

The predominant farmstead plan types, which are closely related to farm size, terrain and land use, are listed below. There are many variations on these themes, particularly in the manner in which fully evolved plan groups can, as a result of successive rebuilding, contain elements of more than one plan type.

5.1.1 LINEAR PLANS

This group comprises farmsteads with farm buildings attached to, and in line with, the house. It includes some of the earliest intact farmsteads in the country.

The earliest examples of linear plans are *longhouses*, which served as dwellings for farmers' families and housing for cattle. Each longhouse had a common entrance for the farmer's family (accommodated at the up-slope end of the building) and livestock, the cow house being marked usually by a central drain and a manure outlet at the lower gable end. Longhouses were often found grouped together and associated with strip farming of the surrounding fields. Documents and archaeological excavation indicate that they had a widespread distribution in the north and west of the British Isles in the medieval period, but that in much of lowland England they were either absent or being replaced by yard layouts with detached houses, barns and cow houses from the 14th century (see, for example, Gardiner 2000 and Figure 17). Such re-buildings are commonly believed to be associated with the decline of smaller peasant farmers and the emergence of a wealthier peasant class. Longhouses, and their variant types with separate entrances for livestock and farmers, continued in use in parts of the South West, the Welsh borders and the northern uplands and vales into the 18th and 19th centuries. Those built in or before the 17th century were originally entered from a passage, which also served as the entrance to the house. However, during the 18th century social pressures led to the provision of a separate dividing wall and byre door, and to the demolition of some byres and the conversion or rebuilding of others to domestic or new agricultural use (barns, for example). The piecemeal rebuilding and conversion of both lower end and house-part that this permitted tended to discourage total reconstruction, inevitably limiting the ability to respond effectively to changing requirements. These later changes are clearly visible in the buildings, as is evidence about the size and layout of the original byres, and of the arrangement of the passage (against which the stack heating the main part of the house was positioned) that once formed the common entrance to these longhouses as a whole. The initial dominance of the longhouse in some areas is significant, since, as a house type capable of almost infinite adaptation, it exerted considerable influence on the subsequent evolution of farmsteads.

Linear layouts (including the *laithe house* of the Pennines) are now most strongly associated with the hill farms of northern England (North East, North West and Yorkshire and the Humber). A major reason for the persistence of the layout in northern England was that it was suited to smaller farms (of 50 acres or less) needing fewer buildings – other than for the storage of subsistence levels of corn for the household and livestock, and the housing of some milk cattle, poultry and pigs. The close proximity of farmer and livestock during the winter months was another factor, cattle being stalled indoors from October to May. It was also a layout ideally suited to building along the contours of a hillside and so this farmstead plan remained in use in upland areas of England into the 19th century.

Linear plans have often evolved as a result of gradual development, for example in the rebuilding of a lower end for the cattle as service area for the house, and the addition of new cow houses, stabling and barns in line. Linear layouts will often be associated with loose scatters or even yard arrangements of other farm buildings.

5.1.2 PARALLEL PLANS AND L-SHAPED PLANS

These invariably enclose two sides of a yard, and often represent developments from earlier linear plans, if they have not been constructed in a single phase. L-shapes often evolve from the addition of a barn or byre to an original linear farm, or can represent the partial re-organisation of a dispersed plan. They are typically found on farms in the 50- to 150-acre bracket, and can be formal or highly irregular in appearance, with or without scatters of other farm buildings.

5.1.3 DISPERSED PLANS

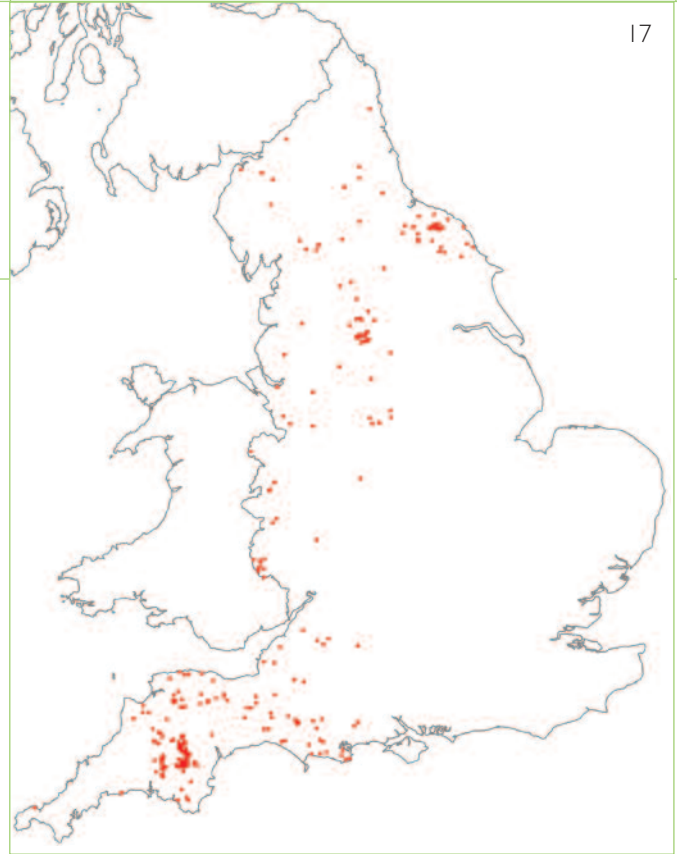
The buildings of this group appear to be arranged haphazardly around the farmstead. Dispersed plans are typically found on smaller farms in stock-rearing or dairying areas, where a large straw yard for cattle was not required. They can range in size from the very small – for example a farmhouse and combination barn – to large groups of two or more blocks or individual structures, some or all of which may combine a variety of functions.

5.1.4 LOOSE COURTYARD PLANS

This group is characterised by single or double yards flanked by buildings on three or four sides, with or without scatters of other farm buildings close by. There are excavated and documented examples of this layout dating from the 13th century (in Hallam 1988, pp.860, 889) associated with: the base courts of large baronial and episcopal establishments; with moated manorial sites (where the farm buildings were arranged either within or outside the moat); and with the farms of an emerging wealthier class of peasant, the latter often replacing two or more previous steadings with

17 Distribution of listed longhouses in England. Surviving longhouses – some of which have been recognised as such in listing descriptions – represent only a small proportion of a building type that was once prevalent across large parts of western and northern England. The concentration of a fine group of surviving longhouses on the eastern fringes of Dartmoor is particularly prominent. Recent research has shown that in some areas such as north Yorkshire many village-based farmhouses have longhouse origins that have previously not been recognised.

