# 4.0 Agricultural History and Farm Buildings

The existing stock of traditional farm buildings results from centuries of change and development. As a general rule, farmhouses (see 5.1) pre-date farm buildings, even in areas of 18th- and 19th-century enclosure. Larger-scale and higher-status buildings, which were consistently used for the same purpose or capable of being adapted to later uses, generally have the greatest chance of survival. It follows that barns are the overwhelming type of building to have survived from before 1750, and that steadings adapted or built anew in the later 18th and 19th centuries have retained evidence for a greater diversity of functions. Rates of survival differ both regionally and locally, but placing a building within its broad national and historical context will enable decisions on their wider value to be made.

## 4.1 AN INTRODUCTION TO ENGLISH AGRICULTURAL HISTORY AND FARM BUILDINGS: THEIR DEVELOPMENT, SURVIVAL AND SIGNIFICANCE

### 4.1.1 UP TO 1550 (Figures 10 & 11)

The 12th and 13th centuries were characterised by rising population, the colonisation of new land (through the drainage of fens, clearance of woods and expansion of farming on to upland moors) and the direct commercial management by estates of their land, whether this was dispersed among other holdings or ring-fenced in its own boundaries. The Church was a particularly active landlord, and monastic orders such as the Cistercians ran their estates from both home (or demesne) farms and outlying granges, which could be very large in scale (commonly 3 to 1000 acres in size). Climatic changes in the second decade of the 14th century, with increased rainfall and lower temperatures, led to famine. These troubles, compounded by pestilence (the Black Death of 1349 and subsequent epidemics), resulted in a sharp fall in population and the contraction or desertion of settlements on marginal soils. Direct cultivation by landlords continued on some home farms, but in most areas farms on estates became leased out – in whole or in part – to tenants, a process often accompanied by the breakdown of traditional customary tenancies. Other developments which accelerated from the 14th century included the amalgamation of farms into larger holdings, the enclosure of former communally farmed strips, and a steady growth in productivity sustained by greater emphasis on pastoral farming, new techniques and rotations of crops.

#### 4.1.1.1 Survival and Value

All survivals of this period are of great rarity and significance. The best-known survivals are the great barns of secular and especially ecclesiastical estates. These comprised the foci of farmyards with ancillary buildings that have been almost completely swept away, for which documentary but very little archaeological evidence exists. The great cattle ranches (vaccaries) of the northern uplands have left no traces in terms of built fabric, although their impact on the landscape is still legible. Archaeological and documentary records – the latter particularly after 1350 – are similarly the main source of evidence for the farmsteads of peasant farmers, and for the emergence of a wealthier class of tenants and freehold farmers from the 13th century. In recent years evidence has brought to light farmhouses and occasionally barns of a wealthier class of farmers (both customary tenants and freeholders), providing the first evidence for wealth generated solely from local agriculture and of a class of farmers counted as among the wealthiest in Europe. These structures are concentrated in mid-Devon, the southern half of the West Midlands and in particular the South East and southern East Anglia.

### 4.1.2 1550 TO 1750 (Figures 10 & 11)

Larger farmers and landowners initially benefited from the great land sales that followed the Dissolution of the Monasteries in the 1530s, while most farmers gained from rising prices and favourable leases. Agricultural productivity – particularly of grain – was spurred by a doubling of population from between 2.5 and 3 million to over 5 million by 1660, and an associated rise (by six times) in grain prices. After 1650, a fall in grain prices, a rise in cattle prices and demand from London and other growing urban markets, led to a rise in cattle rearing in the north of England, and of the dairy industry and specialised produce (such as hops and cider) in other areas. Improvements in transport, including the coastal and river trade, provided access to new markets. New rotations and crops, particularly clover, grasses and turnips, had become established by the end of this

period on the light soils of East Anglia and adopted with varying success in other parts of the country. This period is strongly marked by the continuing process of enclosure and the related process of exchange and consolidation of farm holdings, the growth of farm size (especially in corn-producing areas), large estates and the widespread development of a landlord–tenant system. Landowners, notably the county gentry, emerged as 'influential pioneers of new crops and new systems of farming' (Thirsk 1984, p.xxiii). The consolidation of estates and holdings are reflected in the continuing – and in more anciently enclosed areas often the final – phase of enclosure. The national market became more integrated from the later 17th century, in tandem with the emergence of specialised regional economies. This, and the development and strengthening of local building traditions, are also reflected in the layout and design of both farmhouses and more substantial farm buildings.

#### 4.1.2.1 Survival and Value

Substantially complete farm buildings of this period are rare. They will often provide the first surviving evidence for the development and strengthening of regional traditions and building types: for example, the timber-framed West Midlands barns that replaced earlier small cruck barns; the linear farmsteads of the North Pennines; the development of bank barns in Cumbria; the growth of the southern English downland farmsteads with their associated large barns. The smaller farms of anciently enclosed pastoral areas are the most likely to retain fabric dating from this period, although it is very rare for farmsteads to have more than a barn and house.

### 4.1.3 1750 TO 1880

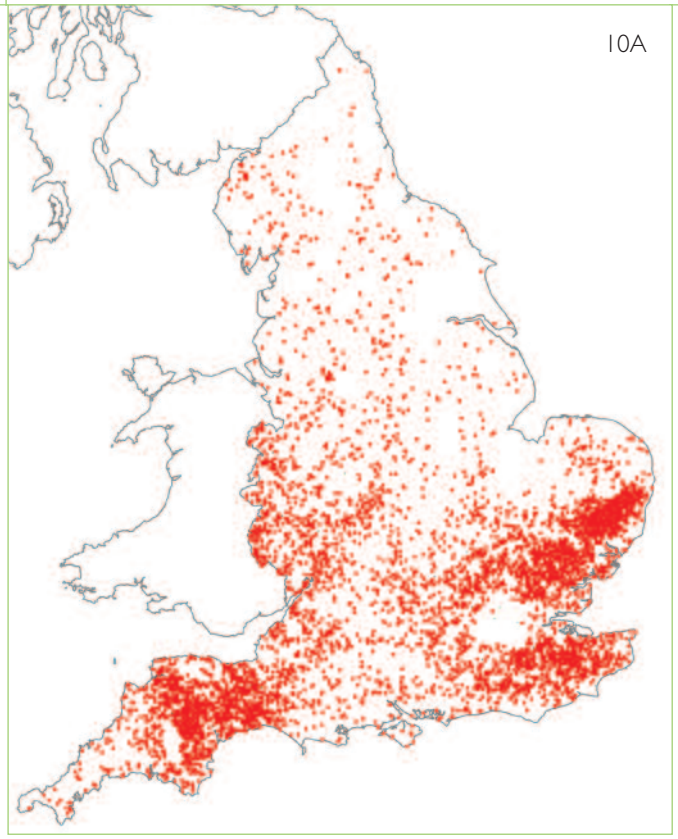
Agricultural productivity sustained a massive increase in population, which had risen from around 6 million in 1750 to over 16.7 million by 1851 and 26 million in 1881. This was the most important period of farm building development, commonly divided by agricultural historians into two periods: before and after 1840. Probably under 25% of the land area of England remained unenclosed by 1750, and the majority of this was enclosed by 1815. This was a process at first concentrated on the Midland clays (for the management of land as pasture for fattening) and then – from the start of the Napoleonic Wars in the 1790s – on the expansion of the cultivated area onto poorer and lighter soils such as the northern moorlands and the southern downlands, and poorly-drained land such as the Fens and the Lancashire mosses.

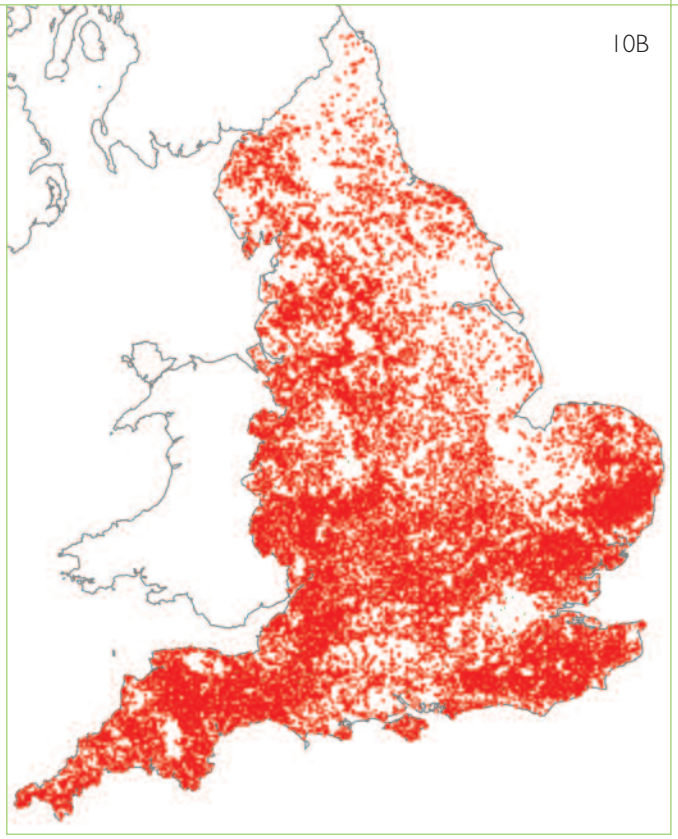
In the 'High Farming' years of the 1840s to 1870s, high-input/high-output systems – based on the availability of imported artificial fertilisers and manures (superphosphates, nitrates, guano and bones) and feeds such as oilcake brought on to the farm – replaced the 'closed circuit' methods that relied on farm-produced feeds and manure. A major development – as observed by the agricultural journalist James Caird writing in the 1850s – was an increased distinction between the intensively cropped landscapes of the eastern half of the country, and the wetter and more pastoral-based economies of the western half.

There were several key drivers behind this development:

- Higher grain prices from 1750, peaking during the Napoleonic Wars (1794–1815), were joined from around 1840 by a steady increase in meat and dairy prices, both the result of population growth and the demands of an increasingly affluent urban population.
- The strengthening of a national market, facilitated by the ever-expanding transport infrastructure (of canals, improved river and road communications and the railways) and the growing importance of middlemen, both of which facilitated the marketing of food.
- Marked increases in land prices from the 1760s. This increased the incentive especially of estates to invest, outgoings on repairs and improvements occupying an increasing share of gross rentals from this period to as much as 25% by the 1850s (Mingay 1989, pp.602–3).
- Increasing interest and involvement by government: for example through the Board of Agriculture set up in 1793 (and which immediately set about the commissioning of its famous county studies in order to gather information on best practice); and from the late 1840s the establishment of loan companies for buildings and drainage, which added to the development of a national banking system.
- Textbook and journal literature such as *The Book of Farm Buildings* by Stephens & Scott Burn (1861), and the examples of best practice included in J Bailey Denton's *Farm Homesteads of England* (1863). Agricultural societies, from farmers' clubs to the Royal Agricultural Society of England (RASE) founded in 1837, played an important role through their shows and publications. The Royal Agricultural College was established at Cirencester in 1845, and – as seen in the founding of the Rothamstead experimental station in 1832 – the following two decades witnessed the development of agricultural chemistry and veterinary science.
- The accelerating trend towards larger farming units, both through purchase of smaller farms by more substantial tenants and freeholders, and through estate policy. This was especially pronounced on the poorer soils, which often required the highest levels of capital investment.
- The role of estates, through the development of the land agent profession, investment in infrastructure (especially buildings and drainage) and the encouragement through leases of improved husbandry techniques by their tenants. Estate polices were also a major factor in the rationalisation of holdings and the emergence of larger farms.

10 Distribution of listed farmhouses in England, pre-1550 and 1550–1750. There is an obvious danger in making sweeping generalisations from such maps, but they do present valid questions for future analysis and research. Wealth derived from arable farming, including the proximity to the London market, dairying and fattening, wool and cloth production are obvious from the pre-1550 map. Here the distribution is thinnest for large parts of northern England, where rebuilding in stone – particularly from the late 17th century – had made its mark by 1750. Notable by their continuing thin distributions are the Lincolnshire and Yorkshire Wolds and Northumberland, where agricultural improvements and the re-planning of landscapes resulted in extensive rebuilding and re-siting of farmsteads after 1750. 




- Enclosure. This was often a major factor in increasing output, through facilitating new rotations of crops and the improvement of grassland and stock management. Expenses associated with enclosure – of fencing, hedging and ditching (as much as 50% of the cost), and occasionally the construction of new steadings and buildings (which could be 17%) – increased the incentive of small owners and occupiers with little capital to sell to larger landowners (Wade Martins 1995, p.83). An additional incentive to enclosure was the doubling of rents that could result.
- Improvements in livestock, for example the emergence by 1850 of the Shorthorn as the leading cattle breed and the replacement of the horned wool-producing varieties of sheep by sheep bred for their meat and manuring value.
- The widespread adoption of improved grasses such as sainfoin and winter feed-crops such as turnips, accompanied by the production of better seeds and farm machinery and the efficient distribution of good manure by livestock increasingly wintered in yards or buildings.
- Drainage through traditional techniques, such as bush drains and U-shaped tiles and from the 1840s tile pipes, the use of these being concentrated on the heavy soils of the Midland clays.
- The improvement of soils through liming and marling.

