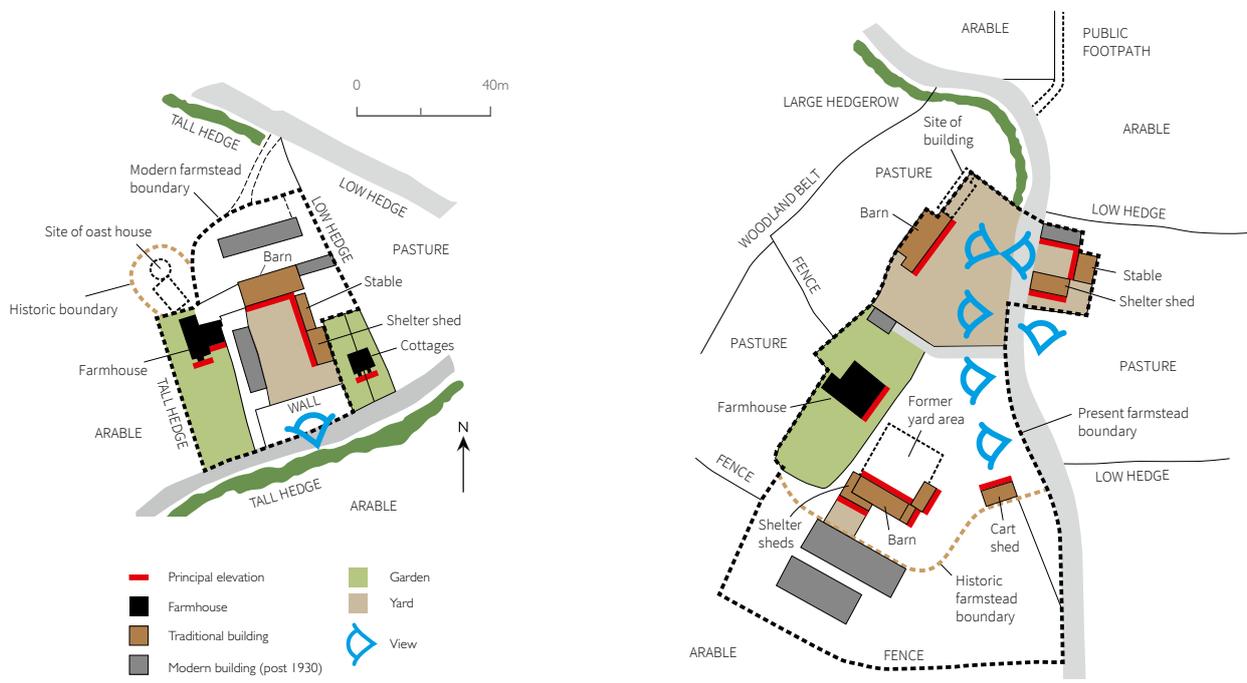
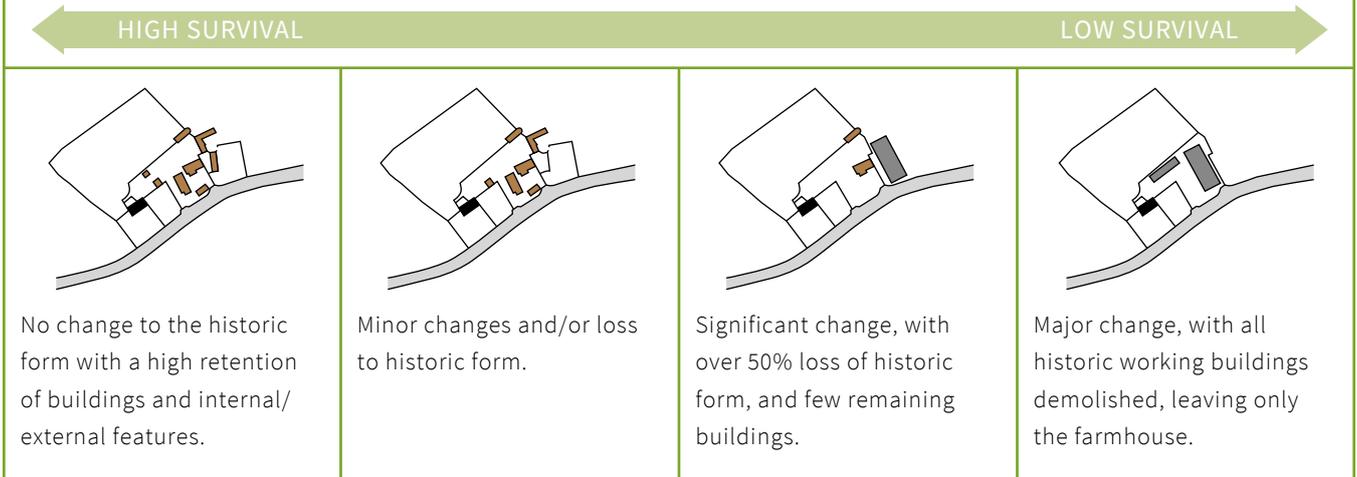


Image 19
The understanding gained from looking closely at the farmstead will help to prepare a scheme that conserves and enhances the significance of the whole site. Development might include new buildings, the

demolition of insignificant buildings and the opening of spaces to better reveal the significance of heritage assets in their settings.

3 Adapting Farm Buildings

3.1 Key issues

Once a farmstead's significance and sensitivity to change have been assessed, a designer can begin work on plans for its adaptation in consultation with the local planning authority.

While there is widespread regional variation in the function, design and materials used for farm buildings, there are a number of issues common to adapting most farm buildings:

Understand the construction and condition

Survey drawings and a schedule of condition will need to be prepared to establish the extent and nature of the repairs required and the associated costs. The local planning authority may also require some form of recording to be carried out for heritage assets as part of any planning consent. Such work can help to inform options for reuse and would be proportionate to their significance and the works proposed. (See information on [Recording](#))

Respect the architectural and historic interest of the building

Any adaptation will need to strike a balance between the practical requirements of a new use and protection of the historic character of the existing farm building and its setting. Thoughtful and innovative design can usually resolve these potential conflicts, but users may have to accept some degree of compromise – for example restricted headroom or slightly lower daylight levels than might be ideally desired.

Understand the setting

A good understanding of the building's relationship with its surroundings will ensure that the new works conserve and enhance the relationship with the landscape. This understanding can then inform detailed design decisions about spaces, curtilage, access, visual impact and enclosure, as well as details of materials, surfaces, boundary treatment and planting.

Achieve high standards of design, repair and craftsmanship

Assessing the impact of changes and carrying out sensitive design and repairs requires the skill and knowledge of those qualified and experienced in conserving historic buildings.

Minimise alterations and loss to significant historic fabric

Retention of as much significant historic fabric as possible is a fundamental part of any good adaptation, together with the use of compatible materials and methods of repair.

Retain distinctive features

Historic farm buildings invariably retain features that provide evidence of their former use and contribute to their significance. They may range from a simple series of ventilation slits formed in the masonry structure to vertically boarded doors to a cart entrance. Retaining such features contributes to a successful adaptation.

Consider how to introduce daylight

Ventilation was a more significant requirement than light in the design of most farm buildings, although many farmyards face east and south to

catch the sun. One of the greatest challenges with many adaptations is to increase daylight without compromising the building's external appearance.

Consider level of subdivision

Another difficult aspect of farm building adaptation can be the incorporation of functions that require subdivision of the existing open spaces. This is especially the case with threshing barns, the upper floors of combination barns and loft areas that are significant for their impressive proportions and long sight-lines and whose significance would be harmed by subdivision.

Consider how services and insulation will be incorporated

Most new uses have some service requirement and will need to comply with Building Regulations (Part L) for adequate levels of energy efficiency. These need to be incorporated so as not to damage historic fabric or features of interest. Exemptions and 'special considerations' apply for historic and buildings of traditional construction.