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longhouses (Le Patourel in Miller 1991, pp.843–65). This plan became most strongly associated with large arable farms: for example, many farmsteads on the downlands of southern England have one or more barns providing shelter to a south-facing yard (as recommended but not always followed), typically bordered by a stable, granary and later shelter sheds.

5.1.5 REGULAR COURTYARD PLANS

Formal courtyard layouts, where the barns, stables, feed stores and cattle shelters were ranged around a yard and carefully placed in relation to one another in order to minimise the waste of labour, and where the manure could be conserved, were recommended from the mid-18th century and many are documented from this period, although no surviving groups can be dated before the 1790s. The earlier examples are courtyard or U-plan with the barn forming the central block, and shelter sheds, stables and enclosed cow houses the two side wings. The fourth side was no more than a wall with a gateway, or contained further sheds or smaller buildings such as pigsties, or was distinguished by a house (usually looking away from the yard). From the 1820s and 1830s, extra yards made E or even double-E plans.

The ultimate examples of courtyard farmsteads are the planned and model farms of the late 18th- and 19th-century estates (Figure 18), the ideas for which were widely disseminated in textbooks and journals (Wade Martins 2002). They are generally associated with holdings over 150 acres, and are far less likely than the other plan types to be associated with other loose scatters of buildings.

5.2 FACTORS INFLUENCING FARMSTEAD CHARACTER

The occasional merging of plan types can make the variations on these principal themes seem almost infinite. The identification and analysis of the broad patterns of plan types can reveal much about the impact of the factors that influence farmstead character.

5.2.1 FARM SIZE

Generally, larger holdings were more likely to be provided with larger and/or more buildings. In the 18th and 19th centuries, the 'contemporary rule of thumb was that a man was needed for every 25 or 30 acres of arable and every 50 or 60 of pasture' (Mingay 1989,

p.953). Statistics on the numbers of farms by size can be misleading: although 71% of holdings were under 50 acres as late as 1880 (Howkins 1994, p.53), the proportion of land area taken up by small farms was much smaller and regionally very varied. By the 1850s, medium-size farms – typically mixed arable holdings – were between 100 and 299 acres, and occupied nearly half of England's acreage; as much as one third was taken up by large farms of over 300 acres, these being best placed to invest in 'High Farming' (Mingay 1989, p.950). Farms of 500 acres and above were found on the chalk downlands of southern England, and in the Lincolnshire and Yorkshire Wolds: 1000 acres was not uncommon in these areas (Prince in Mingay 1989, p.82). These farms had greater access to capital and were usually associated with corn production, which typically demanded more labour for carting, harvesting and threshing and increasingly for yard and stock management: strawing-down yards, lifting the heavy manure-laden straw into middens and carts and spreading it on the fields. Smaller farms, typically found in dairying and stock-rearing and fattening areas, required fewer large buildings and were less likely to have the capital to expend on rebuilding farmsteads to fit with developing agricultural practice. The very smallest (of under 50 acres) thrived in fruit-growing and market-gardening areas (often clustered around urban sites), and in locations such as west Cornwall and the Pennines where there was gainful by-employment in industry – for example the weaver-farmers of the West Riding linear-plan farms, noted by Caird (1852), who kept dairy cattle on holdings of around 20 acres, supplying nearby towns with milk (Mingay 1989, p.940).

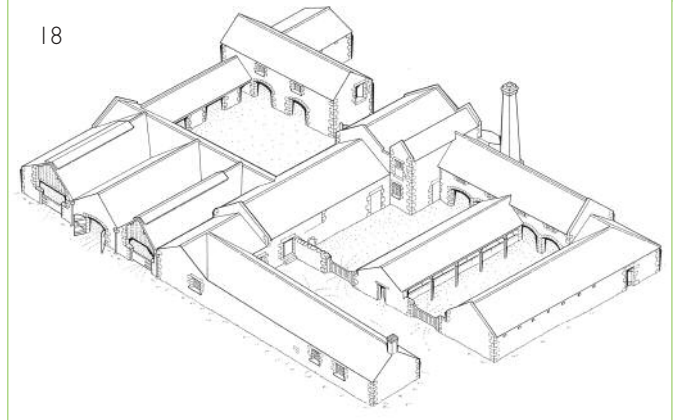
5.2.2 ESTATE POLICY

Estates, and landlords and their agents, have been very important in English rural history, with tenants occupying some 85% of the farm area until the land transfers of the early 20th century mentioned in 4.1.4 above (Mingay 1989, pp.943–4). The character of an area thus can be strongly influenced by the estate of which it was part. Family insignia, estate-made bricks and the styling of cast-iron windows or ventilation grills can all give a unity to buildings over several parishes and this is as true of farm buildings as of cottages and village schools. Typically, and observable from 1350 onwards (Le Patourel in Miller 1991, p.846), improvements by landlords were aimed at attracting good tenants in either times of plenty (when capital expenditure could secure an increase in rent) or depression (when it could forestall a decrease). By the mid-17th century, home farms were being developed as examples of best practice for tenants. Between 1650 and 1750 landlords assumed increasing responsibility – in comprehensive lease agreements – for fixed capital works (particularly barns and houses) and after 1750 the influence of estates can be seen in the planning and design of buildings and entire complexes for home farms and tenant farms (Thirsk 1985, pp.72, 235; Thirsk 1967, pp.680–81; Wade Martins 2001). Estates often erected new buildings in order to attract tenants with the working capital to invest in their land and thus, through increased productivity, maintain rents at a high level. The policies of larger estates often discriminated against smaller holdings and the maintenance of their buildings. County studies (for example, Wade Martins 1991) have demonstrated how varied estate policy in similar areas could be, despite the rise of the land agent as a professional class, increasing access to farming literature and the ironing out of many inconsistencies in estate practice by around 1850. The small estate is less well understood (e.g., Collins et al 1989).

5.2.3 LOCAL VARIATION OF FARMING SYSTEMS

The type and form of built fabric display regional variations that are more firmly linked to the broad pattern of land use and its landscape context (whether wood pasture, enclosed or open landscapes). In East Anglia the older timber-framed, evolved farmstead groups with ample barn provision and multi-functional buildings are associated with the small, well-hedged fields typical of the wood-pasture regions, while the large planned farms of brick or brick and flint are found on the later enclosed areas of heath (Wade Martins 1991; Wade Martins & Williamson 1999). The differences within Wiltshire are also clearly demonstrated by the farm buildings: the chalkland typically has loose courtyard plan steadings with their large-scale barns serving specialist corn and sheep husbandry; the smaller farms associated with dairying and cheese production in the northern wood-pasture area are of a more dispersed plan (Slocombe 1989). The yard management of stock

18 A large regular courtyard plan (North Northumberland Coastal Plain Character Area), dating from the early to mid-19th century and placed within a landscape affected by large-scale reorganisation and enclosure from the 18th century. This large farmstead was devoted to fatstock housing and incorporated three open yards lined with hemmels and a covered yard with a root store (left, with open doors). The farmstead also incorporated a stationary steam engine, which would have powered threshing machines, as well as fodder-preparation machines such as chaff cutters and cake breakers. © English Heritage



also displayed a strong variation dependent on regional or estate practice. Thus the long-established practice of buying store cattle in spring and selling them on in the autumn survived longest in areas with rich grasslands, such as the Somerset Levels and the east Midlands, in contrast to Norfolk and the eastern lowlands where yards were filled over winter, even during the lean years for the beef industry in the 1930s (Whetham 1978, pp.290–91).