Farmstead design was being affected by the widespread introduction of new types of building and layout, and from the 1840s by the widespread extension of mechanisation (for preparing feed and threshing), the increasing availability of mass-produced fittings and materials, and the adoption of industrial and scientific principles to the accommodation and feeding of ever-increasing numbers of livestock. The building of planned steadings for some estates and wealthy farmers, in the period up to 1840 concentrated in the eastern lowlands, was accompanied by the rebuilding or adaptation of many thousands of existing steadings with cattle yards and buildings, and the replacement of the traditional threshing barn by the multi-functional and much smaller mixing barn (see Figure 22, bottom). In some areas, regional differences were beginning to disappear: for example, the removal of floors and walls for livestock and lofts in the combination barns in the wood pasture areas of Suffolk and the eastern Weald attest to the fact that they were becoming part of eastern England's arable region, as recognised by James Caird who conducted a survey of British agriculture for *The Times* in 1850–51 (Caird 1852).

#### 4.1.3.1 Survival and Value

Substantially complete examples of farm buildings of the 1750–1840 period are far less common than those of the post-1840 period, when many farmsteads matured

into their present form and huge numbers of buildings were erected. Some, particularly the planned farmsteads of the period, represent new developments in farmstead planning or the architectural aspirations of landowners. Others continue to be strongly representative of both the variety and development of local and regional agricultural systems and local vernacular traditions, such as granite in west Cornwall or cob in mid-Devon, and even new materials such as clay lump (as developed in large parts of Suffolk and southern Norfolk).

### 4.1.4 1880 TO 1940

For over 100 years, agriculture had been increasingly subject to national and international fluctuations in commodity prices, to its considerable benefit in the Napoleonic Wars and the High Farming years. However, after a run of poor weather in the late 1870s, the income from arable crops that farmers had enjoyed in the 1860s collapsed (for example, by 40% in wheat between 1880 and 1900) and farming entered a severe depression. Britain, its urban economy prospering through free trade, became by the 1930s the world's greatest importer of agricultural produce, including animal fodder, from both neighbouring parts of Europe and the New World. This was the beginning of large-scale importation of grain from the American prairies, meat in refrigerated ships from New Zealand and Argentina, and cheese and bacon from Europe. More than in any preceding period, British domestic policy (the supply of cheap food) and the world market now directly affected regional variations and the supply of capital to British farmers. The result was the concentration of grain production on the drier soils of the eastern and southern counties, and in the areas that experienced the greatest contraction from the High Farming peak of grain production a focus on meat and dairy produce in order to meet urban demand. The growing demand for liquid milk and the importation of dairy produce also led to a decline in the farmhouse manufacture of butter and cheese.

The Government endeavoured to boost production through price support. Against the backdrop of the U-boat menace during the First World War it sought to reduce the country's dependency on imported grain and attempted to extend and co-ordinate both advice and legislation (over hygiene, for example) through the establishment in 1919–20 of the Ministry of Agriculture and Fisheries and county council committees and councils, in conjunction with organisations such as the National Farmers' Union (founded 1908). However, despite an increase in net output, the rising costs of labour, feeds and other inputs, combined with the decline in prices and rising levels of imports, ensured that little was invested in fixed capital. Arrears in rent characterised the period, even in years of relative recovery (such as after 1936 in arable areas). The holdings farmed by the new class of owner-occupiers – numbering 147,000 in 1927, as against 56,000 in 1909, the biggest change in land ownership since the Dissolution of the Monasteries (Whetham 1978, pp.160–61) – were burdened with debt.

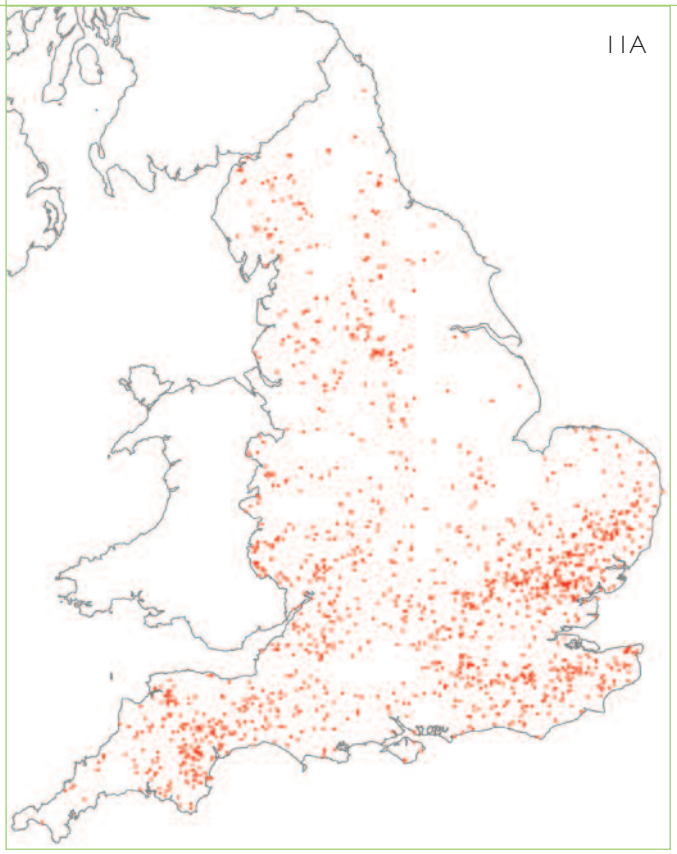
As a consequence there was little fresh investment in farm buildings other than repair and modification, and any buildings constructed tended to be of the cheapest materials. Many, such as Dutch barns, were prefabricated, and concrete and corrugated iron or asbestos sheet were being increasingly used for the refitting of cow and dairy units and the repair of traditional roofs. National and local surveys, such as the 1910 Land Valuation Survey, attest to the growing levels of disrepair, especially of pre-improvement farm buildings using traditional materials such as thatch and timber. Reduced rents and growing building costs meant that only the wealthiest farmers and landowners continued to invest in model or experimental farms, and many of these concentrated on the production of meat and dairy produce; most built very little, perhaps investing in dairy buildings or cattle sheds in an attempt to attract tenants or meet increased demand in some areas for meat and dairy produce.

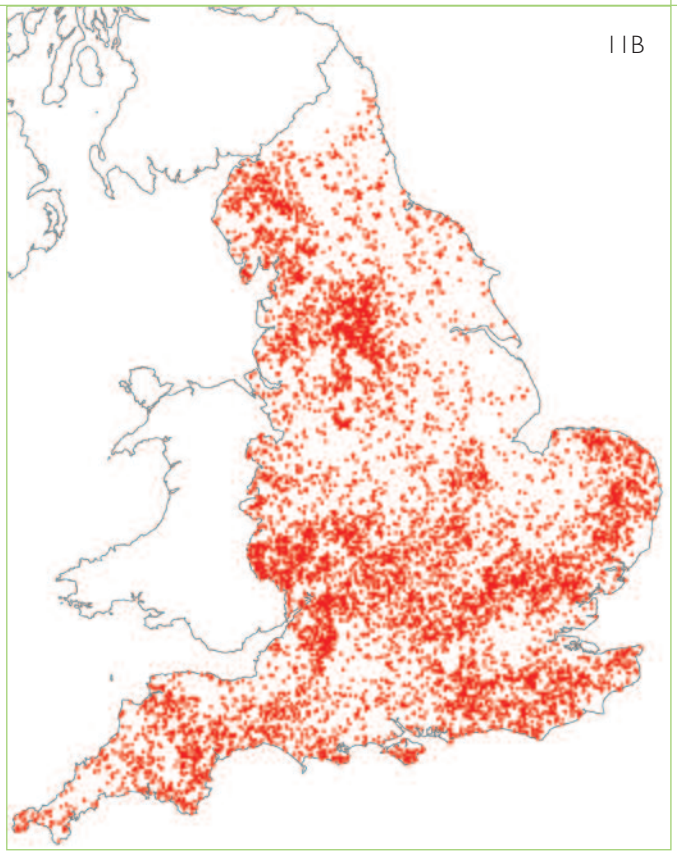
The continued promotion of scientifically based agriculture was matched by the application of new ideas on ventilation and farm hygiene to farm buildings, such as the regulations for dairying introduced in 1885. This was brought into effect mostly through the conversion of existing buildings (especially stabling into dairies) and to a small degree through new-build, notably on the smallholdings owned by county councils. Milking machines, where introduced, brought considerable changes to building layout, but the spread of mechanisation was very varied. By the mid-1930s, the mobile horsepower of the growing tractor fleet exceeded that of the stationary engine; the latter form of power having itself witnessed the transition to oil engines (from the 1890s) and electric power (not widespread until the 1950s). However, horses 'remained the dominant source of power' in the western half of England, and tractors were mostly confined to holdings of 300 acres or upwards, and the arable eastern areas (Whetham 1978, p.210). In the inter-war period, cereal, poultry and dairy farmers, and pig producers using imported North American feed, were in the vanguard of cost-cutting innovation that had a strong impact on post-war developments. There were some examples of planned steadings that in their adaptation of modern industrial theory bucked the trend (Brigden 1992).

#### 4.1.4.1 Survival and Value

Planned steadings and buildings in some areas reflected the increased importance of dairying, particularly of liquid milk – the steadings of the Tollemache and Westminster estates in south Cheshire being one such example. The inter-war period witnessed the

11 Distribution maps of listed barns in England, pre-1550 and 1550–1750
The great majority of substantially complete pre-1750 barns have been listed. These maps pose important questions for future research. In the pre-1550 map, the concentrations in a belt around London, the southern Pennines and from the Feldon of Warwickshire into mid Devon conceal a wide range of sizes and types of barn, stretching from large aisled barns to relatively modest barns which have not been replaced in later centuries due to farm size and other factors. Many of the outliers, such as in Cornwall and Durham, represent the building of substantial barns on ecclesiastical estates in the medieval period. In the period 1550–1750, regional patterns of building and survival emerge more strongly, such as the concentration stretching from the Lancashire Plain to the southern Pennines, and the relative absence of pre-1750 barns in the planned landscapes of eastern and central England most profoundly affected by the agricultural improvements of the post-1750 period. The distribution for threshing barns of the period 1750–1880 reinforces rather than adjusts this distribution.


development of more intense forms of housing for pigs and poultry, and the replacement, as a result of hygiene regulations, of earlier forms of housing for dairy cattle with concrete floors and stalls, and metal roofs and fittings. County councils entered the scene as a builder of new farmsteads, built in mass-produced materials but in traditional form, in response to the Government's encouragement of smallholdings of up to 50 acres (20 hectares). Alongside the construction of new farm buildings, traditional farm buildings were adapted to new needs, and the use of corrugated iron (mostly for repair) has guaranteed the survival and reuse of earlier buildings, particularly the increasingly redundant threshing barn.

### 4.1.5 1940 TO THE PRESENT

The 1937 Agriculture Act anticipated the need to increase self-sufficiency, and the Second World War witnessed a 60% rise in productivity; this was the result of the growth in livestock numbers, increasing scientific and government control and guidance, more specialised systems of management and the conversion to arable of permanent pasture. The invention of artificial fertilizer (patented by Haber and Bosch in 1910) enabled otherwise uneconomic land to be brought into production, and finally made redundant earlier forms of fertilizer. The National Farm Survey of 1941–3 (Barnwell 1993) attested to the long years of neglect of the depression, less than half of the building stock being classed as in fair condition. The Agriculture Act of 1947 heralded the intensification and increased specialisation of farming in the post-war period, accompanied by the development of government and industry research and guidance. From the mid-1950s, strongly influenced by American models, there emerged a growing body of trade and advisory literature. The first of these, produced in 1956, highlighted the dilemma of 'old buildings too good to pull down but not suitable for their new purposes' (Benoy 1956). The Government provided grants to cover the capital cost of new building under the Farm Improvement Scheme (introduced 1957). The introduction of wide-span multi-purpose sheds in concrete, steel and asbestos met increasing requirements for machinery and for the environmental control of livestock and on-farm production, particularly of milk. The national stock of farm buildings grew by a quarter between 1945 and 1960 alone. The Agricultural Research Council's *Farm Buildings Survey of England* (published

1967) estimated that the average farmstead contained 6 pre-1914 buildings, 2.4 from 1918–45 and 2.5 built since 1945.

## 4.2 FARMING IN THE EAST OF ENGLAND

The landscapes of the East of England Region display evidence for its wide diversity in agricultural practices, from early enclosure landscapes across the clays of Essex and Suffolk to the large areas of reclaimed wetland in the Fens. In the medieval period, much of the Region was characterised by 'advanced and flexible field systems, sometimes closes, sometimes fields, sometimes both' (Hallam 1988, p.281). After the mid-14th century, intra-regional distinctions became even more varied: intensive rotations of crops in mid- and east Norfolk; the desertion and shrinkage of settlements on the lighter soils and the rise of sheep farming in these areas; and the shrinkage of hamlets around greens or on the edges of commons in the clay areas. There was little communal regulation of crop rotations and pasturing in most of the Region, and despite a general rise in holding size, smallholdings persisted and even proliferated around the emergent wool towns of north Essex and south Suffolk (Britnell in Miller 1991, pp.611–23).

Arthur Young claimed that it was in the early-enclosed claylands of Hertfordshire (see 4.2.8) that the first agricultural improvements in the Region took place. Turnips had been introduced as a fodder crop by the 1640s and clover by the 1730s. Major improvements in crop rotation from the late 17th century used winter feed crops (notably turnips, typically grown between the wheat harvest and the planting of spring barley) in combination with the stall or yard feeding of cattle (see 7.1.2.1) and artificial grasses. The latter was often undersown with the barley crop, and after the barley harvest left to grow as a hay crop for up to three seasons depending on the quality of the soil. This system, first taken up on the good loam soils, had a significant impact on both the agricultural development of the Region and the country at large. As early as the 1730s, William Ellis of Little Gaddesden was writing books advocating what later came to be known as the 'Norfolk system' of crop rotations using turnips and artificial grasses (Young 1813, p.55). It was introduced onto more acidic or clay-based soils from the late 18th century, along with capital-intensive improvements such as marling and draining. There was also a substantial increase in the average acreage of farms between about 1650 and 1750, as estates were enlarged, small farms were absorbed and dispersed holdings consolidated. Those parishes that became dominated by landowning families experienced these changes – and the completion of enclosure – to the greatest extent. Farmers' options had previously been limited by the soil type underlying their fields, and the Region's dry climate and late frosts prevented the widespread take-up of watermeadow systems as, for example, occurred in the South West.