Consider extensions and new buildings

Avoid the construction of extensions that compromise the character and setting of the farm building. Instead, consider extensions and new buildings that work with and enhance the historic plan form of the farmstead. Extensions and new buildings can also be used to conserve the significance of buildings which are too sensitive for intensive adaptive reuse requiring a high degree of subdivision. However, if a significant extension is required for adapting the building to a new use, that use may not be the most suitable one for the building.

Re-use and retain minor outbuildings

Minor outbuildings provide important evidence of how a farmstead evolved over time and should be retained if they contribute to the farmstead group. Some can be difficult to convert but others can be put to good use for parking, storage or services.

Retain and encourage wildlife habitats

Establish what wildlife gains benefit from the farm buildings to be converted, particularly if there are any protected species. Explore opportunities for

creating wildlife habitats that are in keeping with local landscape character and biodiversity action plans.

How well a building can be adapted to overcome all of the above issues without losing character and significance depend to an extent on what it is to be used for. For instance, a commercial scheme may require less subdivision than a residential adaptation, but need to provide more external parking space. A requirement for better road access for service vehicles could have further significant impact on the setting.

The following sections describe how all these issues can be addressed through good design, based on an understanding of historic character and significance and the landscape setting.

3.2 Setting

Minimising the impact on the setting is an important aspect of a successful project. This often requires a light touch and an understanding of what features characterise the setting, including other buildings and spaces in the farmstead and their relationship to the landscape and any surrounding heritage assets. Considering the public views of the farmstead is particularly important in areas of high landscape value.

Patterns of access are critical to the appreciation of how farmsteads are seen and experienced in their settings. Some are sited alongside or at the meeting point of public routes and tracks, whilst others are sited at the ends of private drives.

There were also areas for the movement of vehicles and animals, the accommodation of stock and the spaces where hay and sometimes corn would be stacked. Ponds are another common feature, and in some areas ponds and streams provided spaces, often paved in some form, for washing carts.



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Images 20-22

20 A sensitive adaptation avoids suburban formal drives, tarmac surfaces and edging materials.

21-22 Landscape works around farmsteads, including the reinstatement of ponds, historic boundaries, lost orchards and areas of unmown grass can provide important habitats for wildlife.

Also consider whether buildings face inwards, a common feature of courtyard farmsteads in many areas, or face out towards the surrounding landscape. Surrounding walls, gardens, yards and other features also influence the extent to which a farmstead is enclosed from or open to its setting. The other key characteristic of farmsteads is the way the landscape often flows up to the immediate edge of the buildings without any form of definition.

The relationship of the farmstead to its farmland should be respected while meeting the needs of the new use. Ideally the curtilage needs to be kept as minimal as possible. Enclosed private areas and the paraphernalia associated with

domestic use need to be carefully sited and contained, particularly in relation to public views and the surrounding landscape. Extending gardens into what has been farming land usually requires planning permission. In adaptations involving multiple units, adjoining fields are often subdivided into small paddocks which become gardens often with fences. Field pattern makes an important contribution to landscape character and any subdivision of fields needs to respect the characteristic size and shapes of local fields.

New walls or planting can be used to screen parking and garden areas but should follow the local vernacular. In particularly sensitive

landscape settings, a ‘ha-ha’ (a turfed incline sloping down to a vertical wall) may be the most discreet form of division. Delineating shared space, or space occupied by part of the farmstead which still acts as a working farm, can sometimes require careful thought. Subdivision of fold-yards or the removal of boundary walls is best avoided.

Landscaping works

A sensitive adaptation avoids formal drives, tarmac surfacing and edging materials. The upgrading of tracks, gateways and yards can have a detrimental effect on the setting of the building. New fencing, gates and boundary walls need careful design that follows locally observed patterns.

Historically significant hard landscape features, such as setts and cobbles, need to be retained and incorporated into the landscape works; otherwise the use of bonded aggregate to soften hard landscaped areas can be very successful.

The reinstatement of ponds, historic boundaries, lost orchards or areas of unmown grass can provide valuable new habitats for wildlife. Consider how water can be re-cycled within the buildings and how water catchments such as farm ponds can be used to store water as part of a sustainable urban drainage system.

Access and parking

Vehicular access and parking can have minimal impact when the farm building is converted to a single dwelling with careful landscaping. Farm tracks can be retained and parking accommodated within cart-sheds or other outbuildings. Commercial uses and multiple dwellings usually have greater impact and can trigger the involvement of the local authority highways department and the need to upgrade the access. Avoid if possible highway standards such as large visibility splays, turning circles and street lighting.

Parking requirements are generally determined by the local authority and for residential use this may be up to two spaces per dwelling. With a commercial use, car parking can become a much more serious threat to the setting. Although

outbuildings may provide some garaging, it is likely that the majority of parking will need to be screened from view.

3.3 Walls

The main external walls of farm buildings were generally constructed of locally available materials. All materials require their own appropriate repair techniques, and compatible materials should be used when these are needed for repair. Natural materials acquire a patina from weathering and such character can very easily be lost by overzealous replacement, rebuilding or cleaning.



Image 23

This adaptation of a field barn to an architect’s office has included glazing below the eaves to increase light levels with minimal impact on the exterior.

The external walls of farm buildings often retain distinctive features that can be retained. Perhaps most common are ventilation holes or slits, which come in a wide range of forms – cruciform, vertical or diamond slits and diaper honeycomb patterns. These were traditionally left open and unglazed though some may have had simple wooden shutters. During adaptation they can be either blocked on the inside face or glazed deep in the aperture so that there is no change in external appearance.

Other distinctive features include nesting holes for pigeons (often grouped in a regular pattern on an east-facing wall), owl holes and date stones. Buttresses may have been added at some stage to restrain outward leaning walls. Buildings such as granaries, which used an upper floor, often incorporate stone steps. The retention of such features is important but rarely poses a significant problem in any type of adaptation.



Image 24

The barn door opening has been replaced with glazing and solid sliding timber doors which maintain its simple semi-industrial character.

Masonry and earth structures: common repair issues

Farm buildings constructed from masonry bonded with lime mortar generally have substantial walls, often 600mm thick or more. However, their foundations are often minimal.

Rubble walls were often coated in a lime render with a limewash finish that was renewed on a regular basis. Reinstating missing lime renders can add a layer of protection to the building fabric.

Walls made of cob, earth mortars or walls with rubble cores are all highly vulnerable to water penetration. Water needs to be kept out of the top of the wall as well as the base, otherwise the wall core will decompose.

Cracks in masonry structures usually indicate movement. This could be caused by the roof forcing walls outward, concentrations of groundwater from leaking gutters and downpipes, the spread of tree roots or the decay in timber lintels or wall plates.

Leaning walls and gables are a common defect in farm buildings. Often this is due to the outward thrust of the roofs, and ties may be needed. Buttresses have often been added to support such walls, but on poor ground they can subside and pull the wall further out.

Some masonry and brick walls were constructed without cross-bonding of the two outer leaves. Over time, often due to moisture, the finer elements of the rubble core migrate down and exert pressures on the exterior skin of the wall, resulting in delamination.

Changes to external ground levels can result in the erosion of foundations. This is a problem that is more likely to affect stone buildings than those with a timber frame construction.

For more information about these and other problems, see our companion publication *[The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice.](#)*



25

Image 25

A barn in the Yorkshire Dales National Park with glazing set in the deeply recessed existing entrance.



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Image 26

A stock building in the Dartmoor National Park, converted to residential use, which has made good use of existing openings.

Openings

Because ventilation was a more important consideration than light, farm buildings often have few external openings. The historic pattern of openings is related to the function of the building over time, and often makes a fundamental contribution to its mass and character.

Maximising the use of these existing openings by planning internal spaces around them and limiting the formation of new ones will help retain character. Where new openings are added or new windows inserted within existing door openings, great care needs to be given to their placing and design.

In many cases it is probably best to follow existing patterns on the building or other similar farm buildings. New openings can also be expressed in a modern semi-industrial way without resorting to making them appear 'historic'. Any new opening in a masonry structure will also involve careful design of its lintel and sill.

The large cart doors that lead into the threshing bays of barns pose a particular design challenge in adaptation schemes. They often have large porches and may also preserve important details such as slots for the 'lift' that kept grain within the threshing area while being beaten from the crop.