5.2.4 INTERNAL WORKINGS OF THE FARMYARD

The layout of the farmyard should firstly be seen in relationship to its immediate setting: of crop storage and processing buildings to the fields; of yards, platforms for corn, haystacks and cart sheds to trackways. Secondly, an important characteristic is the degree to which the layout of the farmstead was related to function. The planning of farmsteads to maximise efficiency engaged an increasing number of writers from the 1740s, who generally rated traditional layouts poorly against the perceived benefits of ordered and ideally planned layouts that minimised, for example, the time it took to process a stack of corn, transport the straw to the cattle yard and grain to the granary or mixing room. Many such writers, however, did not display sufficient understanding of the other factors – land use, terrain, weather, farm size, location in village or open countryside – that dictated layout. The most comprehensive analyses of local farming systems in relationship to farmstead layout are contained in Barnwell & Giles (1997).

5.2.5 DEVELOPMENT OF FARMING SYSTEMS

Archaeological evidence from deserted medieval settlements has shown how linear plans, including longhouses, were replaced by loose courtyard arrangements as owners prospered and their holdings grew larger (Lake 1989, pp.81–2; Gardiner 2000).

Evidence from the tithe maps and first-edition 25-inch maps for sample Norfolk parishes showed that nearly half the farms were of an irregular layout in 1840 with very few regular E- or U-shaped courtyard plans. By 1880 dispersed layouts had reduced to an eighth, with E- and U-plans accounting for about a quarter of farms (Wade Martins 1991, p.199).

5.3 FARMSTEAD PLANS IN THE EAST MIDLANDS

A distinctive and important regional feature is the number of farms that after enclosure remained based in the centre of villages rather than being moved out into newly enclosed fields. At Aynho, a village on the southern edge of the Northamptonshire Uplands, the farmsteads had by the 17th century been pushed to the edge of the village (Cooper 1984, pp.133–5). The failure to move the farms out to the enclosed land was criticised by the early 19th-century commentators: 'As the old buildings wear out, it will be found convenient and proper to remove them to the centre of occupations' (Pitt 1813, p.6). In Northamptonshire it was reported that 'In some villages you will not see a good farm homestead; the houses are low with small barns and stabling, ill-contrived yards, with miserable accommodation for cattle and pigs; all the buildings covered with thatch, and often very dilapidated' (Bearn 1852, p.86).

5.3.1 LINEAR PLANS

Some buildings in Derbyshire have been tentatively identified as longhouses (Hutton 1991, pp.8–9).

Linear plans with house and farm buildings attached, but no cross passage or inter-connection between the domestic and agricultural parts, are found throughout the Region (see Figures 20A and 20D). They are particularly associated with the Peak District, the Peak Fringe and Derwent Valley, and the lowland landscapes in the north west of the Region. They continued to be built into the 19th century in other parts of the Region too, in the Northamptonshire Uplands for example.

Typical of the central Pennines and also extending into the north-west part of the Region, laithe houses were built from the mid-17th century (with a concentration in the 1780 – 1840 period) and were designed to serve farms of about 30 acres, being frequently associated with holdings whose occupiers gained income from alternate and frequently industrial means of employment – primarily textiles, but also lead working (Brunskill 1987, pp.106–10). The house and farm buildings are usually of one build, the latter typically comprising a barn (hay and corn) with stabling and a cow house (often for as little as six cattle) at the lower end. Houses with attached barns under the same roof are also recorded in north Northamptonshire, as well as in-line plans with the buildings not under the same roof.

These farmsteads are thought to represent the farms of smallholders (RCHME 1984, p.lxix).

Although most commonly found in the Lancashire and Yorkshire Pennines, there are several farmsteads in Northamptonshire that have the same arrangement, for example a house and barn at Easton-on-the Hill arranged under the same roof that is shown in a survey of 1742 (RCHME 1984, p.lxix).

5.3.2 L-PLANS, PARALLEL AND DISPERSED PLANS

These plans are found throughout the Region. In the Northamptonshire Uplands and Vales, for example, barns were detached or lay at right angles to the house, forming an L-plan (RCHME 1984, p.lxix). Surveys of north Northamptonshire in the 16th and 17th centuries show that most farms and cottages had barns and by the 17th century probate inventories distinguish between barns and more impermanent and so-called 'hovels' for cattle (RCHME 1984, p. lxxvii). The smaller dairy farms on the midland clays typically included a scattered group of buildings around a yard where cows were kept overnight. In a survey of part of South Lincolnshire the earliest buildings located were 18th century and comprised mainly barns and stables, often representing the first phase of post-enclosure investment. Tithe map evidence suggests that these buildings could stand detached or form parallel linear ranges and that there was little evidence of planning in their arrangement or in the creation of a yard. (Barnwell & Giles 1997, pp.45–7).

5.3.3 COURTYARD PLANS

Larger courtyard plans are found throughout the Region, including the larger village-based farms in landscapes such as the Northamptonshire Uplands. They are most strongly associated with areas subject to large-scale post-1750 enclosure. About twenty farmsteads in and around the Southern Lincolnshire Edge were rebuilt between 1847 and 1870 for Sir Christopher Turnor of Stoke Rochford Hall. Their unusual layout comprised an external 'U' enclosing yards on an E-plan and linked to the outer range through a central straw barn (Wade Martins 2002, p.143). Other courtyard plans evolved over time into their present form, such as the carefully-planned steadings built by the Strutt family of industrialists to supply Belper with meat, malted barley and dairy produce (Wade Martins 2002, pp.94–9).

In response to the agricultural depression of the late 19th century some of the large estates tried to spend their way out of depression, either by using their own money or borrowing from the land-improvement companies to build cattle yards and sheds to house the livestock, which was the only form of farming that remained profitable. The more expensive schemes included covered yards as on the Dysart estates in Lincolnshire (Barnwell & Giles 1997, pp.57–8).