After about 1750 these local differences in farming systems became less pronounced as light lands were marled with clay and heavy lands drained, making both suitable for cereal production. In some areas, this expansion of arable was accompanied by boundary loss and the loss of hedge timber. In Norfolk and Suffolk, for example, farms of 150 acres and over occupied 70% of the land area by the late 19th century (a third of this being holdings of 300 acres or over). The lightest soils were found in the north and west of Norfolk and Suffolk. These were particularly suited to the keeping of sheep, whose manure fertilised the soil, thus enabling grain, or more particularly barley, to be grown. Large-scale estate owners were dominant here, and were responsible for extensive enclosure of these landscapes: their policies often discriminated against smaller holdings and the maintenance of their buildings. More established owner–occupiers, in contrast, hung onto the smaller-scale farms in the fertile river valleys, which is where the earliest farm buildings and houses are to be found (Williamson & Wade Martins 1999, pp.67–9, 137–9, 76–81).

The Region's rivers, ports and coastline enabled the easy export of produce – especially barley – to London and foreign markets. The influence of London on land prices meant that farms and estates in the south of the Region were generally smaller than elsewhere. The captive urban market, expanding rapidly during the 18th century, stimulated both an increase in grain production and fodder for fattening stock. For this reason, too, orchards were found on nearly all farms in the south-west of Hertfordshire by 1800 (Young 1813, p.143). During the 19th century the influence of London was even more firmly felt, with market gardening and dairying increasing in importance. Railways became a major factor from the 1840s. Intensive bullock and cattle feeding had been a feature of the Region since the medieval period, and included stores imported from Scotland and, later, Ireland. This trade intensified from the 1840s, enabling the soil to be enriched with their manure and stocking levels to be maintained whilst grassland was ploughed up for arable. Other features of this period in the Region were the great increase in the use of artificial feeds and fertilisers (allowing even root courses to be omitted), the widespread use of portable threshing machines (although hand threshing remained on smaller farms) and considerable investment in drainage (particularly in the marshes and fens). Sheep remained a mainstay of the farming economy in North West Norfolk, Breckland and the Sandlings (see 4.2.3). By adapting to the needs of the London populous the farmers of the Region did not suffer from the depression in grain prices at the end of the 19th century as much as those in other southern

English Regions. This meant that new farm building was likely to continue, especially in facilitating the supply of liquid milk and cheese. Perhaps the most obvious, if late, example of this are the farms built by the Ovaltine Company outside Bishops Langley in 1931 (Brigden 1992).

As grain prices tumbled after 1870 many Essex farmers left the land, to be replaced by Scottish dairy farmers from Ayrshire who saw the opportunities provided by the London market. By 1893 Lord Petre had let at least 14 farms to Scots. The census of 1891 showed 58 Scottish farmers, concentrated broadly in the Ongar and Brentwood area, and on the Petre estate (Hunter 1999, p.167). The main problem encountered by these farmers was the lack of good-quality buildings for cattle. Unlike Scotland, there was no stone in Essex so 'whole farmsteads were of oak framing and elm boarding'. These were good when new, but many were described as, 'old and rotten and settled down off plumb' (McConnell 1891, p.312). At the same time Lord Rayleigh was taking farms in hand and converting them to dairy production. By 1914 he was farming 6,000 acres, providing milk for London. This trend resulted not only in the creation of an entirely new landscape with an increase in permanent grass from 179,374 in 1875 to 302,803 in 1939 (Hunter 1999, p.168), but also a need for new or adapted buildings. In a time of depression, these were more likely to be undertaken as cheaply as possible with little in the way of elaborate new building. However, these adaptations are an important part of both the national farming story and local distinctiveness.

## AREA SUMMARIES

These summaries have been compiled as preliminary statements on the agricultural development of the distinctive parts of the Region. Inevitably, these do not relate as strongly to county boundaries as distinct landscape zones. These are outlined below, either by including the Joint Character Area (JCA) title – see 2.1– after the area heading or, if they approximate or relate to groups of JCAs, in the first line of the text. The sources for them are diverse, and include Historic Landscape Characterisation where completed, work in progress on developing historic profiles for the Joint Character Areas (see www.cqc.org.uk) and sources listed in the bibliography. They are generalised statements, within which there may again be important differences in farming practice, settlement and estate patterns and landscape character.

For Rockingham Forest (JCA 92) and Yardley-Whittlewood Ridge (JCA 91), see East Midlands. For Thames Valley (JCA 115) see South East.

### 4.2.1 North West Norfolk and North Norfolk Coast (JCAs 76 and 77)

The light chalk lands of the north-west, where the movement of sheep flocks was subject to a strong degree of manorial control and which experienced a high rate of settlement desertion in the 14th and 15th centuries, became famous for their large estates and farms, improved farming and the promoting of the 'Norfolk system' of crop rotations (see 4.2). From the medieval period until the onset of enclosure, manure was provided through the 'foldcourse system', where manorial flocks of sheep were moved across common land in the summer and fields in the winter. There is a contrast between the deep and well-drained soils of the coastal strip and major valleys, and the sandy, more acid soils of the uplands. Viable communities survived on areas of more fertile soil after 1350: most fields here were unenclosed at the outset of the 18th century. Older buildings are concentrated in these latter areas, often within settlements. Enclosure was largely complete on the poorer upland soils by the 18th century, where individual farmsteads often stood on the sites of deserted medieval settlements. From the 1760s steadings were progressively rebuilt at the centre of their holdings with large barns and combined cart shed and granary ranges. It is on these upland areas that the large estates for which this area became so well known – Holkham, Raynham, Houghton, Sandringham – were centred. The most famous of all the landowners was Thomas William Coke of Holkham, the owner of the largest estate in the area (40,000 acres) from 1776 to 1842.

### 4.2.2 Breckland (JCA 85)

The poorest of the soils overlaying the chalk are to be found in the sands of Breckland stretching through west Norfolk and Suffolk into Cambridgeshire. By the 18th century much of this area was owned by great estates, some of which had enclosed land by agreement, and foldcourse systems dominated. Some areas were left to great heaths where sheep grazed and rabbit warrens proliferated. Much remained open heath until taken over by the Forestry Commission in the 1920s, but some was enclosed and the systems of north-west Norfolk adopted with varying success. More than 70% of Breckland was enclosed after 1750, most of this concentrated in the 1790–1820 period, after which some of the land ploughed up for corn reverted to rough grazing. The area between Thetford and Bury St Edmunds is characterised by huge farms and substantial sets of buildings with fine houses dating from the enclosure period. Again a few earlier farms survive in the pockets of better soil, mainly along the river valleys where arable land had traditionally been viable.

### 4.2.3 Suffolk Coasts and Heaths (JCA 82)

A sandy area, known as the Sandlings, is to be found along the east coast. It is narrower and more dissected than Breckland and so often forms part of farms on neighbouring stronger soils. The Sandlings is bordered on

one side by coastal marshes, typically grazed by dairy cows and bullocks, sandy heaths grazed by sheep, and more fertile clay soils inland. Enclosure of the latter was largely complete by around 1700, and much of the heath and marsh divided into leasehold or privately owned blocks. Few new farms were built in this area after 1750.

Few farms are entirely confined to Sandling soils. Some of the Region's largest and best-managed farms were to be found in this area in the early 19th century with good crops of carrots produced as fodder. Here again attempts were made to improve the soils, which resulted in the building of some new farms, but parliamentary enclosure was far less important here and much of this heathland has remained open sheep walk into this century. By the 17th century, away from the most acid soils there had been considerable piecemeal enclosure. By the 18th century much of the coastal strip was owned by estates and the farms were large (over 300 acres). Alongside the sandy heaths they contained enough arable land to operate a mixed farming system. The heaths were mostly let as sheep walk rather than used as common land and by the 19th century the area was renowned as sheep-breeding country with famous flocks being kept, particularly at Martlesham and Butley Abbey. Cattle were kept on the grazing marshes.

4.2.4 **Central North Norfolk** (JCA 78)
Here the morrainic gravels associated with the Cromer Ridge have left poor soils, with a mix of large estates and smaller gentry farms. Until the later 18th century, there was a mix of piecemeal enclosure and areas of open field and common land awaiting enclosure. The economy was arable-based, but access to meadow and grass enabled the stocking of large numbers of bullocks and milking cattle. Much of the area remained open until the late 18th century when fields were enclosed and new farms laid out. Woodland has survived, both on the slopes of the ridge and on the more gravelly soils, much of it incorporated into the parks of the great landowners.

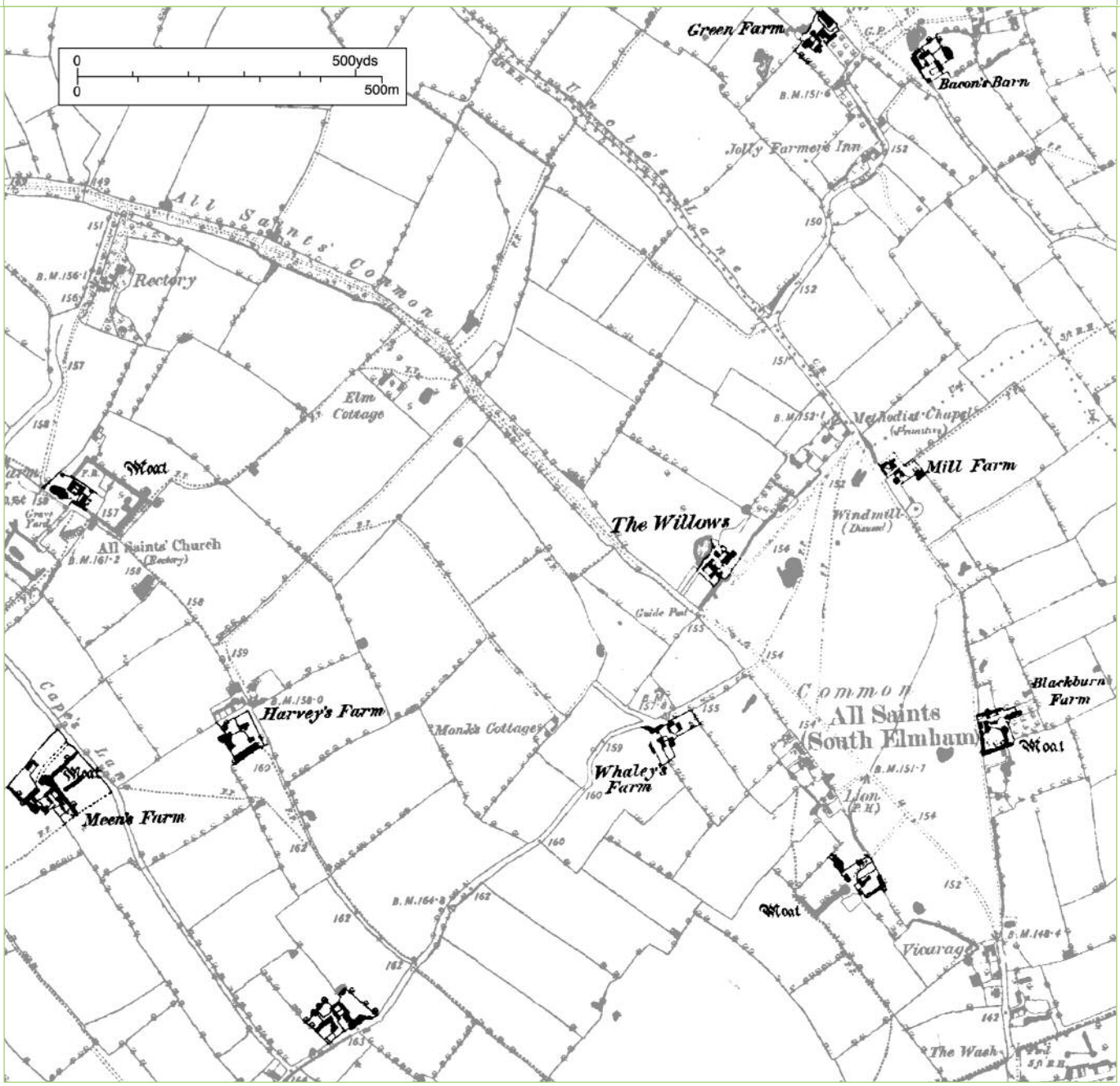
4.2.5 **The Flegg, and North East Norfolk and The Broads** (JCAs 79 and 80)
The sandy loams of The Flegg are amongst the most fertile lands in England. The large number of substantial 17th-and 18th-century farmhouses, often with contemporary barns and sometimes other buildings beside them, balance out the lack of great houses and parks. They are an indication of the importance and prosperity of owner–occupier farmers in the area. The emphasis in the medieval period was on cereals grown in open fields, but under complex systems of management that bore little relationship to the classic three-field systems of the East and West Midlands. Intensive livestock feeding was a feature from early on: exceptionally in a national context, stall-feeding of cattle is documented in the 13th century. Livestock had easy access to fens and marshes, this being privately rather than communally managed. The 16th and 17th centuries saw the development of a healthy dairying and fattening industry, supplemented by the 18th century by store cattle bought in from Scotland. More than half of this area awaited enclosure after 1750, this being associated with drainage. With enclosure, some new farms were built out in the fields. Along the broadland edge, livestock, which could be grazed on the marshes, played an increasing role in the farming system, with a distinctive type of winter cattle housing in which the animals were tied in rows on either side of a central turnip store. Very few of these buildings remain (see 7.1.2).