New entrance screens which are slightly recessed with a simple vertical emphasis can be effective. Full glazing can alter the scale of the building and can give too much prominence to the opening. However, if the cart doors still survive or replacements are designed this can successfully reduce the impact of glazing. Alternatively, this bay can be left open and unconverted or used for storage or garaging. This allows the large doors and the space behind, which may still retain its original floor finish, to be left unaltered.

Windows and doors

Surviving historic window frames and doors should be repaired rather than renewed. Farm building doors are usually solidly constructed from external vertical planks applied to a stout wooden frame with iron strap hinges. Often doors are hung from pintle hinges set in stone blocks. Some doors, such as those for buildings housing cattle were slatted for ventilation.

New doors and windows will inevitably be required for habitable accommodation but standard 'off the peg' joinery will never look substantial enough for buildings characterised by large robust frame sections. New hardwood joinery that matches the timber species used in the original building will help blend new and existing work.



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Image 27

This L-shaped run of listed shippens in the Peak District National Park have been converted into two dwellings. The spaces behind the cart door entrances were excluded from the consent as a way of retaining that aspect of their character.



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Image 28

White and bright colours for joinery are best avoided in preference to dark grey/red, pale green and grey greens. Alternatively colours that blend with the stonework can be used.

As an alternative to timber, steel window sections can often complement the industrial character of many farm buildings, provided that the balance of glazing to solid remains appropriate. Avoid the glazing of every door opening to introduce light. The impact of new windows and doorways can also be reduced through the use of shutters or joinery screens.

Glazing

The glazing of openings is a particularly subtle aspect of design in farm building adaptation work. In masonry structures setting glazing deep in the reveal of existing openings (which were rarely glazed) creates shadow lines and minimises reflections and impact. The glazing might be inserted as a frameless piece of glass bedded directly into the masonry reveals.



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Image 29

This adaptation has retained ventilation slits with glazing set on the inside face.



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Image 30

The adaptation of this granary has carefully retained existing openings and incorporated sensitively designed new joinery with shutters.

Timber frame structures – repair issues

It is probably easier to diagnose problems in the open structure of a timber frame building than a masonry structure where problems can be harder to see and diagnose.

A common problem is longitudinal racking. This occurs when the whole structure leans in one direction because the roof is inadequately tied or braced from one end to the other.

It is important to make sure the external ground level has not been allowed to rise above the sole plates or dwarf walls on which the timber frame rests. The sleeper walls of barns used for stalling cattle may also have been distorted or destroyed by many years of ‘mucking out’.

Partitions, bracing and the tie beams to roof trusses often get altered or cut through in the reuse of agricultural buildings, which can affect integrity of the structure. Empty mortises on posts, plates and tie beams will show where braces may need to be replaced.

Empty mortises can also be evidence of timbers being re-used from other buildings.

Joints to be repaired and timber that is to be replaced should be marked up on site so that the extent of work is clear to all. Repairs should be executed using traditional carpentry with as much material retained in-situ as possible.

Stripping the whole building back to the timber frame is best avoided as this can result in significant loss of historic fabric. Where weatherboarding has been used, as much of this as possible should be retained where sound.

If there is likely to be a significant period before the commencement of the works, it may well be worth considering temporary repairs. Cheap and simple first-aid repairs can delay deterioration to historic fabric and reduce the amount of work needed later.

For more information about these and other problems, see our companion publication [*The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice*](#)



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Image 31

This converted cow house has used the same arrangement of glazing set back behind joinery for minimal impact.



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Image 32

Glazing to the barn door opening has been set back to minimise impact with glass panes above. Ventilation slits in the masonry have been retained and glazed.



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Images 33-37

33 Glazing has been introduced into the gable end of this barn with minimal impact on the character of the exterior.

34-37 The adaptation of this dairy to domestic accommodation has involved some skillful joinery design for windows and doors.

The use of joinery for shutters and horizontal subdivision has minimised the impact of new windows and glazing.



37

External finishes

Poor repointing can have a significant impact on the character of farm buildings and can ultimately be damaging to the fabric. Generally it is always advisable to use lime-based mortars. Look for evidence of the aggregate and sands used in the past, which may well have local significance and will enable a close visual match. For more information see our guidance [Repointing Brick and Stone Walls: Guidelines for best practice](#)

When considering external finishes as part of a farm building adaptation it is worth trying to establish what previously existed. Lime-render and limewash create an authentic and protective external finish for many traditional farm buildings and are especially appropriate where there is surviving evidence of their earlier use.

Some estates and areas adopted their own livery of colours for painting doors, windows and other architectural joinery. If this is not obvious or cannot be identified, consider colours that blends

with the adjacent walling material. Strong colours and white need to be avoided, in preference to dark grey or red, pale grey or grey green. Staining timber joinery can be less successful, especially if standard light brown wood stains are used. Some hardwood joinery (such as oak or elm) was never painted and can be left to weather naturally.

Weather-boarded farm buildings were traditionally finished with a tar or paint finish. Traditional tar can still be obtained from specialist

suppliers, but more often weatherboarding is now stained black to imitate the original tar finish.

Stone or brick cleaning is unlikely to be necessary in a rural environment and could be damaging, resulting in the loss of patina and lichen.

For more information about these and other problems, see our companion publication *[The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice](#)*

Dampness in farm buildings

Invariably farm buildings were constructed on the driest ground available. However, poor maintenance or alterations can result in damp problems. These are often due to inadequate dispersal of water from the roof or external ground levels rising too high.

Traditionally farm buildings were built as permeable structures with plenty of ventilation so that moisture was able to evaporate easily without detriment to the structure. The use of hard cement-based materials to stabilise rubble walls or provide new floors can result in damp being trapped in or driven up external walls.

Adequate ground drainage around the building in the form of French drains, which are simple trenches filled with gravel, perforated pipes and a geotextile lining, can be particularly effective in maintaining dry walls. Introducing damp-proofing by chemicals into the masonry walls of farm buildings is usually unnecessary and generally ineffective. Masonry structures can take a long time to dry out, even once the cause of damp has been remedied.

In timber-framed structures damp problems are usually associated with ground levels being too close to the sole plates, poor maintenance or inadequate rainwater disposal.

3.4 Floors

Floor finishes in many traditional farm buildings, particularly barns, are rudimentary. Many are simply well-compacted earth or clay, which may have built up over many years. Barns had threshing floors of beaten earth, bricks, stone flags or raised wooden platforms. Other kinds of buildings, such as stables, were often cobbled or laid with setts or bricks.

Most farm buildings have had new floors added during their lifespan. Concrete was frequently used as a cheap and easily maintained finish but is rarely suitable to be retained in an adaptation. If an earlier floor finish, such as

stable bricks, stone setts or brickwork, survives beneath the concrete it can be salvaged and re-laid on the new floor structure. Alternatively, it may be possible to lay a new finish over an older surface, using a layer of sand blinding to protect the historic floor from damage.

3.5 Roofs

The roofs of farm buildings are often highly visible in the landscape. Their long unbroken roofs, undulating ridges, distinctive gables, hips and half hips, together with their regionally characteristic tile, stone or thatch coverings combine to give them their strong visual appeal.



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Images 38-40

38 The use of multiple badly positioned rooflights can have a detrimental impact on the character of many farm buildings. Here just a single conservation rooflight has been used which sits low in the roof.

39 This once completely derelict timber-framed barn has had a new steel and corrugated metal roof

added with a continuous strip of glazing to the ridge maintaining its simple industrial character.

40 The new roof and glazing adjacent to an existing plain tiled roof.

Corrugated iron sheeting has been widely used on roofs of farm buildings since the middle of the 19th century, often as a cheap replacement for thatch or tiles. It has saved many farm buildings from dereliction and its continued use can be justified for ancillary buildings on the farmstead.

The detailing of these roofs is also a vital part of their character and needs to be respected. Generally, they have a simple verge with a slight over-sail and no bargeboard. The eaves rarely have much of an overhang or any soffit board.