6.0 Key Building Types: Crop Storage and Processing

The analysis of key building types presented here could be presented by function rather than building type, as many functions relate to parts of buildings or parts of entire ranges or farmstead types. As the relationship between farmstead form and function has been outlined in Section 5, Section 6 will comprise a conventional overview of the key functional types. It will be noted in some regions that so many of these functions are combined in one combination barn or farmstead type that they cannot be easily teased out as a separate theme. Nevertheless, the national framework sections do present an overview of on-farm functions, and where relevant their rarity and survival, that are applicable nationally.

6.1 BARNES

6.1.1 NATIONAL OVERVIEW

In the British Isles and other parts of northern Europe, the harvested corn was often stored and processed inside a barn. After threshing – typically a process that occurred gradually over the winter months – the straw usually remained in the barn awaiting its use as bedding for livestock, while the grain destined for market or next year's seed would be stored either in the farmhouse or in a purpose-built granary.

Barns are often the oldest and most impressive buildings on the farm and are characterised by:

- Internal space for the storage of the unthreshed crop and an area (the threshing floor) for beating by flail the grain from the crop and for winnowing the grain from the chaff in a cross draught. This was also an area for the storage of straw after threshing.
- Externally, typically large opposing doors on the side walls to the threshing floor; although the size of openings is subject to much regional variation. Barns on large arable farms commonly had large threshing doors, sometimes with porches, into which a laden wagon would draw up and unload the crop. In some parts of the country the crop would be forked into the barn through pitching holes, and the threshing doors would be much smaller. Small winnowing doors sufficed in many pastoral-farming areas.
- Blank external walls, in mass-walled buildings often strengthened by buttresses or pilasters. Mass-walled barns usually had ventilation slits or patterned ventilation openings, and the wattle or lath infill to timber-framed barns was often left exposed. In some

areas, the crop would be unloaded from a cart or wagon into the barn through pitching holes.

The distinctive form and plan of barns remained comparatively little altered between the 13th and 19th centuries. Surviving pre-1750 barns represent only a small proportion of the original population, their date, scale and landscape context being major factors in determining their survival. There is only one complete survivor of the 2–2,900 tithe barns that existed on Cistercian estates in the pre-1550 period (Brunskill 1982, p.35). Local studies have indicated that small and pre-18th-century barns are most likely to survive on farm holdings of less than 150 acres that have not experienced major growth in subsequent centuries (Wade Martins 1991, p.160). These are concentrated in landscapes of ancient enclosure, improving estates and the process of enclosure in the post-1750 being linked to often wholesale rebuilding.

Major variations were in the five following areas.

6.1.1.1 Plan form

In the most common form of plan the threshing floor was in the centre, although it could be sited off-centre or at one end. A greater span was enabled by aisled barn construction, either in single or double aisles. This was common in East Anglia and the South East (Rigold 1971 and 1973), and for high-status buildings outside that area, including a group mostly dating from between 1570 and 1650 in the Pennines (Clarke 1972 and 1974).

Outshots or projecting lean-tos were commonly added to barns, for housing carts, livestock and other functions. The number of additional external openings indicates accommodation for other functions, ranging from minor doors enabling the barn to house functions such as clipping sheep when empty, to lofts and stabling,

19 Power in barns: national examples

- A & B A projecting horse engine house that contains a rare example of an in situ horse gin. (North West Norfolk)
 - C A water wheel, providing power to the feed-processing machinery in a home dairy farm, remodelled in the 1890s. (Breckland)
 - D A farmstead that incorporated a fixed steam engine to drive threshing and other crop- and fodder-processing equipment. (Bedfordshire and Cambridgeshire Claylands)
 - E A large combination barn range built in 1866 incorporating a granary, cart shed and threshing barn. The latter has an iron wheel to take belting from a portable steam engine placed outside the barn for powering the threshing machine inside. (Lincolnshire Wolds)
- All © English Heritage / Michael Williams



6.1.1.2 Size

Barn size can be strongly indicative of the former extent of arable and holding size, ranging from very small in dairying or stock-rearing areas, to very large on the much larger holdings of arable areas. The practice of mowing rather than cutting by sickle the corn crop, widespread by the 19th century, also had an impact on barn size, as large quantities of straw – ready for feeding cattle in the yard – would need to be accommodated.

In the medieval period it was common practice to house all the crop in the barn, but in later centuries the unthreshed crop could be raised off the ground by a platform or by staddle stones (see 6.2 and Figure 22), and stored in an open yard (rickyard) or a staddle barn. Examples of the latter, typically of late 18th- to early 19th-century date, survive on the downland farms of Hampshire, south Wiltshire and east Dorset. Ricking was not common in southern England until the 19th century, but was noted by observers as being common

in northern England and Staffordshire in the 17th century (Colvin & Newman 1981, p.97; Peters 1969, p.65).

6.1.1.3 Combination Barns

There is increasing evidence in many parts of the country for threshing barns to have originated from at least the 17th century as combination barns, which incorporated other functions in the main body of the barn such as the housing of livestock. These ranged from the end bays of the barn to the aisles of Pennine barns or the ground floors of split-level buildings (Figure 20). Multi-functional two-level barns, including bank barns and their variants, were increasingly adopted from the late 18th century (and noted by the writers of the county reports for the Board of Agriculture) – often along with the introduction of mechanisation – in many areas of England (Barnwell & Giles 1997, p.156).

6.1.1.4 Evidence for mechanisation

The introduction of machine threshing after its invention in 1786 led to the erection in existing barns of additions to house machinery, for chopping and crushing fodder as well as threshing grain. Early machines were powered by horse engines in special-purpose semi-circular buildings, which projected from the barn and were commonly known as 'gin gangs' in the north of England. Steam, water and wind power were also used (Figure 19). The uptake of machinery varied across the country. In areas where labour was expensive mechanisation found favour; horse engine houses and evidence for water power being most common in the lowlands of Yorkshire and the Humber and the North East, in parts of the West Midlands and in the South West peninsula (especially Cornwall). In the southern counties, where labour was cheap and abundant until the 1850s or later, few barns bear evidence for the introduction of machinery (Hutton 1976).

From the early 19th century the traditional barn began to be replaced by large multi-functional buildings with threshing and fodder-processing areas linked to granaries, straw storage and cattle housing. These could project from the north of courtyard plans (as was common in Northumberland) or be integrated into other types of plan. In some areas, such as the eastern lowlands from Nottinghamshire northwards, the barn was from the 1850s reduced to a small feed-processing room (Figure 22, bottom).

The introduction of the portable steam engine and threshing machine meant that tackle could be taken to the stack. This was widespread by the 1850s, and heralded the end of the traditional barn as a processing building. Features relating to the use of power are highly vulnerable and rare, particularly horse wheels.