The Norfolk and Suffolk marshes alongside the Broads form a distinctive area, which despite the influence of drainage grants in the 1970s have retained much of their pastoral character. They were usually grazed by neighbouring farms and so formed an integral part of the local farming systems, contributing to the wealth of the area. The use of the Broads for grazing by surrounding farms meant that there were few agricultural buildings in the area.

4.2.6 **Mid Norfolk** (JCA 84)
This area is dissected by a large number of rivers with wide shallow valleys where settlement was typically dispersed (around greens and commons, and on the sites of deserted medieval settlements) and where open fields remained into the 18th century. Arable farming was of greater importance, and estates more dominant, than on the heavier clays further south. More sandy and acid soils characterise the heathland plateau, an area which experienced depopulation in the late medieval period and which from at least the 17th century contained a mixture of permanent grass for cattle and heathland that was largely enclosed around 1800.

4.2.7 **South Norfolk and High Suffolk Claylands** (JCA 83) (Figure 12)
Here pastoral farming, particularly dairying and cattle fattening, had been dominant from the 15th century. Small, hedged fields around closes, intermixed with open-field strips, were characteristic by the 18th century. Over 90% of the area was enclosed by the later 18th century, enclosure after this period affecting areas of residual common pasture and arable. Average field size could be as little as five acres and hedges were generally thick and wide, although this could of course vary from area to area, and many demesne farms (of perhaps 250 to 350 acres had large pasture closes of 25 to more than 100 acres). These were reduced in size during the 18th century, but still remained comparatively large, and in fact it seems that in these situations, many fields were *made yet smaller* during the Napoleonic Wars. On the Tollemache estate (Helmingham, Suffolk), these large

12 Farmsteads in the landscape: All Saints South Elmham (South Norfolk and High Suffolk Claylands)
Across the claylands of the south and east of the Region, settlement is predominantly dispersed with high numbers of scattered farmsteads and hamlet groups, often focused on small greens or along stretches of roadside common. The farmsteads, mostly of medieval origin, often retain buildings of pre-1700 date and many are moated. Here the fields are the result of old enclosure but lie within a broad, curving co-axial field system. Such field systems can run for several kilometres across the landscape, and can be prehistoric in origin. *Based on OS 1st Edition 6" map 1843-1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024.*



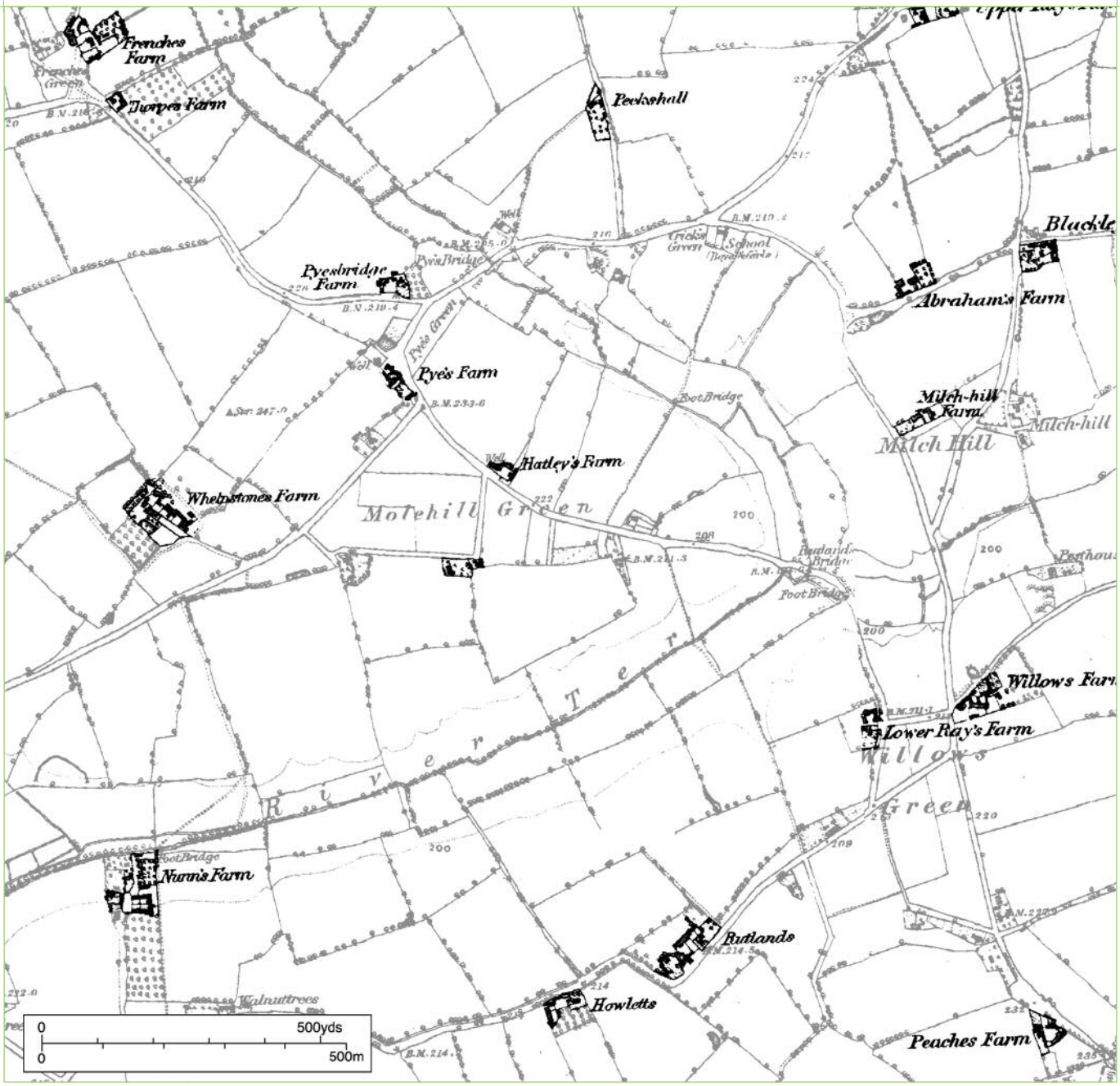

pastures were sometimes let in the 17th century as individual units of land, so a small farmer could rent an additional large block of pasture for keeping cattle. Later they became permanently attached to individual farms. There were few nucleated villages or parks of large landowners. Instead farmsteads, often on ancient and sometimes moated sites, were scattered with hamlets around greens. Generally, the land of south Norfolk and north Suffolk was owned by smaller proprietors, often without the interest or capital to invest in buildings and so smaller farms with older, more traditional buildings survive. This area has one of the highest concentrations nationally of surviving pre-1750 farmstead buildings.

The dairy lands of 'High Suffolk', described in detail by Arthur Young, were ploughed up as improved methods of land drainage enabled farmers on even the heaviest lands to take advantage of rising grain prices from the late 18th century – with consequent changes to the internal structure of the area's barns (see 6.1.2). The smallest of the fields were amalgamated to suit arable farming but complete new farmsteads were rarely erected.

### 4.2.8 South Suffolk and North Essex Claylands (JCA 86) (Figure 13)

The enclosure history of the South Suffolk and North Essex Claylands is very similar to that of South Norfolk

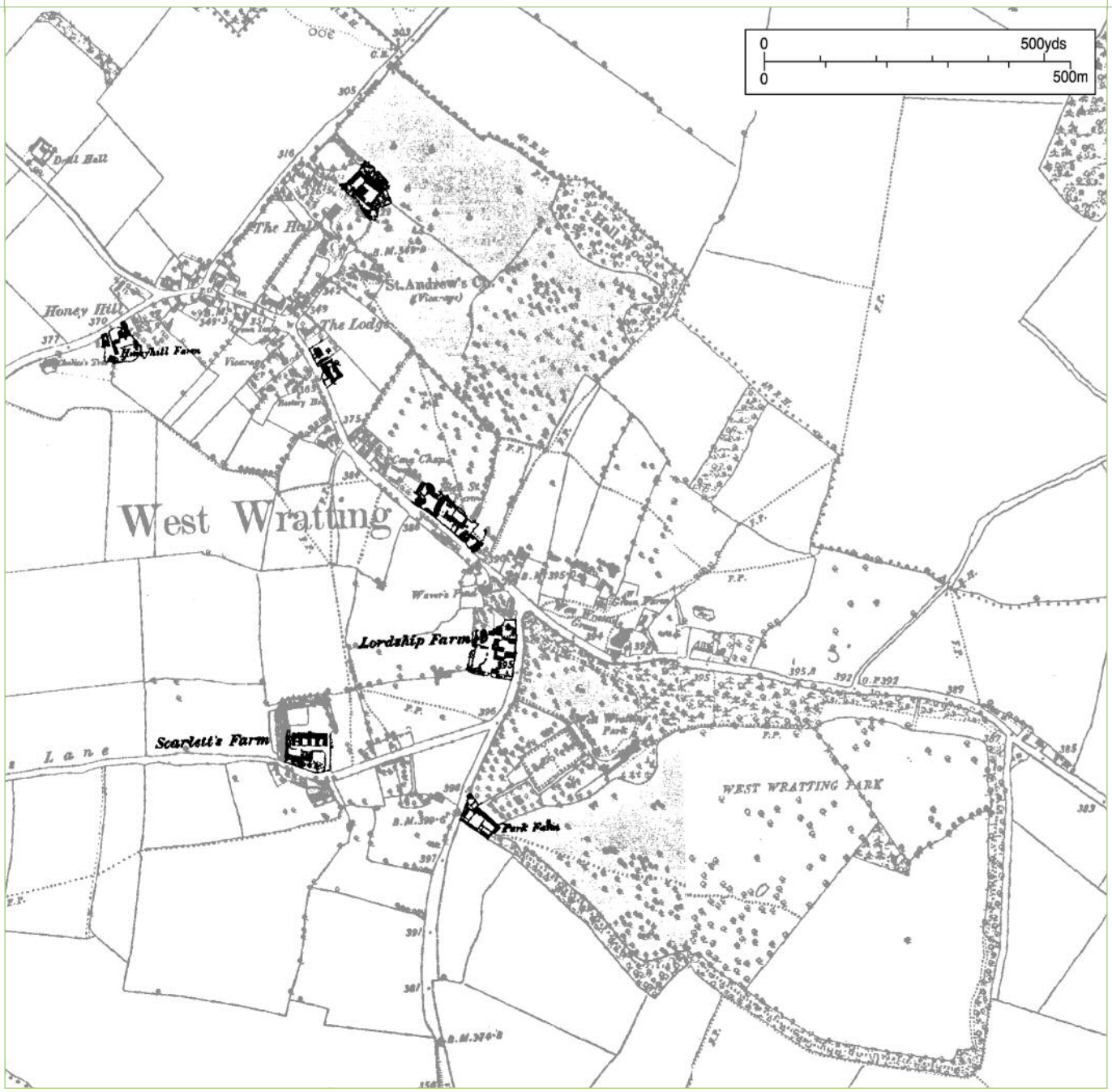
13 Farmsteads in the landscape: Felsted (South Suffolk and North Essex Claylands)
In terms of the settlement pattern, this area is very similar to that of the claylands further to the north as shown in Figure 12. This is landscape of ancient enclosure with well-hedged irregular fields and farmsteads that often retain buildings of medieval or 17th century date, although this area is more typical of wood-pasture landscapes with small, irregular fields with well-wooded hedges. Typically, these farmsteads were of loose courtyard plan, with small detached timber-framed barns and cow houses, although early examples of cattle housing rarely survive (or at least are not easily distinguishable from small barns). *Based on OS 1st Edition 6" map 1843-1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024*




and High Suffolk. The chalky boulder clay supported mixed farming in small fields surrounded by wide and thick hedges. On the heaviest Essex clays farming was difficult and, as Caird noted, 'great exertions are necessary to render its cultivation profitable' (Caird 1852, p.134). South of the River Gipping and extending into Essex and Hertfordshire, the claylands become more undulating and therefore easier to drain and so more suited to arable farming (Holderness 1984, p. 211). There seems to have been very little open field and instead early enclosure resulted in a mixed pattern of isolated farms, hamlets around small greens and nucleated settlement. By the 17th century the area was more urbanised than most, with a reliance on the textile industry (Thirsk 1967, p. 54). By the 19th century much of this area specialised in the production of grain and the fattening of cattle for the London market.

In mid-Essex the area to the south remained heavily wooded into the 19th century, but now only Epping Forest remains. To the north heathland remained open until the late 18th century when it was enclosed by parliamentary acts, resulting in a pattern of large rectangular fields and isolated farms. Into Hertfordshire this area had a mixed wooded landscape with fields varying from small irregular fields with plenty of

14 Farmsteads in the landscape: West Wratting (East Anglian Chalk)
Nucleated settlement – some of it polyfocal as here – is characteristic of much of the chalk belt running across the East of England Region. In many cases the farmsteads remained in the village after enclosure of the surrounding open fields in the early 19th century. This map identifies a number of large farmsteads with loose courtyard plans, several of which are reputed to have been of manorial status and one of which, Scarlett's Farm, was moated. It is probable that there were other, smaller farmsteads along the village street that went out of agricultural use at around the time of enclosure. Today most of these farmsteads retain some farmstead character although there are no listed agricultural buildings.

