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.

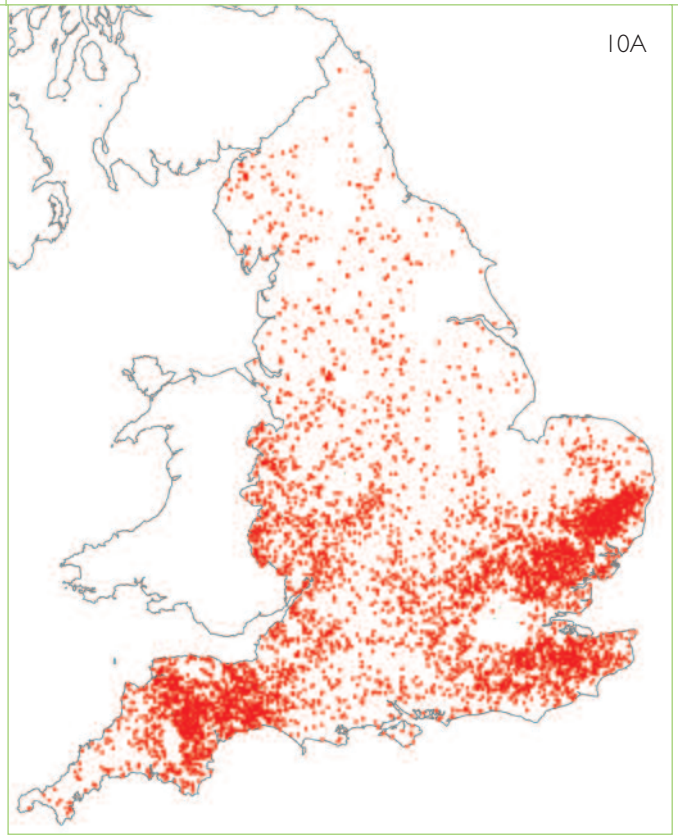
4.1.1.1 Survival and Value

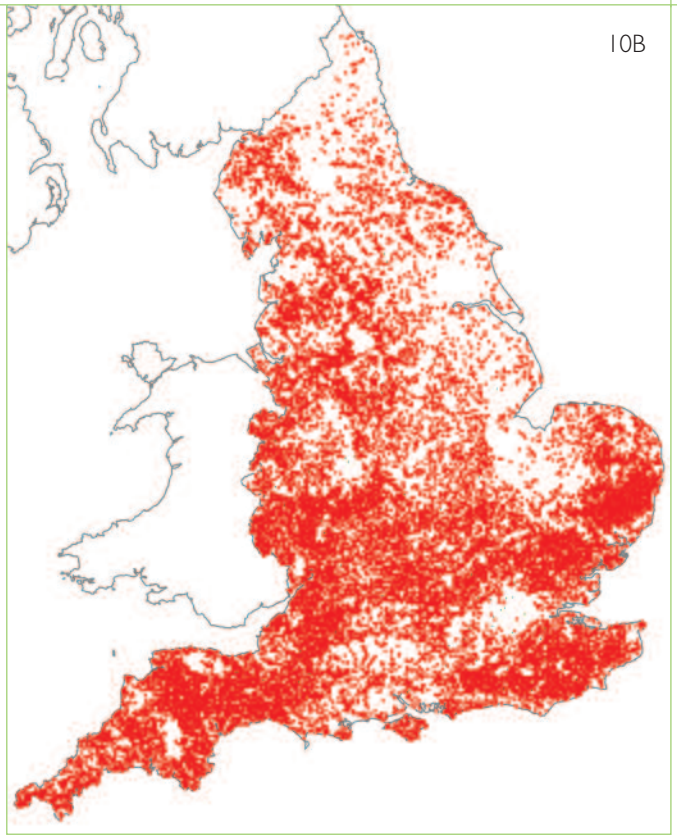
All survivals of this period are of great rarity and significance. The best-known survivals are the great barns of secular and especially ecclesiastical estates. These comprised the foci of farmyards with ancillary buildings that have been almost completely swept away, for which documentary but very 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

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.