6.1.1.5 Evidence for reuse and adaptation

Careful inspection of barn interiors may reveal evidence for reused timbers (a common practice), in addition to former floors, partitions, doors and windows. This may well indicate that a present open space was divided off at one end or even provided with an additional floor. The high point of barn building occurred during the 18th and early 19th centuries, as grain yields rose and new land came into cultivation. Additions were commonly made to existing barns or additional barns built. It is also likely that where a barn was originally multi-purpose, the animal housing was removed and a separate barn or cow house built.

Mechanical threshing had removed the need for a threshing floor and the uses to which the barn was put changed. As cattle gained in importance at the end of the 19th century barns were converted into mixing houses for fodder. The introduction of steam-powered machinery (whether fixed or mobile) usually involved the cutting of a hatch in the barn wall in order to allow belting to enter. Alterations might well involve the dividing of the building with partition walls and floors.

6.1.2 BARNs IN THE EAST MIDLANDS (Figure 20)

6.1.2.1 Threshing Barns

Other than a small number of barns associated with medieval monastic institutions, some of the earliest barns in the Region are to be found in the north-west of the Region. Here three- or four-bay cruck-framed barns of 15th- to 17th-century date survive, part of a group extending into the Lancashire and Yorkshire Pennines. Another major concentration of pre-1750 barns – predominantly in stone and to a lesser extent in timber frame – can be found extending from the Kesteven Uplands across High Leicestershire and the surrounding clay vales into the Northamptonshire Uplands. The great majority are unaisled and of five bays, although some larger barns of between eight and eleven bays of a similar date range are found, particularly in Leicestershire. These distributions closely relate to the distributions of surviving larger farmhouses in this area (Barley 1961, pp.103, 151–3).

The early barns associated with smaller open-field arable farming have rarely survived. The majority of existing barns in the Region date from the later 18th and 19th centuries and are typically built of either the local stone or red brick. They are generally smaller in scale than those of the neighbouring East of England and South East Regions. This may be due to the relatively late survival of open-field farming across much of the Region where many land-holdings were small and there were many freeholders and tenants. Enclosure was often accompanied by improved standards of building, with brick, tile and slate replacing mud, stud and thatch in

20 Barns in the East Midlands Region

- A An early 17th-century timber-framed barn with upper crucks in Leicestershire. The herringbone brick panels are original. (Leicestershire and Nottinghamshire Wolds)
- B A combination barn with animal accommodation either side of the threshing bay – the larger opening to the right is a modern intervention. (Dark Peak)
- C A mud- and stone-built late 18th- or early 19th-century threshing barn. (Northamptonshire Uplands)

- D A linear farmhouse, barn and cow shed range. Linear ranges, including those of laithe house form with house and barn under one roof, are found across much of the Region. (White Peak)
 - E Brick-built threshing barn with a pantile roof, characteristic of much of the north-eastern part of the Region. (Trent and Belvoir Vales)
 - F A village-based house and barn of the 17th century. (Northamptonshire Vales)
- A, B and E © Susanna Wade Martins; C © Alison Smith; D Bob Hawkins; F © Jeremy Lake



20A



20B



20C



20D



20E



20F

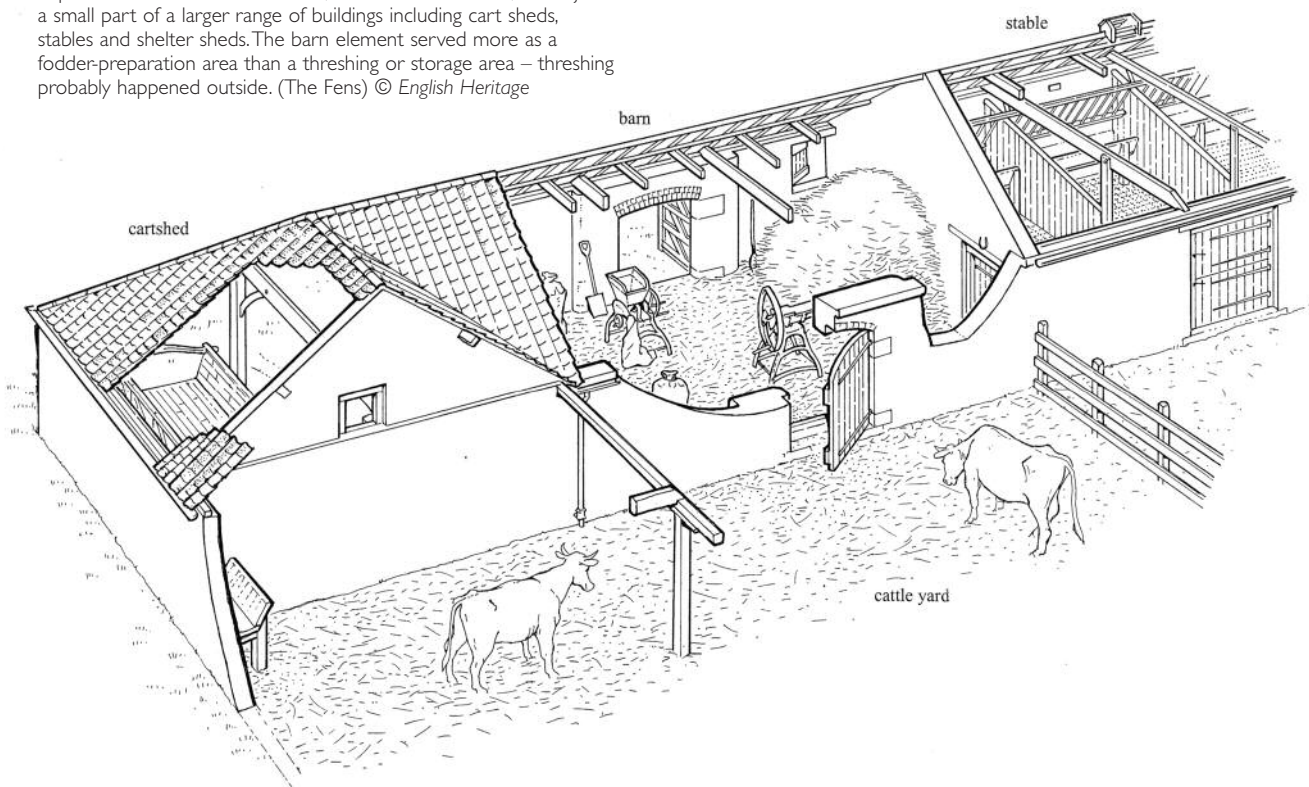
the areas where there was no good building stone (Mingay 1984, p.123). In open-field areas there is documentary and archaeological evidence for 'rick places' – raised platforms sited in the fields for storing the unthreshed crop (Hall 1995, p.28). By the 18th century, it was standard practice in much of the Region to house the entire crop before threshing (Pitt 1813, pp.26–27) The general move to pastoral farming after enclosure required only small, often brick-built barns that rarely had more than one threshing floor. It is also

probable that the new generations of combination barns and then mixing barns that appeared in the early to mid-19th century in much of the Region swept earlier structures away.