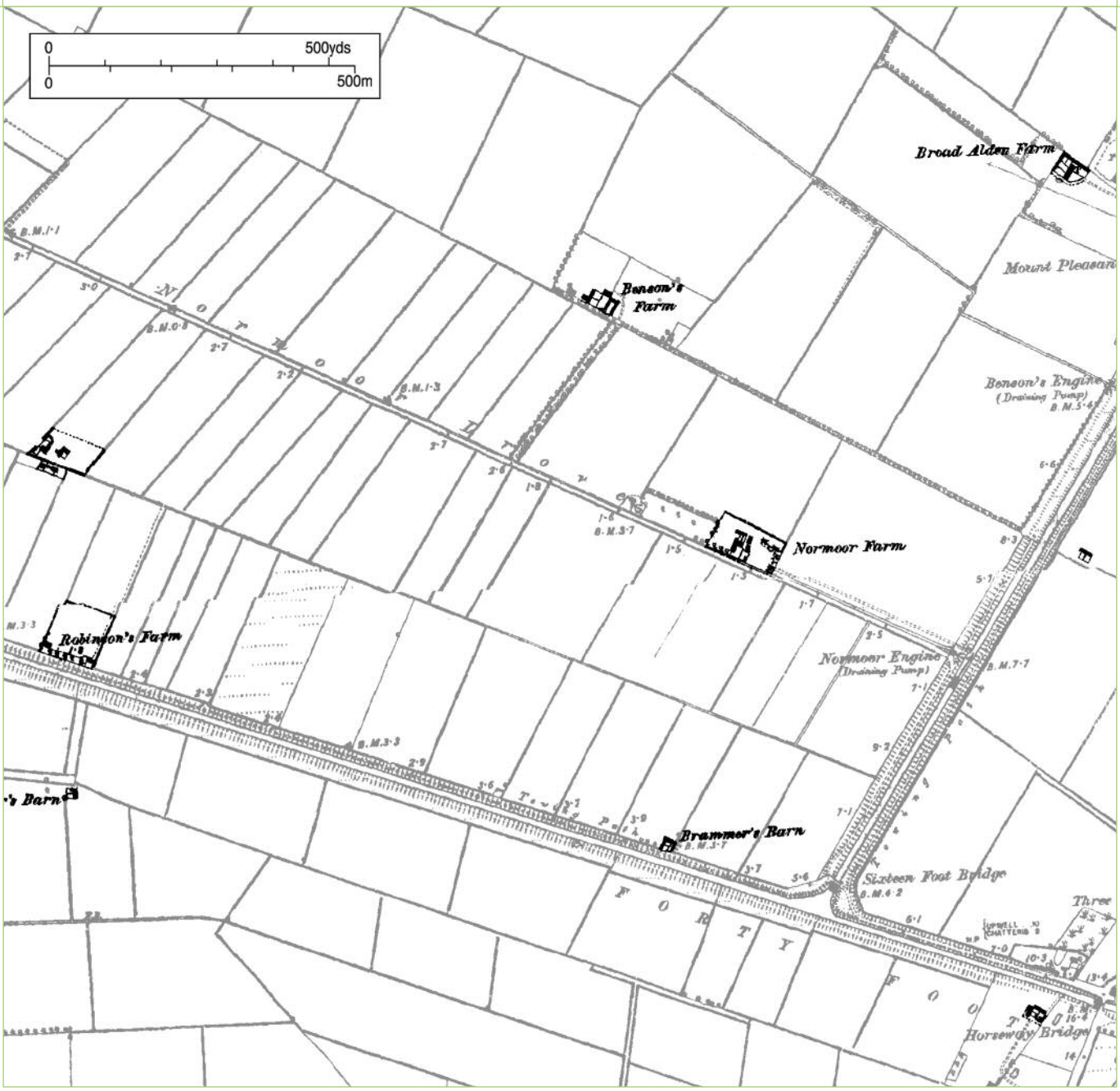

hedgerow timber to the north and regular enclosure fields to the south. Names containing the suffix 'end' or 'green' are typical of this area of dispersed hamlets and single farms.

**4.2.9 The Chilterns and East Anglian Chalk** (JCAs 110 and 87) (Figure 14)
For more on the Chilterns see South East.

The rolling, open chalk belt of the Chilterns extends into south-west Hertfordshire and continues north-eastwards as the East Anglian Chalk character area into Cambridgeshire and north-west Essex. This was mostly sheep and corn country of late enclosure, with barley the main cereal and the towns of Bishops Stortford (see 4.2.8), Baldock, Ashwell, Royston and Hitchin being major malting centres.

The Cambridgeshire chalks were still mainly open in the 1790s, and although there was considerable enclosure activity during the Napoleonic Wars there was still criticism of Cambridgeshire farming. According to one

15 Farmsteads in the landscape: Doddington (The Fens)
Drainage of the Middle Level area of the Fens commenced in 1490 with the construction of a drain by John Morton, Bishop of Ely. However, extensive reclamation works did not begin until the mid-17th century, when the Duke of Bedford and a group of 'Gentleman Adventurers' commissioned Dutch engineer Cornelius Vermuyden to drain the area to create summer grazing lands. The Forty Foot Drain was excavated around 1670 as part of this ambitious scheme. Further works to the drainage systems in the 19th century allowed an increase in arable on the fertile peat soils. New farms were created within a regular framework of straight roads and field boundaries. Due to the shrinkage of the peat as it dried out, many of the original farm buildings constructed suffered structural problems and have been replaced. *Based on OS 1st Edition 6" map 1843-1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024*




observer, the farmers on the newly enclosed fields now had 'the opportunity of redeeming [the county's] reputation as the worst cultivated in England' (Gooch 1813, p.56). In Hertfordshire enclosure was also an issue in the early 19th century. Many 'improving' farmers felt hampered by the antiquated common fields system; for example, a Mr Foster of Royston could only sow turnips in his strips in the common field with the permission of the parish flock master and by paying the shepherd 1s. 6d an acre for not letting the sheep eat the crop (Young 1813, p.48).

By 1846, things had changed. The chalky soils were nearly all enclosed and farmed as 'splendid wheatland' and large flocks of sheep were fattened for the London market. Isolated farmyards had been built where cattle were fattened but still it was thought that the buildings, even on these newly enclosed farms, were 'defective' in having too many barns (Jonas 1846, pp.35–72).

### 4.2.10 **The Fens** (JCA 46) (Figure 15)

One of the most distinctive landscapes is that of the Fens. The northern silt-based fens, which stretch into the East Midlands Region, have a long settlement history

going back to the Romano-British period and beyond. A period of expansion between the 9th and 13th centuries resulted in patterns of irregular enclosure around villages and longer strips that were used for arable or permanent pasture. Grassland, dominant from the 15th century, gave way to arable cultivation from the late 18th century. The reclamation of the more empty peat-based southern fens began in the 17th century, but was not completed until the introduction of steam power in the 19th century (Darby 1983). This expensive process relied heavily on the capital of the great landlords, principally the Duke of Bedford whose activity was concentrated in the parish of Thorney. Not until the new Nene Outfall was constructed in 1830 was there a reliable way of getting water to the sea, but once this was opened draining inland became possible. This involved the laying out of new farms, with buildings placed at regular intervals along the roads. Many of these fine farmsteads have since been replaced as their foundations cracked on the unstable peat. The flamboyant architect, S.S. Teulon, was employed by the Duke of Bedford to design Thorney village and some of the farmhouses, which along with the few remaining farm buildings form an important element of this flat estate landscape.

4.2.11 **Bedfordshire and Cambridgeshire Claylands and the Bedfordshire Greensand Ridge** (JCAs 88 and 90)
On the claylands the available land was generally organised into nucleated settlements: hamlets and small villages, each surrounded by communal fields and common grazing. The fragmentation of this farming system began with the increase in the value of sheep pasture and enforced depopulations in the 15th and 16th centuries, and concluded with reapportionment of the townships by general enclosure (private agreements and parliamentary acts) in the late 18th and early 19th centuries. The relative poverty of the soils has dictated a dispersed settlement pattern along the Greensand Ridge, with monastic institutions including large Cistercian abbeys at Warden and Woburn and smaller priories at Chicksands, Beadlow and Millbrook controlling a large proportion of the farmland and heaths, managing woodland (trees were sent from Chicksands to Ely Cathedral) and developing extensive warrens. The dissolution of these houses in the early 16th century added to the proliferation of large private estates which had already become a feature of the area.

Due to the control exercised by estates over both farmland and associated settlements, Parliamentary Acts were rarely required for the regular enclosures laid out in the late 18th and 19th centuries. Fine examples of planned farmsteads, with provision for steam power, and agricultural workers' cottages illustrate the rationalisation of farming estates in the late 18th and 19th centuries. Numerous isolated farmsteads, including a significant proportion of brick-built estate and model farms belonging to large landowners such as the Duke of Bedford, are a significant feature of the reorganised farming landscapes of the late 18th to mid 19th century. Dairying was an important component of farming on the dipslopes and river valley pastures into the early 20th century. Horticulture, based on the light and fertile soils of the Ivel Valley, developed in the later 19th century and remained a major element of the landscape until the later 20th century.

4.2.12 **Greater Thames Estuary** (JCA 81)
The agricultural traditions of the Greater Thames Estuary can be divided into two main themes: inland and coastal. Although the farming settlements are located principally in the inland zone, they reflect an ancient pattern of farming tenure which strove to extend holdings across the rising arable claylands and towards the grazing marshes, exploiting the resources of each. Comparatively few isolated farms are located within and along the edges of the marshes. The reclamation of marshland for farmland has a long history documented as far back as the 8th century. However, the economic value of large areas of marshland, especially in South Essex, rested on fattening cattle and especially sheep which required no reclamation, the salt preventing foot rot and disease (Thirsk 1967, p.53). The pattern of inland agriculture is frequently extremely ancient in origin – strong linear systems running tangentially to the rivers and reflecting ancient patterns of movement and tenure between the arable clayland and the marshes.

4.2.13 **Northern Thames Basin** (JCA 111)
The medieval pattern of village nucleations and dispersed farming settlement remains central to the character of the Hertfordshire plateau and its river valleys. The pattern of piecemeal enclosure and individual farm holding established in the medieval period supported a mixed farming economy, which developed and prospered alongside the development of local markets and the ability to supply London's growing demands for corn, meat and dairy products – and of horses (Thirsk 1967, p. 50). Profitable farming conditions saw the demise of much medieval parkland in the 17th and 18th centuries, alongside the growth of substantial farming estates for the London merchants, rising nobility and gentry (Holderness 1984, pp. 244-5). Some areas of regular enclosure are associated with the rationalisation and amalgamation of farms and estates in the 18th and 19th centuries.

Common grazing on heath and wood pasture in the wooded hills of Essex to the south of the area gave way to private arable and livestock holdings in the late 18th and 19th centuries, and a characteristic pattern of substantial farmsteads within regular patterns of

enclosure especially in the more low-lying areas. A principally dispersed settlement pattern became established within the extensive tracts of the Essex heathlands in the medieval period, reinforced by 19th-century enclosure of the open landscape, which brought about the pattern of new farmsteads and mixed farming still in evidence today. Orchards were established around Colchester, as well as a significant area of meadow pasture and leys following the numerous narrow rivers and streams.

# 5.0 Farmstead Types

## 5.1 NATIONAL OVERVIEW

Farmsteads perform several basic functions: providing shelter for farmers and their families; the housing and processing of crops; the storage of vehicles, implements and fodder; the management and accommodation of livestock. Building functions can be usefully distinguished between crop processing and storage (barns, hay barns, cider houses, oast houses and farm maltings, granaries) and the accommodation of animals (cow houses and shelter sheds, ox houses, stables, pigsties) and birds (dovecots and poultry houses). These functions can either be accommodated within individual specialist structures or combined with others into multi-functional ranges.

The great diversity of farmstead plans (Figure 16) provides a very direct reflection of the degree to which these farm-based functions are located in specialist or combination structures and ranges. The resulting diversity of form and scale is the direct outcome of the significant variation in farming practice and size that occurs both over time and from place to place. Individual farm buildings, for example, could be:

- Small-scale and highly dispersed, as in the wood–pasture landscapes of the Kentish Weald and the Suffolk clays;
- Set out in strong linear groupings, especially in northern pastoral areas with little corn and longer winters and where there was an obvious advantage in having cattle and their fodder (primarily hay) under one roof;
- Arranged around yards, examples being the large aisled barn groupings of the southern English downlands and the large planned layouts built in accordance with ideas being spread through national literature and contacts.

A critical factor in farmstead planning is also the relationship of the farm buildings to the working areas within and around the farmstead and the farmhouse. The major working areas were trackways to surrounding fields and local markets, ponds and cart washes, the areas for the movement of vehicles and animals, the accommodation of animals and the platforms where hay and corn would be stacked, the latter prior to threshing in the barn. The size of the areas for stacking corn (known as rickyards in most of the country) varied according to local custom and the extent of arable crops kept on the farm.

Local tradition and status were the principal reasons for whether the house was accessed through the yard and buildings were attached, or whether the house looked toward or away from the yard. Internal access between dwelling house and farm buildings was a feature of farmyard architecture in much of Europe. However, in England from the 13th century it became much more common to have separate entrances, even where buildings and houses were joined. The role of women in the farmyard was commonly restricted to 'milking cows, feeding pigs and calves, making butter and cheese, tending poultry, and occasionally tending with the hay and corn harvests' (Whetham 1978, p.81). This led to the integration into the house of processes such as brewing and dairying, and a formal separation of the house and gardens from the farmyard, especially in the case of post-1750 remodellings and larger farms typically over 150 acres. In such instances, the house could face toward its own home close or garden.