Repairing roof structures and finishes

Roofs can become weak and decayed as a result of long years of redundancy or adaptation to house farm machinery. Their repair should aim to retain as much of the character and historic material as possible. Avoid altering roof structures to create extra headroom.

Decide whether principal roof timbers need to be repaired, strengthened, paired up or replaced. Repairs to the ridge may also be required as this is one of the most vulnerable parts of the roof structure.

The materials used to repair a roof need to be compatible with its moisture content. An assessment of loading also needs to be carried out as part of the change of use. Additional strength can be added by the use of a stressed plywood skin on top of the rafters.

Roofs most commonly need to be repaired because the laths, battens, nails or pegs used to fix their coverings have deteriorated. It is often possible to reuse many of the original clay tiles, pantiles or slates, providing that they are still sound. Where new material is needed this can be positioned on less prominent roof slopes.

When renewing roof coverings, consider the use of new rather than second-hand material as the trade in second-hand roof materials has led to the unnecessary destruction of roofs, particularly in rural areas. For stone slate roofs in particular, the use of second-hand material can undermine the viability of quarries producing new slates.

If thatch is present, it should be reinstated or repaired. The local planning authority is likely to have a policy concerning which type of thatch to use.

Roofs that are being upgraded or insulated need to have adequate ventilation (see [thermal upgrading](#)). This can be introduced into gables, at the eaves, at the ridge or within the roof slope. With careful design it is possible to avoid intrusive and prominent means of ventilation.

Roofing felt was rarely used in traditional agricultural buildings but may be required if the building is being converted to a new use. In this case a permeable roofing membrane should be used to avoid potential moisture problems.

For more information about these and other problems, see our companion publication [The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice](#)

New roofs

Sometimes farm buildings have completely lost their historic roof structure as a result of fire or years of neglect. In many instances it will have been replaced with lightweight softwood or metal trusses supporting corrugated iron.

However, investigation of the remaining structure can reveal valuable clues to their original form and thus allow sympathetic restoration. For instance, pockets in the masonry can indicate the spacing of the trusses, and gable walls can show evidence of a previous roof pitch that can in turn give clues to the material used as a covering.

Where a new roof is required, it will be necessary to decide whether to recover the form of the previous structure or construct an entirely modern roof replacement.

Adding new roof elements

One of the most sensitive issues with any farm building adaptation is the insertion of roof lights. Farm buildings rarely had any form of glazing at roof level, though sometimes glazed tiles or slates were used. Numerous new roof lights poorly positioned can have an intrusive impact, particularly where the roof is the dominant characteristic and is



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Images 41-43

41 Glazed pantiles have been used here rather than rooflights.

42 and 43 To maintain the industrial character of this large threshing barn conventional rooflights have been avoided. Instead polycarbonate sheeting has been used below a metal mesh. The grain driers have also been incorporated into the conversion.

steeply pitched. More sensitive alternatives can include carefully inserted new openings, such as the gable end of timber-framed buildings and the use of borrowed light.

Where rooflights are to be added it is often better to locate them on the least prominent roof-slope when viewed from a public vantage point. It is always preferable to use the flush 'conservation type' roof lights as these have less impact on the roof surface, particularly if non-reflective glass is used. New dormer windows are generally inappropriate in all farm-building adaptations except where there is already evidence of their use.

Rainwater goods

Many farm buildings have no gutters because their roofs simply over-sail the eaves and rainwater drains away from the base of the wall. Any existing fittings capable of reuse can be retained. New replacements should ideally match the original profile and material if this is known.

If the original pattern is not known, simple half-round sections for the gutter and circular section for the downpipes are recommended. Cast iron or extruded aluminium are suitable materials but plastic can look insubstantial in the semi-industrial context of farm buildings.

Traditional gutters were usually fixed by means of rafter brackets or wall spikes (rise-and-fall type) because farm buildings rarely have any fascia board. Whether or not gutters are added to a farm building, special attention needs to be paid to how water drains away at the base of the wall.

For more information about these and other problems, see our companion publication [*The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice*](#)

3.6 Subdivision

Many farm buildings have a special open quality. When preparing an adaptation scheme it can be very helpful to examine the structure to see whether the interior was open or subdivided from the outset.

It is particularly important to retain the open aspect of barn interiors. The best solution is to keep the threshing bay and as many adjacent bays as possible open to the roof, which can allow the careful installation of a staircase, gallery and circulation/living area. However, the significance of the interior is the key consideration here and it may be the case that no subdivision is suitable.



44

Image 44

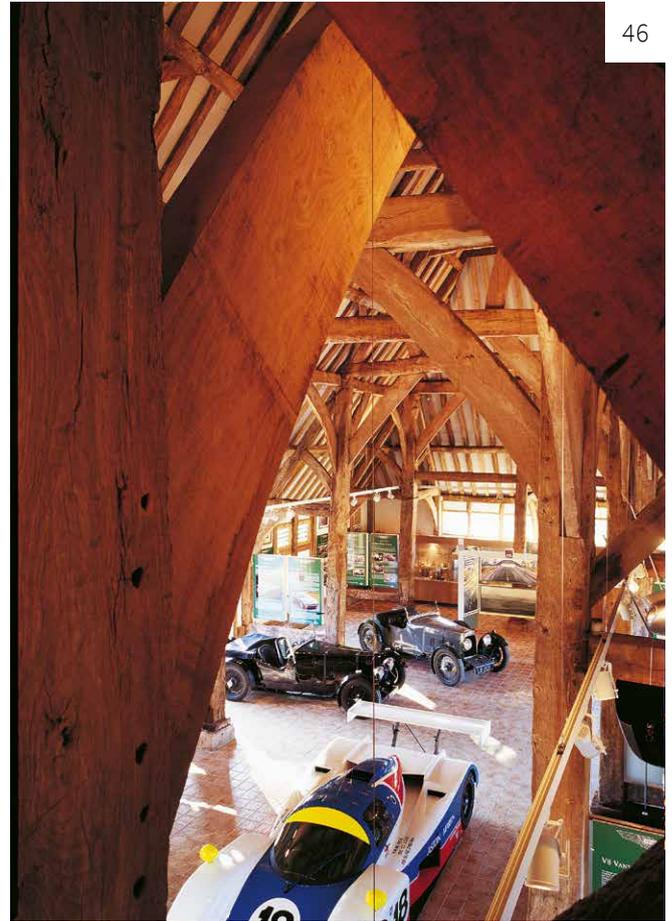
A new freestanding pod housing a small gallery has been inserted in this barn making a clear distinction between old and new.



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Image 45

The open interior of this barn has been retained and some agricultural fittings from its former use remain in place.



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Image 46

The dramatic open structure of this timber barn has been retained in its new use as a car museum.

The incorporation of existing outbuildings or new extensions can help address this problem by providing alternative spaces for domestic ancillary uses (see [New Extensions and Buildings](#)).

Where a degree of subdivision is possible it needs to respect the original structural bay divisions, whether these are defined by cross-walls, framed partitions or masonry nibs.

When a space is subdivided, borrowed light can be used to avoid the need for new external openings, though this may have implications for fire separation required by Building Regulations. Light levels can also be significantly increased by simply splaying or rounding the internal reveals of openings and by using light-reflective finishes.

Narrow-span buildings can be difficult to subdivide while providing independent circulation, and it is often better for rooms to open directly into each other.

Adding floors

Inserted floors need to be kept to the minimum and care should be taken with how these are supported. Placing new floors across full-height threshing door openings is best avoided as it can compromise the character of the space.

In timber structures, floors may need to be supported independently of the timber frame. If new structures are kept separate from the existing structure it allows for relatively easy reversal of the change in the future.



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Image 47

A galleried link has been incorporated in this domestic adaptation which has maintained the full-height open roof structure.



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Image 48

Although this barn is for domestic use, the open interior has been maintained with views through.