6.1.2.2 Combination barns

Across the north of the Region, in common with the Pennine areas of the North West and Yorkshire and Humber Regions, combination barns dating from the 17th century are found, often with barn, stabling and

21 In the age of mechanical threshing the barn was reduced in importance. This Lincolnshire barn, on a fenland outfarm, forms just a small part of a larger range of buildings including cart sheds, stables and shelter sheds. The barn element served more as a fodder-preparation area than a threshing or storage area – threshing probably happened outside. (The Fens) © English Heritage



cow housing in one range. From the late 18th century, many barns were built as part of a range with the threshing area flanked by animal housing.

A very small number of bank barns, more typical of the North West Region, are found in the Derbyshire Peak District. Variant bank barns, built along rather than across the slope, date from the 18th and possibly 17th centuries. See North West Region for more on bank barns.

6.1.2.3 Mechanisation

The Lincolnshire Wolds was one of the most highly industrialised farming areas in the country, sharing characteristics with the Yorkshire Wolds and the Northumbrian Coast. Major reorganisations of the landscape involving enclosure, engrossing of holdings and the creation of new farmsteads, often by large landowners, meant that many farmsteads were built to employ mechanisation.

The introduction of mechanisation – and particularly the portable threshing machines that enabled outdoor threshing from the 1840s – led to the appearance of new generations of mixing barns, which stored the threshed grain and processed fodder (Barnwell & Giles 1997, pp.42, 49–51 and Figure 21).

Elsewhere in the Region mechanisation in farmsteads is not a common feature. Only in isolated cases was power incorporated in farmsteads, such as on large estates or in farmsteads that were built using contemporary factory

design to increase efficiency. A group of farmsteads owned by the industrialist Strutt family near Belper in Derbyshire variously incorporated both steam and horse engines (Wade Martins 2002, pp.94–100).

6.2 GRANARIES

6.2.1 NATIONAL OVERVIEW (Figures 22 & 23)

Once threshed, grain needed to be stored away from damp and vermin. It would be sold off the farm or retained for animal feed. A small number of specialist granaries built by large landowners, in particular the monastic institutions, survive from the 14th century. Most granaries are of late 18th- and 19th-century date, the need for more storage for grain often coinciding with the necessity for more cart and implement space at a time when commercial farming and markets were expanding and more implements introduced on farms. The construction of detached granaries raised off the ground, along with the heightening of plinth walls to timber-framed barns, was also a reaction to the threat posed by the rapid spread of the brown rat from the early 18th century (McCann 1996).

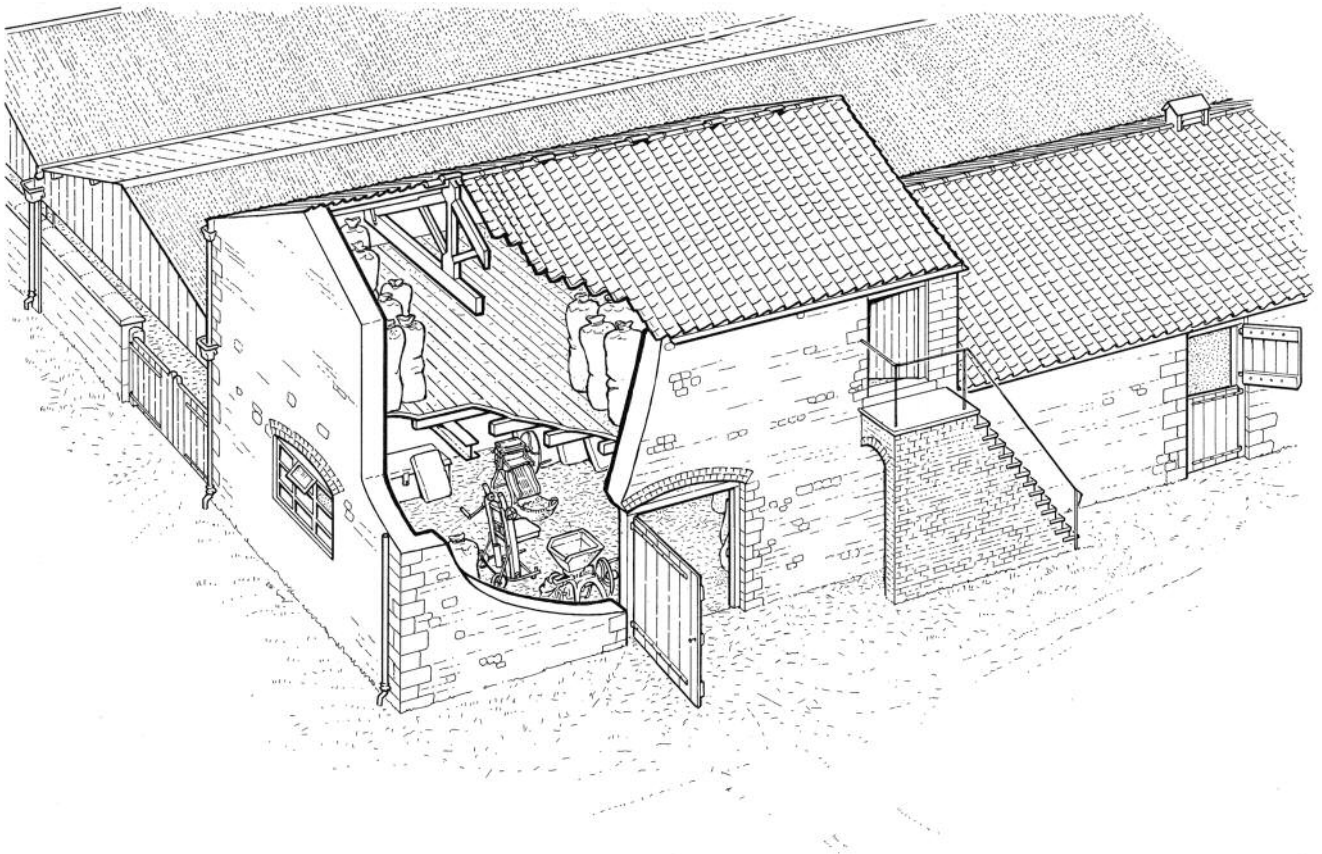
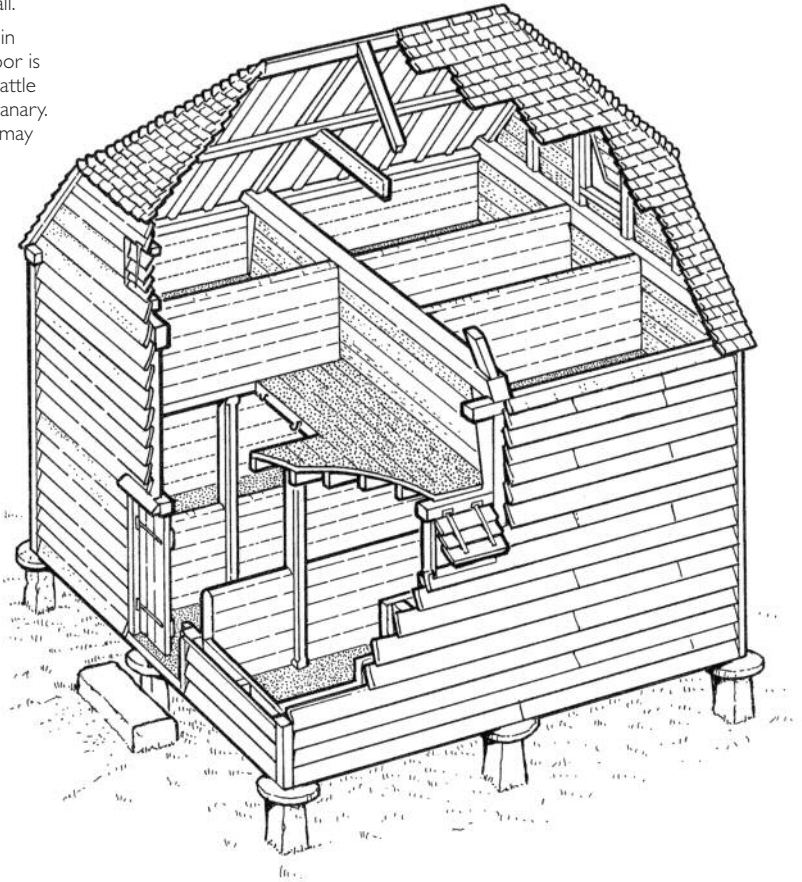
Internally granary walls were usually close-boarded or plastered and limewashed, and the floor made of tight-fitting lapped boards to prevent loss of grain. Grain bins, or the slots in vertical timbers for horizontal planking used to make them, are another characteristic feature: close-boarded partitions allowed different crops to be kept separate (Figure 22). Window openings were typically small, and, with ventilation being the main