The development of the farmhouse has been the subject of regional and national studies (Barley 1961, for example). Farmhouses can tell us much about the former prosperity and development of steadings, such as the major phases of rebuilding that affected parts of southern England in the 15th to early 17th centuries and the wealth introduced through cattle rearing in parts of northern England in the century or so after 1660. In summary, the most common farmhouse plan of the medieval period, traceable to the 12th century, has the main entrance in one side wall to an entrance passage (usually with a door opposite) that separated an open hall (to allow smoke from the fire to escape through the roof) from a lower end, which could house a kitchen, services and in some areas livestock. The hall served as the main living and eating room, status and space determining whether there would be an inner chamber (for sleeping or a private area) beyond. By the end of the 16th century, farmhouses in most areas of England (except in the extreme south-west and the north) had been built or adapted into storeyed houses with chimneystacks. There was a strong degree of regional variation, for example in the positioning of the chimneystacks and their relationship to the main entrance. From the later 17th century, services in some areas were being accommodated in lean-tos (outshots) or rear wings. From the mid-18th century houses that were more symmetrically designed (with central entrances, chimneystacks on the end walls and services placed to the rear of the front reception rooms) became standard across the country. As a general rule, farms over 70 acres needed to look beyond the family for additional labour, and so rooms for live-in farm labourers – usually in the attic or back wing of the house – became a feature of many farmhouses.

16 Farmstead plan types (Farmhouses are shaded darker)

A Linear plan. House and farm building attached and in line. This is the plan form of the medieval longhouse but in upland areas of the country in particular it was used on small farmsteads up to the 19th century.

B L-plan including the farmhouse. Such plans are usually either a development from a linear plan or resemble a small regular courtyard plan (see E–G, below).

C Dispersed plan. Within this small hamlet the farm buildings of the two farmsteads are intermixed, with no evidence of planning in their layout or relationship to the farmhouses. Dispersed plans are also found on single farmsteads where the farm buildings are haphazardly arranged around the farmhouse.

D Loose courtyard. Detached buildings arranged around a yard. In this example the yard is enclosed by agricultural buildings on all four sides with the farmhouse set to one side. On smaller farms the farmhouse may form one side of the yard, which may have agricultural buildings to only one or two of the remaining sides.

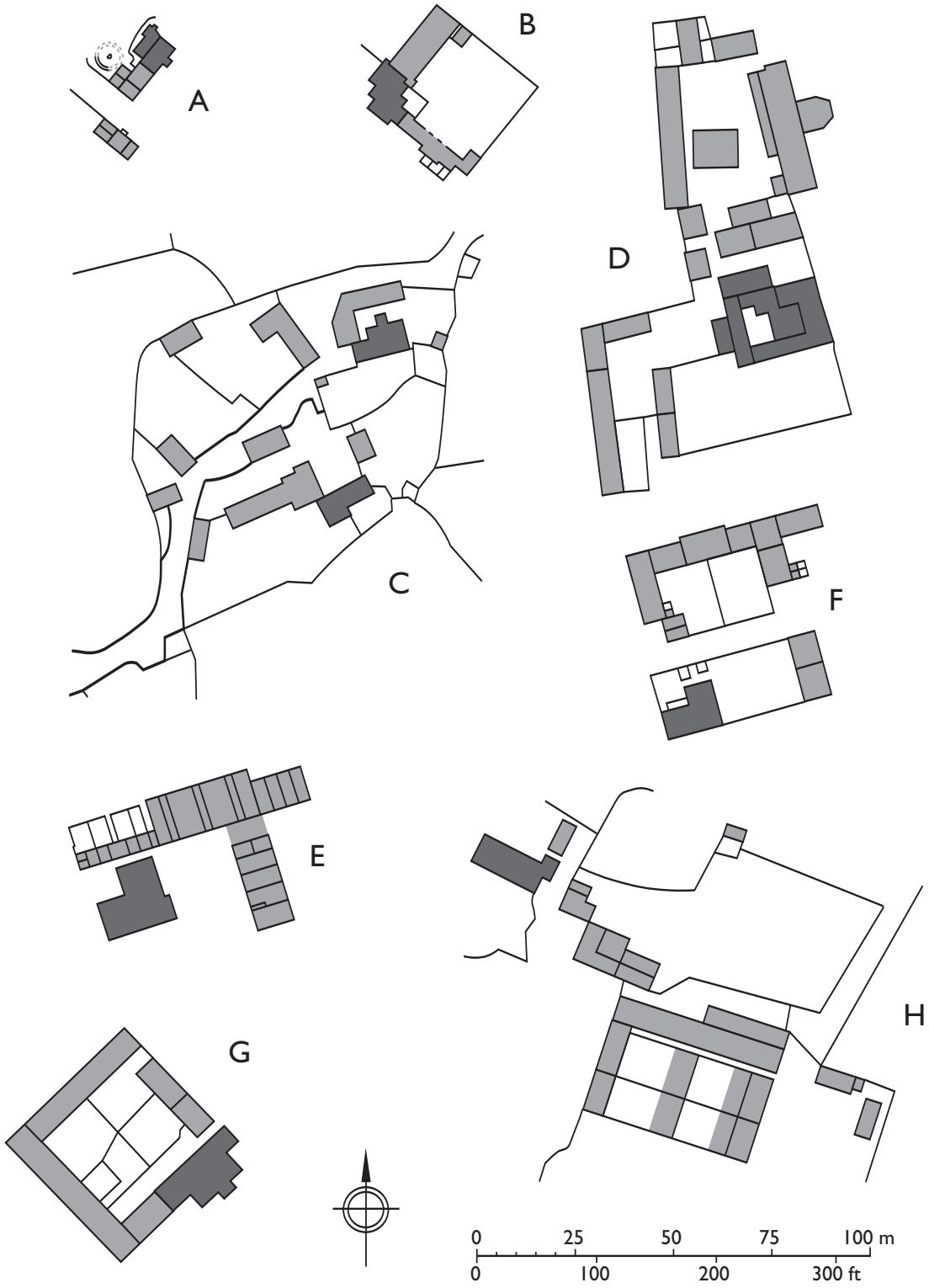
E Regular courtyard L-plan. Two attached ranges form a regular L-shape. The farmhouse is detached from the agricultural buildings.

F Regular courtyard U-plan. The yard, in this example divided into two parts, is framed by three connected ranges. Again, the farmhouse is detached.

G Full regular courtyard. The yard is enclosed on all sides by buildings including, in this example, the farmhouse. Other examples are formed by agricultural buildings on all sides with the farmhouse built to one side.

H Regular courtyard E-plan. This plan form (and variations of it with additional ranges) may be found on some of the larger planned farmsteads where livestock were a major part of the agricultural system. Cattle were housed in the arms of E, the 'back' of which provided space for fodder storage and processing.

*Drawn by Stephen Dent © English Heritage*



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

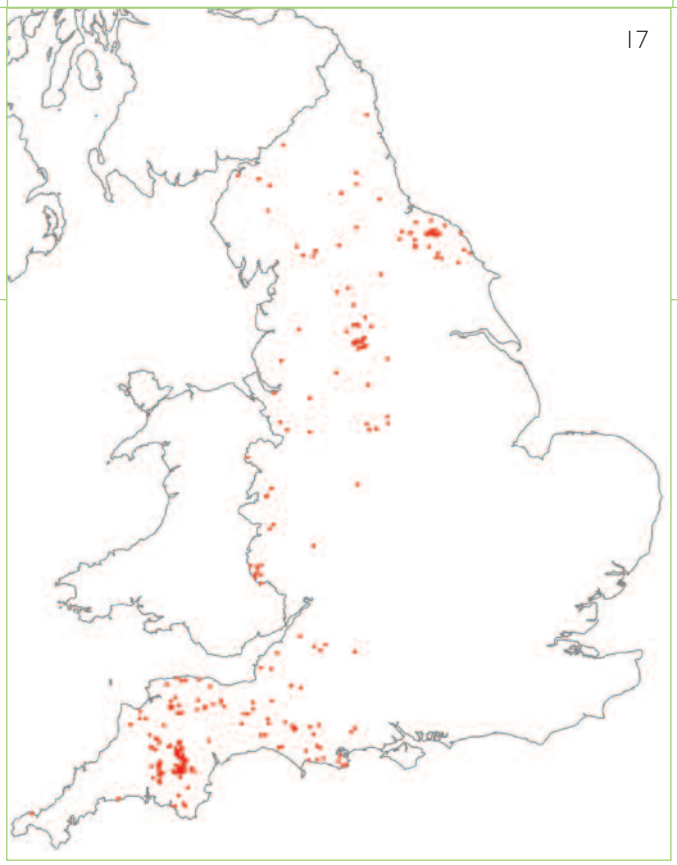
These invariably enclose two sides of a yard, and often represent developments from earlier linear plans, if they have not been constructed in a single phase. L-shapes often evolve from the addition of a barn or byre to an original linear farm, or can represent the partial re-organisation of a dispersed 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. There are no known longhouses in the East of England Region.


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 could be no more than a wall with a gateway, or contain further sheds or smaller buildings such as pigsties, or be 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

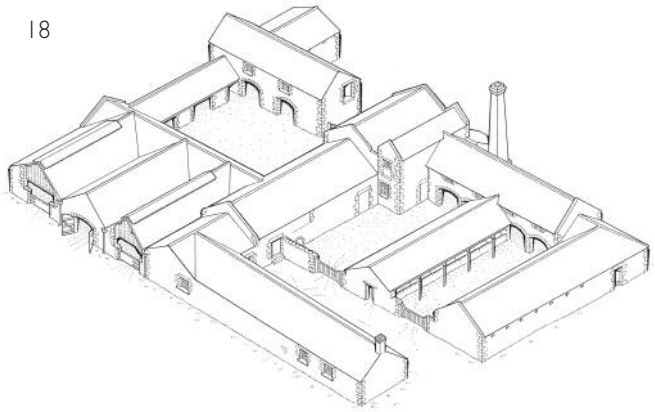
Estates, and thus landlords and their agents, have been massively important in English rural history, with tenants occupying some 85% of the farm area until the land transfers of the early 20th century mentioned in 4.1.4 above (Mingay 1989, pp.943–4). The character of an area thus can be strongly influenced 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 glaring 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 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).

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*

18



### 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 OF ENGLAND

We know little of the form of the farmstead before 1600, but excavation evidence would suggest that a group of buildings around a central court was the usual layout (Wade-Martins 1980, pp.113–14). This is matched by documentary evidence from the medieval period, which records the importance of yard-produced dung (Hallam 1988, pp.281–5). There is no evidence that longhouses (see 5.1) were ever a building type found in the Region. The survival of medieval barns rather than other farm buildings suggests that these were always the most substantial buildings, but sheds for livestock and implements as well as stables are clearly indicated in medieval documents (Davenport 1967, pp.21, 49). Map evidence becomes available from the 16th century. In the South Suffolk and North Essex Claylands, for example, a particularly detailed map for Ingatestone, Essex, in 1556 indicates that most of the larger farms had cow houses and stables as well as barns (Ryan 1986). Map evidence also shows loose courtyard plans for gentry and manorial groups often comprising a barn, stables and granary (Wade Martins 2002, pp.37–9). As late as 1792 a valuation of the Tollemache estate in Helmingham and Framsden described eight of the 11 holdings as having barns and stables adjoining, the stable with a hayloft above. From an exhaustive analysis of the documentary sources in High Suffolk, John Theobald has concluded that before 1650 the only two buildings found on a typical farm in the area were barns and stables (Theobald 2000, pp.161–2) and very few buildings other than barns remain. Livestock sheds were frequently replaced and extended in the 19th century. A terrier of 1830 describes 25 farms in the Needham Market area of the Suffolk claylands. Although stables and cow houses were mentioned on all the farms, those of timber were frequently described as in 'indifferent repair' or in a 'very bad state, should be removed'. In contrast, a newly built stable for ten horses with a granary over of brick and tile was described as 'capital' (Suffolk Record Office HA1/HB4/2).

### 5.3.1 EARLY LOOSE COURTYARD AND DISPERSED LAYOUTS

This Region retains some of the earliest farmstead layouts in the country, matched only by parts of the West Midlands, South East and South West regions. Early (pre-1750) farm buildings are largely absent from the acidic coastal and heathland soils affected by post-1750 improvements, being instead concentrated on deeper soils (notably the Flegg Loams), the claylands and in valley bottoms. These areas of predominantly mixed and later dairying farms experienced little investment in the first phase of the agricultural revolution, mid- and later 19th-century additions for cattle housing ensuring the survival of earlier barns, stables and even cow houses.

A typical layout of an evolved farmstead in the Region includes an earlier barn, extended or with a porch added as grain output increased at the end of the 18th century. A second barn might then have been built or an integral stable opened up to increase barn space. A granary above a cart shed was often also a later addition, again providing housing for the increased grain output. A separate cow house and later stable block to replace the stable originally in the barn was also built. Individual buildings were sometimes connected by temporary hurdles or brick walls to create yards for the winter sheltering of animals. A terrier of farms in the Creeting area compiled in 1830 describes 25 sets of buildings in detail (Suffolk Record Office HA1/HB4/2). Nearly all have at least one barn with stables, cattle yards, wagon lodges, granaries and cow houses. Piggeries and hen houses were also an important part of most yards. Cheese rooms, apple lofts and granaries were sometimes located in the house. However, they were not in good condition and in this may well have been typical of others in the Region: 'It must be observed that the farm houses and agricultural buildings are of a very inferior description, mostly very old and having been much neglected for a great many years, there are now considerable repairs wanting' (Suffolk Record Office HA1/HB4/2). The landscape of the Creetings is typical of the Central-West claylands of Suffolk (around the junction of the South Suffolk and High Suffolk Claylands, dominated as it is by irregular and irregular-sinuous pre-18th-century field systems. The farms are isolated across the parish in the centre of their fields and in 1838 at the time of the tithe map the farmsteads mostly comprised a scatter of buildings. Most of the farms were owner-occupied or in small estates of one or two farms.