3.7 Internal finishes

The interiors of most working farm buildings are very plain, reflecting their functional nature. The walls are often rough and un-plastered and the floors composed of bricks, stone flags or setts. Stables and granaries may still retain their internal plasterwork and be lined out with vertical beaded timber boarding. These 'raw' finishes contribute much to the character of traditional farm buildings and any adaptation should try to retain them. However, this may conflict with the need to thermally upgrade the structure as part of the Building Regulations (see [Thermal upgrading](#))

3.8 Fittings

Machinery and internal fittings provide important evidence of a building's former use and some are now very rare. Most can with some degree of ingenuity be retained as part of the adaptation work. These include stable and cow-house stalls and fittings, granary bins, hoists and cranes, belt drives for steam engines, hop kilns, and the mills and presses found in cider houses.

Where fittings need to be removed they can be recorded (see [Recording](#)). For listed buildings, removal may require listed building consent.



Image 49

This large timber barn has been adapted for domestic use at one end with an office at the other end leaving the central threshing area open. New freestanding pods which house services and storage have been inserted on either side of the entrance.

3.9 Services and thermal upgrading

Most adaptations will require the installation of water, electricity and other services. For domestic and most commercial uses the building will also need to be upgraded thermally.

Incorporating services and insulation into a historic farm building requires careful planning, not only to avoid compromising the building's significance but also to ensure that they are compatible with the way its fabric deals with moisture. These are structures that throughout their working life are unlikely to have had any heating or form of insulation. Adding them in the wrong way can therefore give rise to problems and defects that previously did not exist.

Most farmsteads are in isolated rural locations without access to mains drainage or gas. This often provides a cost-effective opportunity to incorporate renewable energy supplies and alternative forms of drainage into an adaptation project.

New incoming services such as electrical and telecommunication supplies can wherever possible be accommodated below ground to minimise impact on the setting. Special attention should also be given to the sensitive siting of their meter boxes.

In the absence of mains drainage septic tanks will need to be incorporated. Alternatively reed-bed filtration might be considered, along with a rainwater-harvesting system.

Storage tanks need to be carefully sited. If possible they can be buried below ground or carefully screened. If there is no mains water supply, holding tanks will also need to be located below ground. However, any significant excavation for services may require an archaeological investigation or a 'watching brief' (see [Recording](#)).

Careful thought needs to be given to how services are distributed within the adaptation, especially if masonry is exposed internally and there are no ceilings to conceal pipes and wiring.

New solid ground floors can accommodate perimeter service ducts, and it may be possible to use existing floor-drainage gulleys. Space at wall-plate level can also be useful for services distribution.

Waste pipework can be run and terminated internally wherever possible. A single badly placed vent pipe can have a significant impact on a large expanse of roof.

Fire

It is always advisable to install a fire alarm system into historic farm buildings, preferably a radio system to avoid wiring. The use of sprinkler or water mist systems can sometimes be used to avoid the internal subdivision of barns, particularly if there is a second floor level.

External lighting

External safety and security lighting should be discreet. To minimise its visual impact, it can be fixed to the building rather than free-standing.

The use of infra-red activation can be used, but there is always the chance that passing wildlife will trigger this unless the sensitivity is adjusted.

Heating

Conventional central heating systems with radiators are not particularly effective in farm buildings with high open spaces because heat rises and is lost in the upper parts of the space. Under-floor heating can often be a more efficient solution, with minimal impact on the fabric of the building.

Boilers with balanced flues can avoid the need for a projection through the roof slope. Domestic adaptations invariably incorporate open fires or a solid-fuel stove that requires some form of flue. A single flue carefully positioned can have a minimal impact, especially if it is painted so that it does not reflect sunlight.



Image 50
Domestic adaptations invariably incorporate a solid-fuel stove that requires a flue.

Renewable energy

The remote rural location of many farm buildings may offer the opportunity to incorporate renewable forms of energy supply. Heat pumps, solar panels and wind turbines may be possible if carefully sited. Internal east or south-facing roof slopes can be particularly suitable. Check with the local planning authority as to whether consent is required.

See our [website pages](#) for more information on renewable energy supplies.

Thermal upgrading

Any thermal modifications to an older farm building need to take account of how it performs as an environmental system – how it is affected by the weather, how it deals with moisture and how it is ventilated.

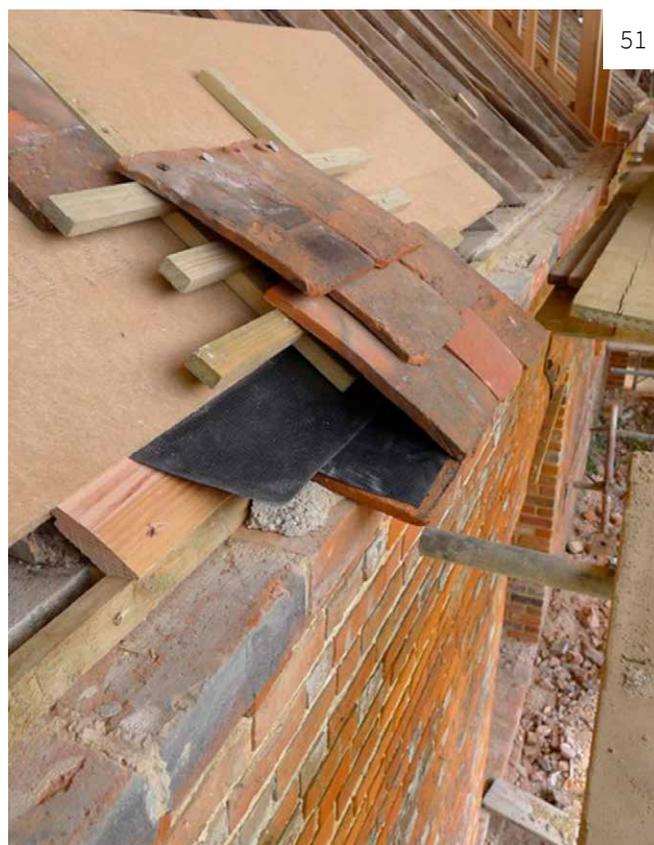


Image 51
If insulation is added above the rafters, careful consideration needs to be given to the detailing at the eaves.



Image 52

Wood-fibre insulation being installed to the walls and rafters of a farm building.

As well as minimising technical risks, adherence to the following guidelines will increase confidence that any harm to significance will be outweighed by demonstrable benefits.

- Avoid any actions that might cause the building envelope to deteriorate, particularly those that run the risk of trapping moisture from external or internal sources
- Avoid any actions that would compromise the building's use, for example by reducing air exchange to the extent that the quality of the indoor air becomes poor
- Give preference to the simplest measures practicable and implement them as well as possible

- The best solutions will tend to be robust, with minimal need for ongoing monitoring, management or maintenance, and capable of bringing year-round benefits. For example, window shutters can cut heat loss in winter and reduce solar gain in summer

For masonry structures, internal insulation is likely to be the most suitable option because it will avoid any impact on the external appearance of the building. 'Moisture closed' systems use impermeable insulation materials and vapour barriers to prevent moisture finding its way to the cold side of the insulation. By contrast, 'moisture open' systems use natural permeable insulation such as wood-fibre with no membranes.



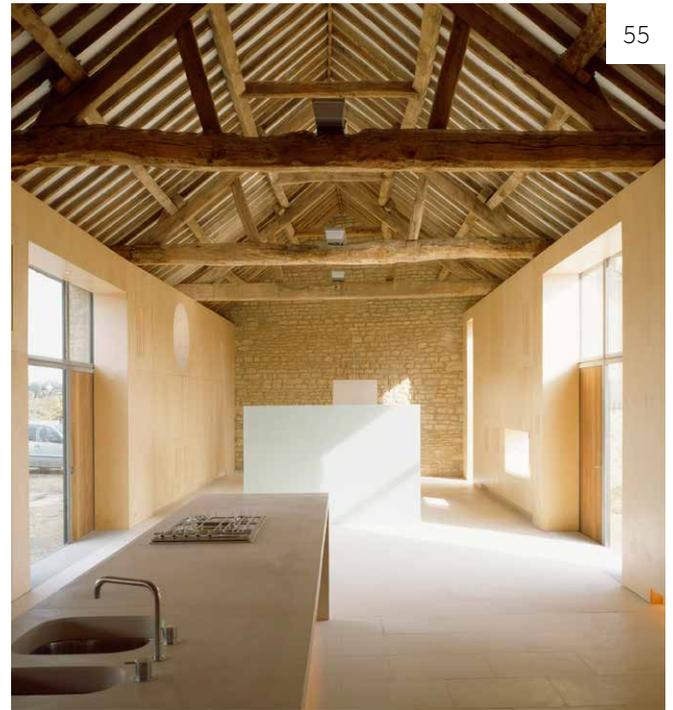
53

Timber-frame structures with an external finish of weatherboarding can usually be provided with permeable insulation to the voids between the timber frames. This can then be covered with a vapour-permeable membrane and a thin external cladding of tongue-and-grooved wood-fibre to reduce draughts to the outer side before the weatherboarding is replaced.