22 Granaries

Top: A free-standing timber-framed granary on staddle stones. This example has two floors and is fitted with grain bins on both levels. Staddle-stone granaries are concentrated in a band from Wiltshire to Essex and in South East England with occasional examples being found as far west as Cornwall.

Bottom: Granary occupying the first floor of a mixing barn in Lincolnshire. In this 19th-century building the ground floor is devoted to the preparation and storage of fodder for cattle whilst the first floor, reached by external steps, was a granary. In similar buildings in this area only part of the building may have a loft for grain storage.

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23A The interior of a granary over a cart shed showing the grain bins which allowed different grains, and even the crop from different years, to be kept separate. (North West Norfolk)
 B Ventilation was important to keep the stored grain dry. Air circulation could be achieved through small windows with shutters, hit-and-miss ventilation grilles, windows with fixed louvers or, in this example, adjustable louvers. (Hampshire Downs)
 A © English Heritage / Michael Williams; B © Bob Edwards



objective, the openings were generally either louvers, sliding vents or grilles.

Grain was typically accommodated in:

- The lofts of farmhouses, a practice common before 1750.
- Small, square or rectangular structures raised above ground level on mushroom-shaped staddle stones or brick arches and accessed by moveable wooden steps. Internally, they may have been fitted with wooden partitions to create grain bins. They were clearly related to the helm, which, according to documents from the 15th to 17th centuries, comprised timber platforms on staddle stones and were concentrated in the Midland counties (Dyer 1984; Needham 1984; Airs 1987; Barley 1990, pp.165–7): none have survived or been excavated. Most are of late 18th- or 19th-century date. Examples abound in Cambridgeshire, Berkshire, Sussex, Hampshire and Wiltshire, but extend into Dorset, Devon and Cornwall. Free-standing granaries are commonly timber-framed, clad in weatherboard or infilled with brick, but brick or stone examples have been found, particularly at the western edge of their distribution. The larger free-standing granaries were of two or even three floors (Figure 23).
- The upper floors of farm buildings, most commonly barns – observable from the 14th century (Le Patourel in Miller 1991, p.872) – and from the 17th century in the South East and East Anglia, much later further north and west, above cart sheds (see 6.3.1). Exteriors are usually marked by shuttered windows for ventilation. The side walls are sometimes weatherboarded, even in regions where weatherboarding is unusual, again to help ventilation. Examples date from the 17th century in arable areas. A separate external stair often gave access to the granary door (Figure 23). There was often a trap door into the cart shed below with a hoist beside it to allow for the loading of sacks. The granary floor had to withstand heavy weights so was stoutly built. In a few instances the granary was situated over cowsheds or stables, but generally this was frowned upon because the damp and smells from the animals below could taint the grain. Because of the value of the crop, granaries were often the only farm building to be locked, sometimes with a dog kennel or goose house under the steps to deter thieves.

granaries have survived, and timber-framed granaries – detached or located over cart sheds or stables – are clearly far less likely to have survived to the present day than examples in stone or brick. Interior fittings such as grain bins and features such as louvered windows are particularly vulnerable when a change of use is contemplated.

6.2.2 GRANARIES IN THE EAST MIDLANDS

(Figure 24)

In the East Midlands Region, granaries were often located over cart sheds, although in some areas such as parts of Lincolnshire, they were often found over stables, particularly the late 18th- and early 19th-century examples (Barnwell & Giles 1997, p.52). In north Northamptonshire 17th- and 18th-century surveys record the presence of granaries, also usually sited over stables, although inventories show that they could be used to store other goods such as wool (RCHME 1984, p.lxviii). In Nottinghamshire there are several examples of granaries associated with pigeon lofts or dovecotes. These combination ranges are frequently found attached to either the farmhouse or the barn and, although a few early examples are found

A very small number of pre-18th-century detached

24 Granaries and cart sheds in the East Midlands Region
Free-standing granaries are unusual in the East Midlands; most are located over cart sheds (A Lincolnshire Coast and Marshes), within combination ranges (B Derbyshire Peak Fringe and Lower Derwent) or, less commonly, over stables (C White Peak).