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

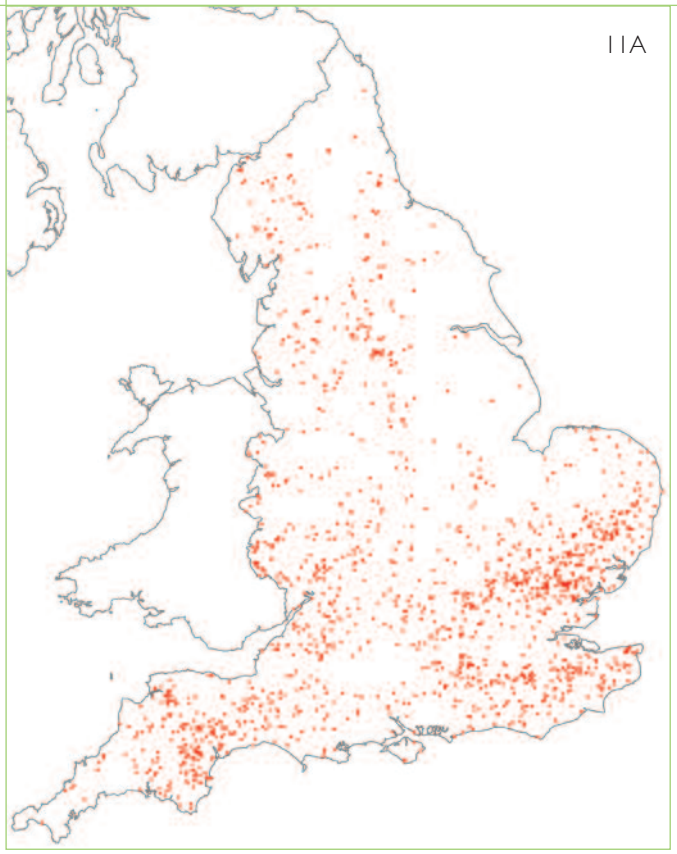
Substantially complete farm buildings of this period are rare. They will often provide the first surviving evidence for the development and strengthening of regional traditions and building types: for example, the timber-framed West Midlands barns that replaced earlier small cruck barns; the linear farmsteads 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.

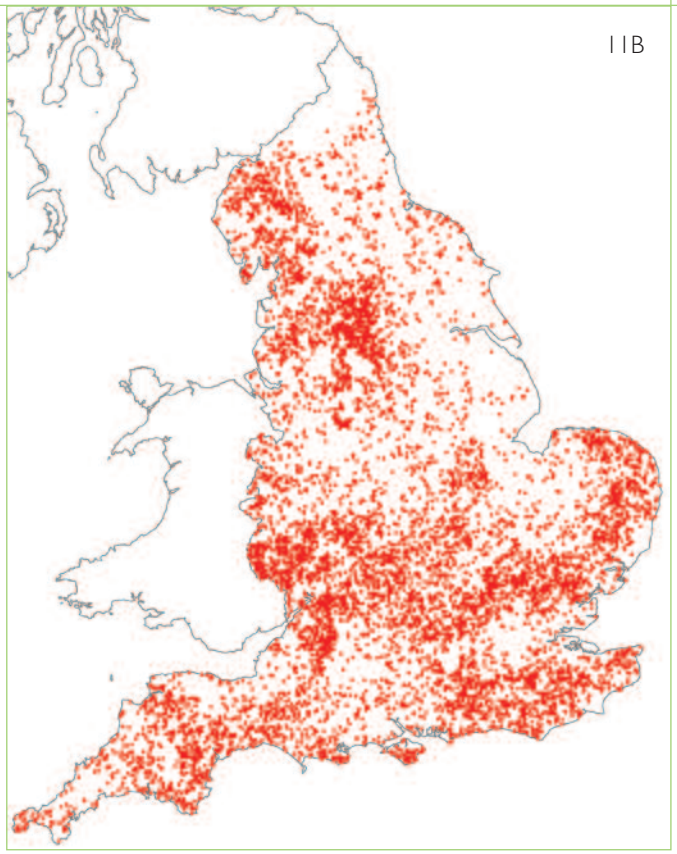
4.1.3 1750 TO 1880

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

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 1550–1750 period, 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 1750–1880 period reinforces rather than adjusts this distribution. Such maps present an obvious invitation to future analysis and research.





'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.
- 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.
- 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 development of more intense forms of housing for pigs and poultry, and the replacement, as a result of hygiene regulations, of earlier forms of dairy cattle housing with concrete floors and stalls, metal roofs and fittings. County councils began building new farmsteads, 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 SOUTH EAST

Probably of greatest significance to the farming of the Region is its proximity to the London market. The navigability of the Thames and some other rivers reaching far into the heart of the Region, and the use of coastal shipping, meant that the capital provided a ready market for most goods, especially corn. The growing demands of London meant that much of the Region continued to specialise in corn production, even in the 15th century and the period 1650 to 1780, in contrast to the other parts of the country where arable significantly contracted in favour of pastoral farming.

Some areas of the Region that did not have access to water transport for arable produce or where corn was less profitable, such as the coastal marshes, began to specialise in stock that could be driven to market on the hoof, or in higher value goods that made land transport financially viable.

The demands of London also encouraged specialised production: Kent was already recognised for its fruit, vineyards and cider by the 13th century (Hallam 1988, p.316) and by the 17th century fruit growing to supply the London market was increasing in importance. Hop growing developed from the later 16th century and by the mid-17th century it was claimed that around 25% of the hop acreage in England was in Sussex (Martin & Martin 1982, p.14). At its maximum in the mid-19th century 45,000 acres were under hops in Kent alone (Everitt 1977, p.15). Hop production also spread into Surrey, Hampshire and parts of the Weald.