In buildings with exposed roof trusses and purlins, the insulation has to be placed either between the common rafters or above all the rafters. In the latter case this has the effect of raising the roofline, as counter-battens are needed to accommodate an eaves-to-ridge ventilation path. Many designers use an insulation that has a finished surface to the underside. This avoids the need to plaster around the exposed rafters. Alternatively, a material such as reed board can be added with a lime plaster finish on top of a permeable insulation material such as wood fibre.



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55 Insulation has been added to the side walls of this stone barn but the end wall has been retained with its original stone finish.

Images 53-55

53 Insulation being incorporated below weatherboarding.

54 Hemp-fibre insulation being added within a timber frame structure.

The ground floors for farm buildings may retain brick, thick clay tile or stone paving, sometimes with drainage channels. Every effort needs to be made to retain these types of floor feature even if the floor is to be upgraded thermally.

Solid floors can be insulated with lightweight expanded clay aggregate. Used with a hydraulic lime mortar to provide a solid slab, this form of construction allows a greater degree of permeability in the construction compared to a concrete slab with an impervious membrane, thus avoiding the risk of channelling damp into the masonry walls.

Care needs to be taken not to excavate too much material, otherwise the base of the foundations may become exposed and lead to a risk of structural failure. A trial hole would establish this information.

Historic England has a wide selection of guidance on improving the energy performance of older buildings: www.HistoricEngland.org.uk/energyefficiency

3.10 Minor buildings

Minor buildings can be put to good use as garages, storage or for new services with minimal alteration even if they do not form an integral part of the main adaptation works. They add significantly to the quality of the setting and with some modest repair and consolidation will be a resource for years to come.

Some can be difficult to convert without major change, particularly small-scale examples such as calf houses and pigsties, but others can be put to good use for parking, storage or services. Outbuildings with potential for reuse could be left as areas of possible future expansion, avoiding the need to introduce new structures in the future.

3.11 New extensions and buildings

Overtly domestic extensions such as porches and conservatories are alien in character and can rarely work successfully within the context of historic farm buildings. However, a carefully designed extension or new structure might be considered alongside a farm building if this will safeguard the significance of the main structure.

An extension or new building that houses ancillary functions that require a high degree of partition can leave an undivided historic space free from subdivision, thus protecting its character. Extensions for other uses, such as garages, are less easily justified, particularly if there are existing outbuildings that can usefully serve the purpose.

Whether contemporary in design or based on an existing structure, extensions and new buildings should be subordinate in scale and relate to the massing and character of the existing farmstead group. Maps, photographs and other historic images may record the scale, form and detail of significant lost buildings which can be considered for reconstruction.

Ideally new buildings can be sited on the footprint of lost buildings and/or be sensitive to the historic plan form, so careful thought needs to be given to their siting. The demolition of modern structures can allow space for a new extension, particularly if their removal enhances the group value.



56

Image 56

This small extension to a brick barn has a simple modern character that avoids domestic references.



57



58



59

Images 57-60

57 This carefully designed new extension has used the walls and footprint of an old piggery. A new link has been made to the main barn.

58-59 An archive and office have been inserted into the shell of a disused building on a working farm. Two new timber structures sit within the old walls with a new roof over-sailing each.

60 A new building for garaging with living accommodation over has been skilfully incorporated into this courtyard group.



60

4 Obtaining Consents

This section covers the various consents that may be required for works to adapt a farm building to a new use and the construction of any associated new structures.

4.1 Early consultation

Early assessment will always help to avoid confrontation later in the project. It can also address technical problems and help establish outline costs early on in the design process. Before submitting proposals to the local planning authority for consent, consider having a pre-application discussion with neighbours and other key stakeholders in the process.

Pre-application consultation with the local authority can also be useful in establishing what type of application will be required and the information the local planning authority will require in support of any future application.

If the building or farmstead lies within one of the national parks then the relevant national park authority will need to be consulted.

Such discussions could determine whether the significance of the site, its sensitivity and its capacity to accommodate change should be guided by an initial rapid appraisal or whether, for more complex and significant sites, it will require a detailed justification or conservation statement. This might also include specialised historic building recording or archaeological investigation to help the planning authority assess the impact of the proposals on the significance of the structure(s). An ecological survey to establish nature conservation interest may also be required (see [Wildlife and habitats](#)).

The role of Historic England

Historic England is the Government's advisor on the historic environment. We are consulted by local authorities and other bodies on a wide range of policy and development activities. Central to our role in the planning system is the advice we give to local planning authorities and government departments on development proposals affecting listed buildings, conservation areas, scheduled monuments and registered parks and gardens.

We have a network of staff across England with a wide range of skills, but it is neither possible nor necessary for us to engage with every planning issue. We will usually get involved only in schemes that include proposals with the potential for major change or damage to nationally important heritage assets.

Broadly speaking, Historic England must be consulted on:

- Listed building consent applications relating to a Grade I or II* listed building, or for the demolition or partial demolition of a Grade II listed building

- Applications for planning permission for developments which affect the setting of a Grade I or II* listed building and (in some circumstances) for developments which affect the character or appearance of a conservation area or registered park or garden
- All applications for scheduled monument consent

Historic England welcomes initial or pre-application advice for the above types of application. Before offering detailed advice we need a full understanding of the proposed works so that we can assess their impact. In some circumstances we also need to understand why the changes are proposed. Providing us with as much relevant information as possible at the earliest stage in the development process saves everyone time and money.

For more information see the Historic England advice note [A Charter for Historic England Advisory Services \(2015\)](#).

4.2 Planning permission

Change of use of any traditional farm building generally requires planning permission, though permitted development rights do exist under certain conditions (see [Permitted Development](#)). If the adaptation involves external works then planning permission may be required for that as well as the change of use. New structures will almost always need planning permission.

The acceptability of adaptation proposals is determined according to the principles set out in the National Planning Policy Framework (NPPF) and the local planning authority's Local Plan, which should take into account the historical significance, character, layout and location of buildings and their contribution to the landscape. Potential planning policy restrictions on new buildings or uses in the countryside mean that early consideration of the wider policy context is advisable.

As well as advice from Historic England, some local planning authorities produce their own guidance (including supplementary planning documents), which show how to assess sites and usually offer detailed recommendations about design features of proposed adaptations. Such guidance can offer a regional perspective on the key characteristics and local distinctiveness of farmstead and building types and their immediate settings, as well as examples of good practice.

Planning permission and listed building consent are the responsibility of the local planning authority, which is therefore best placed to provide advice concerning work on all types of traditional farm buildings. The planning authority may attach conditions to the planning consent.

The planning authority may also seek to control post-adaptation works by the withdrawal of permitted development rights and the use of Article 4 directions to control any curtilage development and to protect the setting in sensitive locations.

4.3 Permitted development

Since April 2014, permitted development rights have been extended to farm building adaptation. This applies to the conversion of buildings up to 450m² (to create a maximum of three dwellings) which have been used solely for agricultural use as part of an agricultural unit (from March 2013). These are not applicable to listed buildings, buildings in National Parks, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest.