Single-storey cart sheds are found across the Region (D Needwood and South Derbyshire Claylands) but they also often form part of larger courtyard ranges (E Lincolnshire Wolds) or combined with other functions such as the mixing barn in photograph F (Kesteven Uplands). A & C © Susanna Wade Martins; B & E © English Heritage / Michael Williams; D © Bob Edwards; F © Mr Terence Onyon (194333)

24A



24B



24C



24D



24E



24F



across the Region, the majority of granaries are of early to mid-19th-century date. In the later 19th century, particularly on smaller farms, and in those areas where pastoral farming was more important, part of the barn could be lofted to serve as a granary (Barnwell & Giles 1997, p.52).

Free-standing granaries set on staddle stones are relatively rare in the East Midlands, with most examples being found in south Northamptonshire.

6.3 CART SHEDS AND IMPLEMENT SHEDS

6.3.1 NATIONAL OVERVIEW

The cart shed housed not only carts for transporting muck to fields, the harvest to the steading and grain to market, but also the implements needed (primarily for arable cultivation) on the farm. It could also accommodate the coach or pony trap. Left outside, wooden implements could shrink and crack in the sun, while rain and snow caused iron to rust, jamming any moving parts. Cart sheds often faced away from the

farmyard and were often close to the stables and roadways, giving direct access to the fields. They have been found as additions to barns, but are more commonly found as detached single- or double-storey buildings, in the case of the latter invariably with a first-floor granary (see 6.2.1). The size of cart-shed ranges serves as a rough indication of the former arable acreage of the farm. In some parts of the country, often in pastoral areas, the difficult terrain meant that wheeled vehicles were not widely used and so cart sheds tended to be few and smaller; perhaps of only one or two bays. One bay was sometimes enclosed with a wide door for the storage of small implements, or perhaps a pony trap. Cart sheds and implement sheds with lockable doors did not appear in any great numbers until the mid-19th century, when horse-drawn hoes, and later reapers and mowing machines, became more prevalent (Walton 1973; Mingay 1989, pp.532–44).

Examples of pre-19th-century date, concentrated on estate farms and in the arable lowlands, are extremely rare.

6.3.2 CART SHEDS IN THE EAST MIDLANDS

(Figure 24)

There are very few cart sheds that date from before the middle of the 19th century. Those that do are usually small structures built to house a single vehicle. Detached, single-storey cart sheds are often found on farmsteads that evolved gradually during the 19th century but those of the later 19th century are likely to form part of a planned farmstead. Such cart sheds may be single storey or form part of a combination building, often being associated with a granary at first-floor level, and sometimes attached to the barn. Again, cart-shed ranges could be very large in Wolds and other arable areas.

In Nottinghamshire an unusual building, which comprised a cart shed below with an open-sided upper floor where unthreshed corn was stored, was recorded in the late 18th century (Lowe 1798, pp.9–10).

6.4 HAY BARNs AND OTHER CROP-RELATED BUILDINGS

6.4.1 NATIONAL OVERVIEW (Figure 25)

Hay would be kept in lofts over the cow house and stable, stored in stacks or in purpose-built barns. The latter differed from corn barns in that they were open-sided to allow a good flow of air through the hay. They comprised little more than a roof supported on brick, stone or iron piers with solid gable walls. They mostly date from the second half of the 19th century, and are more typical of the wetter pastoral west than the arable east. A very small number of timber hay barns with adjustable roofs – as commonly survive in the

Netherlands – survive intact, mostly in Yorkshire. The agricultural depression from the 1870s meant that dairy farming was one of the few branches of farming to remain profitable, leading to an increase in the production of hay. This period saw the introduction of some of the first mass-produced iron farm buildings, such as Dutch barns for hay storage, and also of airtight clamps for the preservation of silage. Silage towers were built in small numbers in the inter-war period, but were not generally adopted until the 1960s (Shaw 1990).

As the use of fodder crops, such as turnips, and over-wintering of cattle became countrywide, there developed a need to store the fodder in earth clamps or small rooms. In some of the better-planned farmsteads the root and fodder stores would be incorporated into the cattle housing, usually located close to where the cattle were stalled with access between the two. On smaller farmsteads the root store was either a separate building or formed part of a combination building, perhaps being associated with a granary or workshop. At present, it is not possible to identify any particular features of these buildings, other than the building materials, that are regionally characteristic.

Some areas of the country developed a specialisation in the production of particular crops such as hops or fruit. In some cases these crops required the construction of particular buildings that are regionally characteristic: for example, the oast house/hop kiln of the South East and West Midlands and the cider house of Herefordshire and the South West.

Small kilns for drying corn and particularly malt for brewing have been recovered through excavation (Le Patourel in Miller 1991, p.875) and a small number of much larger and more solidly constructed examples survive from the 17th century, especially in the North West and South West. Surviving examples of corn-drying kilns, concentrated in upland farming areas, are very rare. The processing of corn to flour was undertaken in mills normally powered by water or wind. Mill buildings are often found isolated from farmsteads but occasionally they can form part of the farmstead.

6.4.2 HAY BARNs AND OTHER CROP-RELATED BUILDINGS IN THE EAST MIDLANDS

Hay barns are relatively uncommon features in the East Midlands landscape, as many combination barns incorporated lofts where hay could be stored and fed to cattle and horses housed below. The majority of examples are found in the north-western part of the Region and they mostly date from the second half of the 19th century. The local stone was usually used for their construction, although some fine examples supported on stout cast-iron columns survive on the Strutt farms around Belper, Derbyshire. A similar open-sided barn

25 Hay barns: national examples

Buildings including storage space for hay are found in the East Midlands – usually in lofts above stables or cow sheds. Purpose-built hay barns can also be found, although they are not a common feature of the Region. Hay barns are usually quite simple buildings using local materials

or brick. (A Cumbria High Fells; B North Yorkshire Moors; C Solway Basin) By the late 19th century the iron-framed Dutch barns were widely used (D Leicestershire and South Derbyshire Coalfield) A, B & C © Jen Deadman; D © Peter Gaskell

25A



25B

25C



25D



with stone gables and wooden supporting pillars stands at Home Farm, Laxton, Northamptonshire, probably dating from the mid-19th century.

In areas where cattle fattening or dairying were important the production of oats primarily for feed

necessitated the building of chaff houses, where the oats could be stored and prepared for feed. In Lincolnshire the chaff house was often attached to the barn or to the cattle shelters (Barnwell & Giles 1997, p.46). These buildings are typically of 19th-century date and of brick construction.