### 5.3.2 REGULAR COURTYARD LAYOUTS

Regular courtyard farms are documented in the Region from the mid-18th century, although no surviving groups can be dated before the 1780s (Wade Martins 1991, p.198). They are concentrated in areas of post-1750 enclosure, and are strongly associated with the activities of estates: North West Norfolk, Breckland, the Greensand Ridge of Bedfordshire, Mid Norfolk, Central North Norfolk, North West Norfolk and North Norfolk Coast. The earliest 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 could be no more than a wall with a gateway, or contain further sheds or smaller buildings such as pigsties. The main yard would be undivided allowing the cattle to roam across it. Only rarely in East Anglia did the house form one side of the yard. Formal courtyard farms are more usual on the great estates where they could make major architectural statements. The most famous of Norfolk landlords was Thomas William Coke of Holkham on the north coast. During the 19th century most of the 70 farms on his estates were remodelled and large red brick barns surrounded by pantiled shelter sheds are typical of that part of the county (see 4.2.1).

Some of the largest examples of mid-19th century industrial farms in the Region are to be found on the Duke of Bedford estates around Woburn on the Bedfordshire Greensand Ridge/Bedfordshire and Cambridgeshire Claylands character areas. Whilst little survives of the first phase of estate building around 1800, the mid-19th century saw the rebuilding of about 35 estate farms, many on a very grand industrial scale with tall chimneys over engine houses. These brick-built, mostly E-plan groups include a steam-engine house with tall chimney and wide feeding sheds often forming the central wing (Wade Martins 2002, pp.118–19; 146–7). The Lucas West estate around Silsoe and Gravenshurst was also active at this time putting its distinctive mark on its farms (Wade Martins 2002, pp.207–8). Cambridgeshire was a county with few landed estates, although the Duke of Bedford again owned the area of Thorney level in the Fens where he improved drainage and rebuilt farms after 1840. Not many of his farms survive because these brick buildings, which included such features as hit-and-miss ventilator windows, sliding doors and steam engines, were erected on the peat, which shrank and caused the walls to crack. They were replaced with much lighter weatherboarded buildings at the end of the 19th century (Wade Martins 2002, p.209). In the mid-19th century Essex farming prospered, with east Essex described as one of the 'best farmed districts in the kingdom'. Owners such as Dr Cline, Lord Petre and Sir Henry Smith were building excellent farmsteads 'in the modern style'. Where substantial older buildings existed, these were being adapted, 'so as to render them everything a tenant requires or could even wish for' (Baker 1845, p.31).

### 5.3.3 L- AND U-SHAPED COURTYARD LAYOUTS

L- and U-shaped courtyard layouts that evolved from earlier dispersed layouts are found throughout the Region. In the mid- and late 19th century, it was common for open yards to be divided up to form a greater number of smaller yards allowing for individual feeding of different groups of cattle. E-plan steadings developed from earlier U-planned steadings, as in North West Norfolk and Breckland, and from L-plan and dispersed groups after 1840 (Wade Martins & Williamson 1999, p.86): estate policy was often a critical factor in their adoption (Wade Martins 1991, p.200). These changes were less likely on the smaller dairy farms where cows had always been kept in sheds overnight and here a scattered group of buildings around a yard remained typical.

The years 1840 to 1870 saw unprecedented activity of farm building and improvement. Changes in design reflected various farming and technological developments of the period. As standards of living rose and railways made the transport of animals easier, the demand for meat grew and livestock began to play a more important part in the farming system of eastern England. Previously stores had been bought in, kept in yards and valued primarily for their manure before they were walked to London for the Smithfield market where prices could be volatile and weight was lost on the long walk (a week from Norwich). With the railways and more certain prices, animals were valued for their meat and so interest in efficient fattening techniques increased. Individual loose boxes and covered yards were introduced on the more progressive farms, particularly on the great estates where there was plenty of money to spend.

Agricultural depression in the last years of the 19th century affected farm buildings in two contrasting ways. The large estates tried to spend their way out of depression, either by using their own money or by borrowing from the land-improvement companies to build cattle yards and sheds to house livestock, which was the branch of farming that remained most profitable. The L- and U-plan shelter sheds with walls enclosing yards were often dated and stood at a distance from the old steading, sometimes out in the fields. Around London many farms changed to dairying and this involved the building of new, more elaborate accommodation for cows and commercial dairies. Away from the estates, owner-occupiers could not afford any changes and so buildings received little attention except for some essential patching. Mid-19th century buildings remained very little altered and it was not until farming prosperity returned in the 1950s and '60s that a new phase of building alteration, often involving the demolition of the old, began.

# 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 BARNS

### 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.

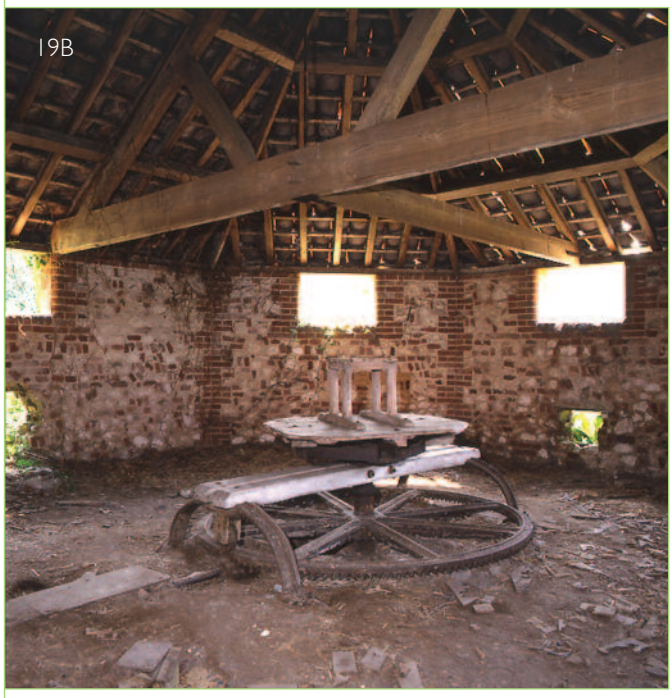
#### 6.1.1.1 Plan form

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 The use of portable steam engines often left no physical evidence within the barn structure but in some cases drive shafts and fly wheels survive in-situ. (Dorset Downs and Cranborne Chase)
*All © English Heritage/Michael Williams except* E *© Bob Edwards*


19A


19B


19D


19C


19E

### 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 a common practice 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. 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 OF ENGLAND (Figure 20)

#### 6.1.2.1 Threshing Barns and Aisled Barns

Proximity to the London market, climate and soils were major factors in the dominance of arable husbandry in much of the Region, which shares with the South East the principal concentration of surviving pre-1550 and pre-1750 barns in England. There is a marked concentration of pre-1750 farm buildings (predominantly barns) on the Flegg Loams and across the claylands of the Region (see 5.3). They also survive in village centres, ranging in scale from five-bay 17th-century barns (at Ringstead in North West Norfolk) to small in scale (such as Fenstanton in the Bedfordshire and Cambridgeshire Claylands). The heyday of barn building was the period 1700 to 1850. The increase in grain production stimulated after 1796 by the war with France, created a need for increased barn capacity resulting in either the adaptation, rebuilding or enlarging of existing barns or the building of additional ones. Very few pre-18th-century barns survive in the areas owned by the improving estates. These tend to be the light soils of Suffolk and Norfolk where timber was scarce.

Barns were often seen as a status symbol and so could be treated decoratively. Weatherboarded barns in Suffolk

20 Barns and crop storage in the East of England Region

A Some of the earliest barns in England are to be found in the Region, including this large aisled barn at Cressing Temple – built by the Knights Templar in the mid-13th century. (South Suffolk and North Essex Claylands)

B Aisled barns such as this 15th-century thatched barn are a characteristic feature of the southern half of the Region. (South Suffolk and North Essex Claylands)

C A mid-16th-century unaisled barn. Many early timber-framed barns were multi-functional buildings that provided crop storage and animal housing, often with floored bays. This barn originally had three bays of stabling with lofts over, one of which was converted to barn space in the 18th century. Smaller barns often had all the animal housing function removed to provide increased crop storage capacity from the 18th century. (South Suffolk and North Essex Claylands)

A & C © *English Heritage / Michael Williams*

B © *Susanna Wade Martins*

(continued overleaf)




were sometimes painted with 'ruddle', giving them a red appearance, and giving rise to numerous Red Barn Farms – this was also used to colour the framing of timber-framed farmhouses. Very few of these red barns still survive, and many have been incorrectly stained or painted black. Although there is little stone in the eastern Region, there was plenty of scope for the use of decorative brickwork either on its own or in conjunction with timber framing in the form of ventilation slits, grilles, owl holes, buttresses and pilasters or decorative gables such as the Flemish crow-stepped gables that were popular in East Anglia by the 17th century (Lake 1989, p.72). By the 18th century brick was becoming the more usual building material and on the new farms of the enclosures (such as in North West Norfolk) five-bay brick barns with pantile roofs, often linked to adjoining cattle sheds, are more typical.

A highly distinctive characteristic of the Region, also shared with the South East, is the concentration of aisled barns. These date from the 12th century and continued to be built into the 19th century. The earliest unaisled barns date from the late 15th century. Aisled barns of post-1550 date can reuse major components from 13th- and 14th-century barns that may have stood on the same site or nearby (Aitkens 1989).

Aisled barns – many of them the result of a massive rebuilding programme underway between 1550 and 1650 – were particularly concentrated in the west of Suffolk (Dymond and Martin 1999, pp. 176–7), in the rich loams of the Broadland fringe in Norfolk, and in most of Essex, Hertfordshire and east Cambridgeshire. The majority of barns are of a medium four- to six-bay size and are found across central Suffolk on the rich loams of yeoman holdings, with slightly larger barns of seven to eight bays being found in the cereal-growing areas. In Hertfordshire the majority are between five and eight bays. Some of the largest manorial farms of the county had two or three separate barns while typically medium-sized farms had two, allowing for the wheat and barley to be housed and threshed separately. Smaller farms were typically provided with only one barn (Wilcox 2003, pp.68–78). This pattern is reflected across much of the south and east of the Region where the thatched (or formerly thatched) weatherboarded, timber-framed three- or five-bay barn, often dating from the 16th or 17th century, is typical of the smaller farms of the heavy clays. Throughout the eastern part of the Region it is clear that much of the crop was stacked in yards from an early date (Wade Martins & Williamson 1991, p.83).

### 6.1.2.2 Combination Barns

Documentary and archaeological evidence shows that barns in many parts of the Region were multi-functional buildings. On inventories of the 17th century implements and farm produce other than cereals, such as wool, are listed as being stored in them. On the dairy farms of the South Norfolk and High Suffolk Claylands 16th-century and later pre-1750 barns were typically of three bays with a central threshing floor and a fourth bay containing

20 Barns and crop storage in the East of England Region (continued)
D & E The Region also contains some important early secular stone- and brick-built barns. (D South Norfolk and High Suffolk Claylands; E The Broads)
F In the north of the Region solid-walled barns are characteristic, with flint and gault brick used in this early 19th-century seven-bay barn. (South Norfolk and High Suffolk Claylands)
G & H Whilst the large, fine barns attract the attention, the characteristic barns of the south of the Region range from three to seven bays and are typically timber-framed, clad in weatherboard and often retain a thatched roof.
(G East Anglian Chalk; H South Suffolk and North Essex Clayland)
D & E © *English Heritage / Michael Williams;*
G © *Susanna Wade Martins;* F & H © *Jeremy Lake*


20D


20E


20F


20G


20H

lofted stable or cattle accommodation. This is the direct result of both the need to house dairy cattle and the reduced requirement for crop storage in these pastoral areas (Aitkens & Wade Martins 2002, pp.10–11). In barns where the actual divisions have since gone, archaeological evidence in the form of mullioned windows and the mortises for loft floors often remains. Only as corn production increased in the 19th century did barns become dedicated crop storage and processing buildings. In High Suffolk in the early 18th century, where farming was primarily pastoral and arable was periodically left fallow, the typical three- or four-bay barns capable of holding the crop from 30–40 acres may well not always have been full. After 1750, however, as output increased and more land was ploughed up for cereal production, there was a shift towards outdoor stacking and the creation of stack yards. Barns were also extended by one or two bays and arch braces replaced by knee braces. Porches were also added. The earliest reference found to a porch in High Suffolk was in 1727 at Thomas Mill's farm in Parham (Theobald 2000, pp.170–76).

### 6.1.2.3 Mechanisation

The mechanisation of the threshing process was not common in the Region until the late 19th century. In the early 19th century this might be a horse gin, possibly housed in a round house. These were very rare in the Region, the more common being the later arrangement where a traction engine was used and a hatch cut in the barn wall to allow belting to enter. A barn on the Gunton estate in Norfolk was described in 1894 as excellent: 'Very wisely, it has been turned into a chaff cutting house, dressing house and turnip house' (Wade Martins 1991, p.171). These alterations might well have involved the dividing of the building with partition walls, thus breaking up the wide-open spaces that are usually

21 Granaries
A 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 louvered or, in this example, adjustable louvers. (Hampshire Downs)
A © *English Heritage / Michael Williams;* B © *Bob Edwards*



considered so important to the character of the traditional barn. However, they form part of the story of adaptation, which is the essence of farm building history and must be recognised as such.

Two round barns survive at Little Tawney Hall and Woodhatch Farm, Essex. They were probably built in the 1860s by Sir William Bowyer-Smith, who also rebuilt farms and provided a village school. It is eccentricities such as these that add interest and character to the local scene (Padfield 1991, pp.60–61).