Even if planning permission is not required the local authority still has to be notified to determine whether approval will be needed in relation to highways issues, noise impact, contamination risks, flooding risk and in particular questions of design quality.

Recording

Recording of traditional buildings may be required:

- In support of a planning application and to inform the development of a scheme, once an initial assessment and discussion with the planning authority has identified potential for change within a farmstead
- Once permission has been secured, to make a record before and during the implementation of the scheme. The local planning authority may attach recording conditions to a planning or listed building consent to ensure that a record of a farmstead or building is made that will be publicly available or for archaeological recording associated with ground works on the site

The level of recording should be proportionate to the known or potential significance of the building and site. More detailed assessment and drawings are often required for sites with designated heritage assets.

For buildings undergoing a change of use it is the last opportunity to record them in their original agricultural form. Where parts of an historic building are likely to be dismantled prior to repair, an accurate record of existing detail can help to avoid unnecessary loss of historic information. It is recommended that records should be sent to the county or district Historic Environment Record by the project manager or building owner.

Advice on the levels of recording appropriate to different kinds of structure is set out in the Historic England guidance [*Understanding Historic Buildings: A guide to good recording practice* \(2016\)](#).

The four levels are linked to the complexity of the building and the amount of repair required:

Level 1 is equivalent to the Site Assessment Summary set out in the Farmstead Assessment Framework (see [Section 2](#)). It is essentially a **basic visual record** supplemented by the minimum of information needed to identify the historic character of a site, including its layout, how it has changed, its landscape setting and the age and type of buildings within it.

Level 2 is a **descriptive record**, made in circumstances similar to those of Level 1 but when more information is needed. Both the exterior and the interior will be viewed, described and photographed. The record will present conclusions regarding the building's development and use, but will not discuss in detail the evidence on which these conclusions are based.

Level 3 is an **analytical record**, and will comprise an introductory description followed by a systematic account of the building's origins, development, and use. The record will include an account of the evidence on which the analysis has been based. It will also include all drawn and photographic records that may be required to illustrate the building's appearance and structure and to support an historical analysis.

Level 4 provides a **comprehensive analytical** record and is appropriate for buildings of special importance. The record will draw on the full range of available resources and discuss the building's significance in terms of architectural, social, regional, or economic history. The range of drawings may also be greater than at other levels.

A photographic survey differs from other surveys in that it provides a very full visual record, accompanied by a brief written account, but without an analytical or drawn survey at a comparable level of detail.

4.4 Conservation areas

Conservation areas are mainly centred on historic settlements, and will not often be of relevance to the owners of historic farmsteads. They introduce controls over demolition and works to trees, and limit permitted development rights for buildings so that planning permission is required for more works than is the case outside conservation areas. If there is also an Article 4 direction then more types of work can require planning permission. Local planning authorities can advise on the location and boundaries of conservation areas and the implications of development within them.

4.5 Listed buildings

Some 60,000 farmstead buildings are protected as listed buildings under the Planning (Listed Buildings and Conservation Areas) Act 1990 on account of their special architectural or historic interest. More than 95% of these buildings are listed Grade II and most of them are older and visually impressive farmhouses and barns rather than everyday working structures.

The [National Heritage List for England](#) provides details of listed buildings and other designated heritage assets.

Internal or external works that affect the character or interest of an individual or group of listed buildings will require listed building consent from the local planning authority (and planning permission for external construction or other significant works). The application survey drawings should make clear how much of the fabric is being repaired and what parts of the farm building are being renewed.

General maintenance and like-for-like repairs do not generally require permission, but local planning authorities may require a consent application for larger programmes of work, such as re-roofing. If there is uncertainty about the need for listed building consent, contact the local planning authority.

It is possible to apply for a Certificate of Lawfulness of Proposed Works (valid for 10 years) from the local planning authority which confirms that the works described in it do not affect the character of the listed building and do not therefore require consent.

Some buildings and other structures not mentioned on the List entry may still be protected if they are within the curtilage (the enclosed area of land around a dwelling) of the listed building, were constructed before July 1948 and are or were ancillary to the listed building. Structures which are attached to listed buildings may also be covered by the listing, even if this is not explicit in the related text. If there is any doubt the local authority can be consulted or a formal revision to the List entry can be requested.

Changes to unlisted buildings may affect the setting of nearby listed farmhouses or other listed structures. In such cases, if work to the unlisted farm building requires planning permission, in addition to considering matters of policy, the local planning authority also needs to have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. The unlisted building may be subject to curtilage listing.

4.6 Scheduled monuments

Some more important farm buildings are scheduled under the Ancient Monuments and Archaeological Areas Act 1979, and anyone wishing to do work likely to affect the monument must obtain scheduled monument consent (SMC) in writing from the Department for Culture, Media and Sport before commencing. Historic England gives advice to the government on each application and administers the consent system. Further advice regarding what it means when a monument is scheduled and what requires consent can be obtained from the relevant local Historic England team.

4.7 Other heritage assets

Some sites are of the same significance as scheduled monuments, but are not themselves scheduled. These are not subject to the need for scheduled monument consent but are considered as having the same importance in planning matters. The local planning authority would need to advise on whether this was the case.

4.8 Building Regulations

In almost all cases the adaptation of a farm building will involve what the Building Regulations term 'a material change of use' (Regulation 5). Where such a change occurs Regulation 6 sets out a number of areas where the building must be upgraded to meet current requirements. These include fire safety, ventilation, sanitation, energy efficiency, electrical safety and sound insulation. If the adaptation involves some form of public access then adequate access provision will also need to be considered.

In most cases the requirements in the Building Regulations require reasonable provision to be made, which gives a degree of flexibility in deciding what needs to be done. Early consultation with the local planning authority/conservation officer and the building control body to discuss the requirements will help with establishing how these can be met and the effect they might have on a building. The flexibility allowed by the Building Regulations means it is possible in almost all cases to agree a programme of work that would not harm the historic character of the building.

All buildings which are scheduled monuments are exempt from the Building Regulations. There are also exemptions for listed buildings and those within a conservation area where compliance with the energy efficiency provisions (Part L) would unacceptably alter the building's character or appearance. As well as exemptions 'special considerations' are included within Part L which take account of buildings which are locally

listed, in national parks or areas of outstanding natural beauty and those which are of traditional construction.

More information on Part L Regulations can be found in the Historic England guidance: [Energy Efficiency and Historic Buildings: Application of Part L of the Building Regulations to historic and traditionally constructed buildings](#)

4.9 Wildlife and habitats

Many species of wildlife live in or gain benefits from farm buildings and may be adversely affected by works of repair and adaptation. If any of them are legally protected, a licence will need to be obtained before the project is started.

The Wildlife and Countryside Act (1981) is the principal law protecting wildlife, habitats and species. It is supported by the Conservation of Habitats and Species Regulations 2010.

An ecological survey should be considered at the outset to establish the presence of any protected species such as bats, dormice, reptiles, predatory birds and any wild birds that are nesting. Where there are positive sightings of protected species or evidence of their occupation, advice should be sought from the local Natural England office and if necessary a licence obtained before the project is started. This licence may require measures to prevent disturbance of the species or its habitat, particularly during nesting and breeding seasons.

Farm buildings can become important habitats for birds and mammals (including bats). These can be further enhanced by the provision of nest boxes, improvement of eave and roof design, retention of rough surfaces and use of the small openings typical of farm buildings.

Farm buildings also serve as habitats for many species of plants, which should not be removed unless they are clearly causing physical damage or speeding up weathering.

Regular maintenance on a rolling basis is good for wildlife as only a proportion of the building is affected at any one time.

Additional consideration should be given to farmsteads adjoining or sited within or containing:

- Sites of Special Scientific Interest (SSSI), which are areas of land notified under the Wildlife and Countryside Act as being of special nature conservation interest
- Sites of Importance to Nature Conservation (SINC), which are designated by local authorities and thus subject to local planning policies
- Important hedgerows, which are protected from removal by the Hedgerows Regulations (1997)
- Special Areas of Conservation
- Special Protection Areas

4.10 Highways

Converting farm buildings for commercial use will often require consent from the highways authority for improved access to the public highway. In some cases a new access may be required. This will need to be sensitively considered because design standards intended primarily for suburban housing schemes are often inappropriate for rural settings.