## 6.2 GRANARIES

### 6.2.1 NATIONAL OVERVIEW (Figures 21 & 22)

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

Grain was typically accommodated in:

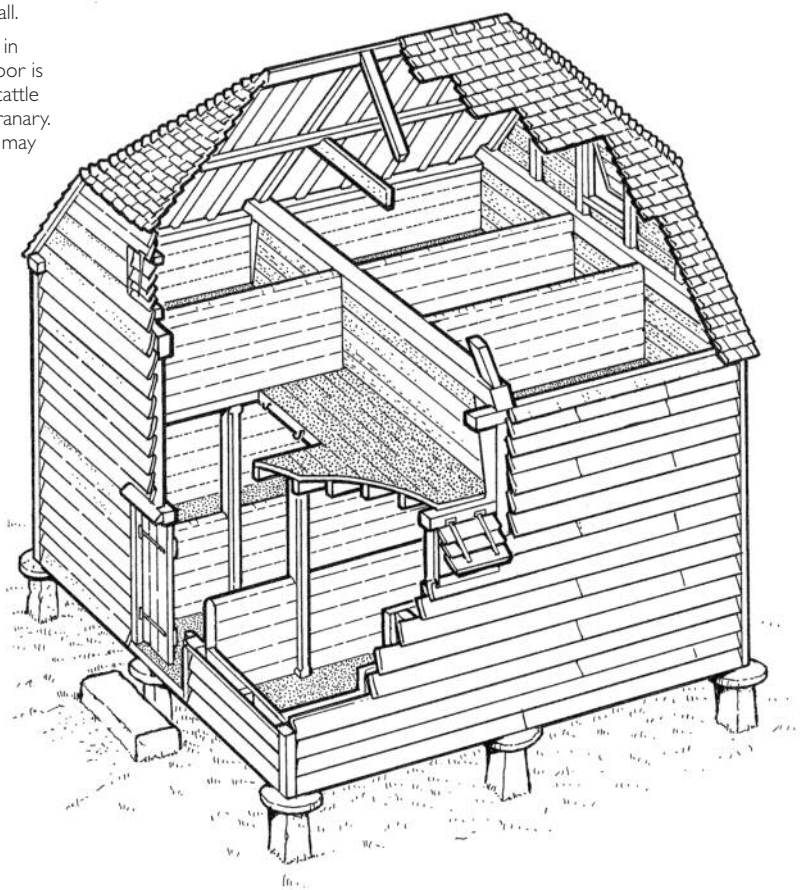
- The lofts of farmhouses, a practice common before 1750.
- Small, square or rectangular structures raised above ground level on mushroom-shaped staddle stones or brick arches and accessed by moveable wooden steps. Internally, they may have been fitted with wooden partitions to create grain bins. They 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 21).
- 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

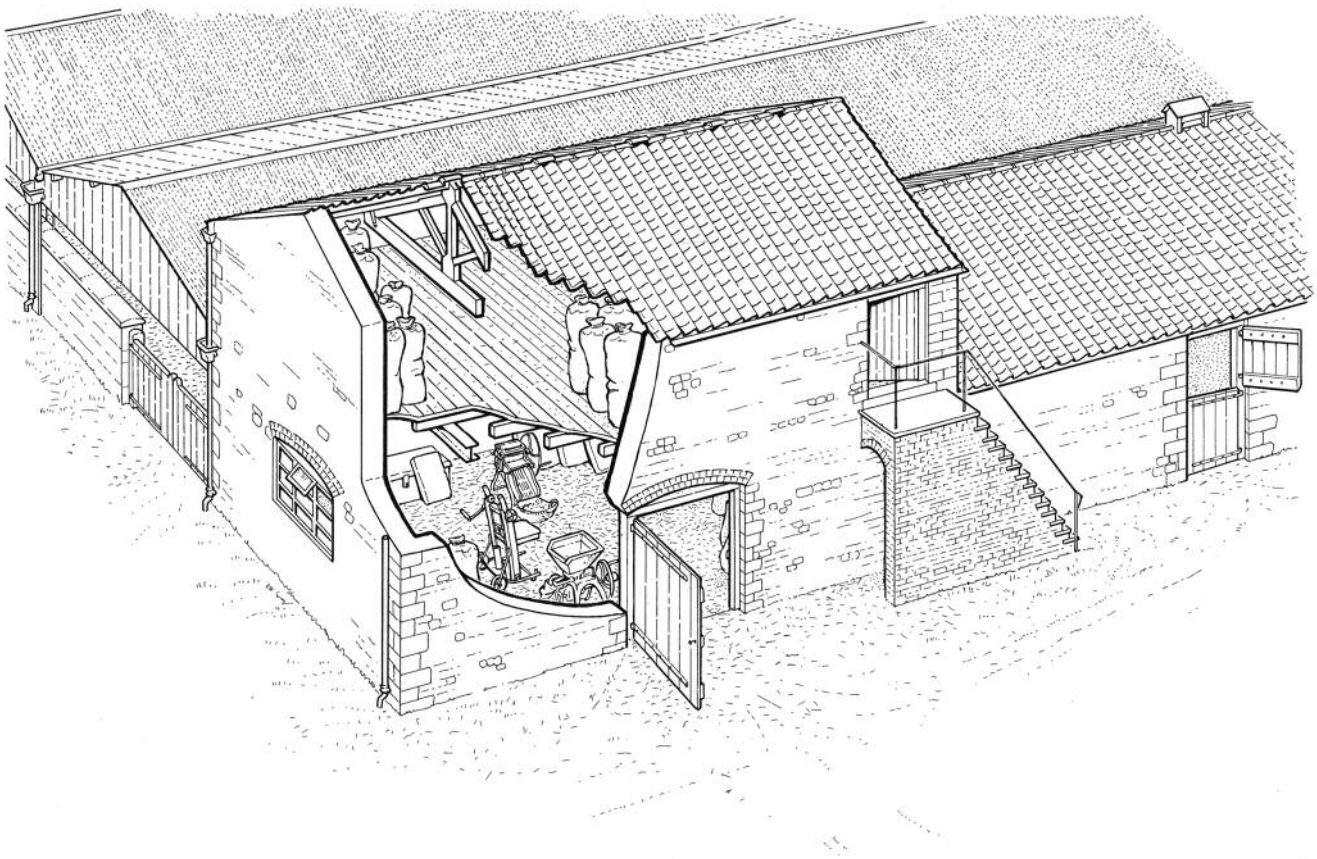
22 Granaries

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.







ventilation. Examples date from the 17th century in arable areas. A separate external stair often gave access to the granary door (Figure 21). 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.

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

(Figure 23)

The earliest granaries in the Region are thought to date from the 16th century, but such an early date is generally unusual (Wilcox 2003, p.59). Probate inventories suggest that up to the 18th century barns and houses were used for storing implements and threshed grain. The Region has some of the earliest granary buildings in the country: substantial brick structures, in the upper floors of tall cart-shed structures or free-standing structures mounted on brick or stone piers (McCann 1996, pp.3–7). In many cases granaries were inserted over already existing cart sheds after about 1750 as more grain was being produced and traditionally pastoral areas were becoming arable. Most granaries were at first-floor level, although there were a few later examples built up on brick piers. The overwhelming majority of granaries date from the 18th and 19th centuries. Where stone was available for building, such as in parts of Hertfordshire and Cambridgeshire, they were free-standing buildings raised up on mushroom-shaped staddle stones or cast-iron staddles, but over much of the Region granaries were built over cart sheds. An unusual example from Norfolk has a double waggon door in the back wall of the cart lodge to allow a waggon to drive through and be loaded (in this case through a trap door in the granary floor) without having to back out. The granary walls were often weatherboarded, even in areas where weatherboarding is unusual, which helped ventilation; surprisingly, in Hertfordshire, where weatherboarding is usual on most farm buildings, the framing of granaries is in-filled with brick (Wilcox 2003, pp.84-6).

## 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 OF ENGLAND

(Figure 23)

The Region does retain some very early examples of cart sheds dating from the 17th century, although the great majority of surviving examples date from the expansion of grain production from the late 18th century. Over most of the Region cart sheds formed part of a combination building, with a granary above and wooden, cast iron or brick piers supporting the upper floor along the open side. Occasionally wide brick arches supported the openings, but this was more unusual. One bay of the cart shed was sometimes enclosed, with a wide door for the storage of small implements or perhaps a pony trap. Hertfordshire cart sheds differ in that all are single-storey buildings, none having granaries above them.

## 6.4 HAY BARNS AND OTHER CROP-RELATED BUILDINGS

### 6.4.1 NATIONAL OVERVIEW

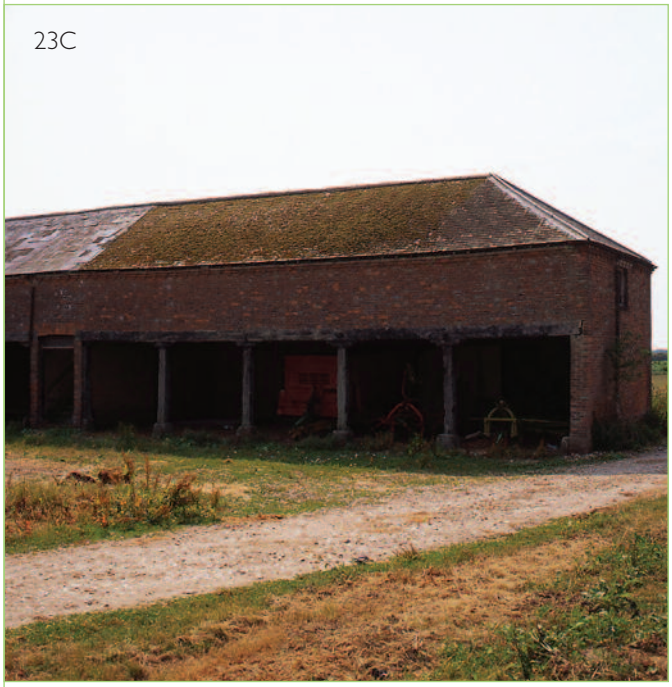
Hay would be kept in lofts over the cow house and stable, stored in stacks or in purpose-built barns. The

23 Granaries and cart sheds in the East of England Region
Until the 18th century it was usual on most farms to keep the threshed grain in the farmhouse. As output increased purpose-built granaries were built, typically as part of a combination cart shed/granary. A and B are 18th-century buildings (although A was extended from four bays to eight bays in the 19th century). C is a mid-19th-century example. Free-standing timber-framed granaries raised on plinth walls (D) or standing on staddle stones are characteristic of southern East Anglia and the south-east of England.
Single-storey cart sheds (E & F) built in timber frame, brick or, more rarely, in earth are found on many farmsteads.
(A North West Norfolk; B Breckland; C North West Norfolk; D East Anglian Chalk; E South Norfolk and High Suffolk Claylands; F South Suffolk and North Essex Claylands)



23A


23B


23C


23D


23E


23F

24 Hay barns and other crop buildings
A & B Hay barns are not a common building type in the East of England generally but some were built in areas that adapted to dairying at the end of the 19th century. (A The Broads; B Suffolk Coast and Heaths)
C Until the 19th century maltings often formed part of the farmstead. From the mid-19th century malting became a more industrialised activity concentrated in towns leaving farm maltings redundant. Accordingly, maltings such as this example in Cambridgeshire are now rare. (East Anglian Chalk)
A © *Jeremy Lake;* B & C © *Susanna Wade Martins*




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 OF ENGLAND

### 6.4.2.1 **Hay barns** (Figure 24)

Hay was either stored in haystacks or in haylofts above stables. Evidence for this previous use of lofts can be seen in the hay drops, open chutes above hayracks through which hay could be pushed down into the racks below. As some areas particularly in Essex and Hertfordshire adapted to dairying at the end of the 19th century, open-sided buildings often consisting of slate roofs supported on brick piers were built as hay barns.

Prefabricated corrugated-iron Dutch barns were also available by the end of the 19th century.

#### 6.4.2.2 Farm Maltings

Malting barley was a significant crop in Norfolk and Hertfordshire and both were important malting counties. With the coming of the railways, most local maltings were given up and the industry became concentrated in the market towns, often around railway stations. In the 18th century, however, farm malthouses were a common sight and one survived in a ruinous state on a farm in north-east Norfolk into the 20th century. Its repair had not been recommended by the land agent in the 1890s who wrote, 'Would these malt houses be required by any other tenant in the case of Mrs Horsfield's retirement or death? I should say "no" as country malt houses in the present day are of very little use or profit…' (Wade Martins 1991, p.146). The example surviving at Burwell in Cambridgeshire (Figure 24C) is thus a great rarity. Stone built with a thatched roof, it is long and low allowing for open areas of floor for the germinating of grain that had been steeped at an upper-floor level for several days. The loading bay for the sacks of barley is halfway along the building at first-floor level. The thatched roof would help maintain an even, warm temperature for germination that would take between eight and ten days, when the grain would be dried in a kiln. Typically the kiln is at one end of the building with a tiled, conical chimney (Brunskill 1982, pp.98–9).

#### 6.4.2.3 Onion Houses

A type of building associated specifically with the traditional market-gardening economy of the gravel soils of the Bedfordshire Greensand Ridge and adjacent Bedfordshire and Cambridgeshire Claylands is the onion shed. Onions were already a leading crop by the early 19th century, but by the second half of the century they were grown on a field scale with production encouraged by the arrival of the railway. When the onions were harvested they were firstly dried on the ground and then hung in high louvre-boarded black barns, which were once a familiar sight around Sandy and Biggleswade and a number survive in the Ivel valley (Clarke, 2001).