Consent for highways work will usually form part a planning application for change of use.

5 Where to Get Advice

5.1 Local and national park authorities

Locally specific pre-application advice and local plan policies for traditional farm buildings can be obtained from the local authority and the national park authority if the farmstead or building lies within one of England's ten national parks.

National parks in England have two statutory purposes: to conserve and enhance natural beauty, wildlife and cultural heritage, and to promote opportunities for the understanding and enjoyment of the park's special qualities by the public. Some aspects of planning policy and legislation differ in relation to national parks and areas of outstanding natural beauty. National park authorities are planning authorities for land within the national parks.

5.2 Professional help

The amount of professional help required will depend very much on the size, complexity and nature of the work to the farm building and the kind of adaptation and repair that it needs.

It is advisable to choose a professional who has a thorough understanding of traditional construction and who knows how to conserve and enhance the historic character and significance of farmsteads, as demonstrated by examples of adaptive re-use projects that can be visited or clearly illustrated.

A good professional should be aware of the problems and pitfalls associated with the design and repair of such buildings. If the building is listed, unusually complicated or a candidate for grant aid for repair, then a range of expertise may be required.

Hiring experienced professional consultants can save time and be the best way to avoid 'cowboy' builders and problems with inappropriate or poor workmanship. The tasks that can be dealt with by professional architects and surveyors include:

- Surveys, including pre-application appraisal using the Farmsteads Assessment Framework
- Producing design schemes and obtaining consents and approvals
- Writing specifications of works that use appropriate materials and standards for repair
- Finding suitable builders
- Tendering works and deciding on a suitable contract
- Supervising works on site and administering the contract.

5.3 Historic environment specialists

There are specialists in the heritage sector who can provide advice and expertise on many aspects of a project from development planning issues to more specialist areas such as archaeological investigations or particular aspects of agricultural management and development. The Institute of Historic Building Conservation has a database of accredited practitioners from a variety of disciplines (www.ihbc.org.uk).

5.4 Architects

An ‘architect’ is a person whose name appears on the register held by the Architects Registration Board (www.arb.org.uk). There are other professional designers who are not registered architects but adopt similar titles such as ‘architectural designer’.

Only a small proportion of architects specialise in the repair of old buildings. Those registered as Architects Accredited in Building Conservation (www.aabc-register.co.uk) or on the Conservation Register of the Royal Institute of British Architects (www.architecture.com) have been assessed as having knowledge and experience in conservation work. The Society for the Protection of Ancient Buildings (www.spab.org.uk) also keeps a list of architects (and surveyors) experienced in the repair of traditional buildings. Architects can also carry out condition surveys.

An architect would be particularly useful for overseeing adaptation and repairs that are more complex, that require a number of different craft trades or involve a significant design element.

5.5 Building surveyors

Members of the Royal Institution of Chartered Surveyors (www.rics.org) have a broadly similar role to architects but are trained primarily in building construction rather than architectural design. An RICS Building Conservation Group has its own list of members accredited in building conservation. Building surveyors can also deal with condition surveys.

5.6 Structural engineers

Structural engineers deal primarily with defects in building structures including matters of ground movement. For buildings with any sign of structural problems, a structural engineer’s report will provide a sound basis from which to design a scheme of repairs.. The Institution of Structural Engineers (IStructE) and the Institution

of Civil Engineers (ICE) maintain a list of engineers accredited in building conservation (Conservation Accreditation Register for Engineers – CARE, www.careregister.org.uk).

5.7 Quantity surveyors

These professionals deal with the financial side of building work and contractual issues. Those who are members of the RICS are termed ‘chartered quantity surveyors’.

5.8 Ecologists

The Chartered Institute of Ecology and Environmental Management (www.cieem.net) has a professional directory of ecologists.

5.9 Builders and specialist contractors

It is worth spending some time choosing a builder. If an architect or surveyor is appointed, they should help find a suitable builder. If you are not employing a professional adviser for the works, it is important to find a builder with experience and knowledge of work to older buildings. Check references and see work they have carried out. Many elements of old buildings can be quite fragile, such as stone or joinery repair, and require specialist expertise rather than the skills of a general builder.

5.10 Specialist suppliers

There is a wide range of specialist suppliers who can help with the sourcing of traditional materials, ranging from lime products and earth blocks to ironmongery and specially matched bricks.

Reclaimed materials can sometimes help to retain the visual character of repaired and restored farm buildings. However, to avoid the risk of materials being stolen or taken from listed buildings without legal consent, it is important that they

are obtained only from legitimate suppliers. A statement of provenance could be requested at the time of purchase.

A number of suppliers adhere to the voluntary Salvo Code (www.salvo.co.uk/salcoinfo) Members undertake not to buy any item if there is the slightest suspicion it may be stolen or taken from a protected historic building without legal consent. Seller's details are recorded including proof of identity.

5.11 Further reading

Historic England research and guidance on farm buildings

Designation Listing Selection Guide: Agricultural buildings (2016)

Farm Buildings and Change on the Bolton Abbey Estate, North Yorkshire: A Character-based pilot study (2009)

Farmstead Assessment Framework: Informing sustainable development and the conservation of traditional farmsteads (2015)

Historic Farm Buildings: Constructing the evidence base (2005)

Historic Farm Buildings: Extending the evidence base (2009)

Historic Farmsteads: Preliminary Character Statements (a series of eight regional documents) (2006)

National Farmsteads Character Statement (2014)

National Farm Buildings Types (2014)

The Maintenance and Repair of Traditional Farm Buildings: A guide to good practice (2017)

Other Historic England advice and guidance

A Charter for Historic England Advisory Services (2015)

Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008)

Energy Efficiency and Historic Buildings: Application of Part L of the Building Regulations to historic and traditionally constructed buildings (2011)

Good Practice Advice Note 2: Managing Significance in Decision-Taking in the Historic Environment (2015)

Good Practice Advice Note 3: Setting and Views (2015)

Historic England Advice Note 2: Making Changes to Heritage Assets (2016)

Listed Buildings and Curtilage (2016)

Practical Building Conservation
www.HistoricEngland.org.uk/PBC

This series of fully illustrated books published by Routledge provides detailed guidance on understanding, deterioration, assessment and care and repair:

Basics (2013)

Building Environment (2014)

Concrete (2013)

Earth, Brick & Terracotta (2015)

Glass & Glazing (2012)

Metals (2012)

Mortars, Renders & Plasters (2012)

Roofing (2013)

Stone (2012)

Timber (2012)

Repointing Brick and Stone Walls: Guidelines for best practice (2017)

Understanding Historic Buildings: A guide to good recording practice (2016)

Wildlife

Barn Owl Trust, 2015. *Barn Owls and Rural Planning Applications: A guide*. Ashburton: Barn Owl Trust

English Heritage/National Trust/Natural England 2009. *Bats in Traditional Buildings*

Mitchell-Jones, A J, 2004. *Bat Mitigation Guidelines*. English Nature

National Trust, 2013. *When Nature Moves In- a guide to managing wildlife in and around buildings*. London: National Trust

Bat Conservation Trust, www.bats.org.uk

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Other advice and guidance

Boutwood, J, 1991. *The Repair of Timber Frames and Roofs*. Technical Pamphlet 12. London: Society for the Protection of Ancient Buildings

British Standards Institute, 2013. *Guide to Conservation of Historic Buildings* (BS 7913). London: BSI

Building Conservation Directory. A range of articles are available on many aspects of the care and repair of older buildings at www.buildingconservation.com.

Cadw and Monmouthshire County Council, 2004. *Converting Historic Farm Buildings in Wales: A guide to good practice*. Cardiff: Cadw & Monmouthshire County Council

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Society for the Protection of Ancient Buildings, 1982. *Barns Book*. London: SPAB

Society for the Protection of Ancient Buildings, nd. *First Aid Repair to Traditional Farm Buildings*, Information Sheet 7. London: SPAB

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