A feature of the landscape of the Region was the contrast between areas of open arable and wood pasture. The wood-pasture areas (see 4.2.9) consisted of smaller farms and a higher level of free tenure, affording a greater degree of diversity in agricultural practice, including woodland enterprises, fruit growing, dairying and fatstock. The coastal plains provided some of the most fertile, productive land in the Region. The chalk downlands of the Region were the prime sheep and corn farming areas from the medieval period at least, sheep enriching the soil through their manure and the process of folding the flock on the arable land. They generally supported large, manorial, capital-intensive farms that required a large labour force.

The reliance of a great part of the Region on corn and sheep meant that when the prices of both wheat and wool plummeted in the late 19th century the crisis in farming was acute. In some areas there was a shift away from arable: in Kent there was a decline of around one third in the extent of acreage under crop and a near 60% drop in the wheat acreage in the last quarter of the 19th century. In the same period rents fell by 37% (Holderness & Mingay 2000, p.374). Other parts of the Region experienced similar trends and had to adapt their agriculture to the difficult times. For example, on the chalk of Berkshire there was a vast increase in dairying, the county supplying London with one-quarter of its rail-borne milk by 1870 and production continued to increase after that date (Barnwell & Giles 1997, p.11). Dairying also increased on the Hampshire Downs, although not to the same extent. Some farmers tried to intensify their corn production by utilising the artificial fertilisers that were becoming more widely available, which enabled them to decrease the size of the sheep flocks to bring yet more downland into production to survive. Even so, by the end of the 19th century there were large areas, particularly downland areas, where the land was of marginal quality and for which it was difficult to find tenants or to earn a living from the 'thousands of acres of derelict land that probably fetches no rent at all' (Haggard quoted in Holderness & Mingay 2000, p.375).

Areas where hops, fruit and vegetables were produced, such as Kent, were provided with some protection against the worst of the late 19th-century agricultural depression (Whitehead quoted in Everitt 1977, p.5) although even the hop industry was in decline in this period, with only the areas producing the highest quality hops managing to survive into the 20th century.

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.

4.2.1 South Downs (JCA 125)

There were differences between the west and east parts of the area, the River Adur marking the boundary. Even from the 14th century there were more sheep in the eastern part of the South Downs and tithe values were higher. Common fields were largely unhedged and enclosure began early, particularly on the estates of the bishops of Chichester, where by the 14th century often only the land of lowest value was held in common. By the 16th century most manors had enclosed the demesne lands. In contrast, on the western downs common fields were often hedged and there was more

woodland in the landscape. Holding size was generally smaller and the sheepfold was of less importance. Enclosure began in piecemeal fashion from the 15th century, typically creating small fields for holdings of 15–20 acres. The small landholders often looked to diversify, with cattle rearing, dairying and timber production becoming important elements of the agricultural economy. Even in the 18th and 19th centuries the distinction between the two parts of the South Downs was evident in the sheep breeds encountered, with improved South Downs found to the east and the old downland variety to the west (Brandon 1999, pp.58–109).

4.2.2 **Hampshire Downs, and Berkshire and Marlborough Downs** (JCAs 130 and 116) (Figure 12) This area includes a small part of Salisbury Plain and West Wiltshire Downs (JCA 132: see South West).

On the Hampshire and Berkshire Downs the importance of the sheep and corn system can be assessed from the surviving records of the bishops of Winchester in the unrivalled series of Pipe Rolls dating from the early 13th century and stretching into the early 18th century. Chalkland manors could maintain flocks of around 2,000 sheep; for example, in 1301–2 there were 1,912 sheep on the manor of Twyford (Page 1996, p.275). The value of agriculture in Hampshire is attested to by the fact that during the medieval period the Bishopric of Winchester was one of the wealthiest sees in Europe, second only to Milan.

Throughout the medieval period these monastic estates tended to be directly managed (farmed in demesne). This began to change during the late 15th and 16th centuries when farms and manors started to grant long-term leases, often to industrious tenants willing to increase the amount of land they were able to farm. On the estates of the bishops of Winchester in Hampshire this process resulted in the development of new or larger manor farmhouses, in some cases financed by the lord, where previously a number of adjoining manors had been administered from one principal manor house within the group (Roberts 2003, p.211). The leasing-out of estates removed some of the uncertainties of farming and provided a guaranteed annual income for the monastic institutions. This process was sometimes associated with depopulation of settlements. Such depopulations are often considered as evidence of large landowners profiteering. The records of the bishopric of Winchester show that this was not always the case. Sometimes the demise of a settlement and the subsequent leasing-out of the land was at least partly due to a lack of demand for land, and throwing common fields into one farm, often associated with the enclosure of the fields, resulted in a considerable reduction in rental income (Hare 1994, p.166). The rise of the yeoman farmer on the Hampshire Downs, working larger areas of land, could have only been possible with large numbers of wage labourers. The scale of farming on the chalk downs was more grand and ambitious than anywhere else (Thirsk 1967, p.65).

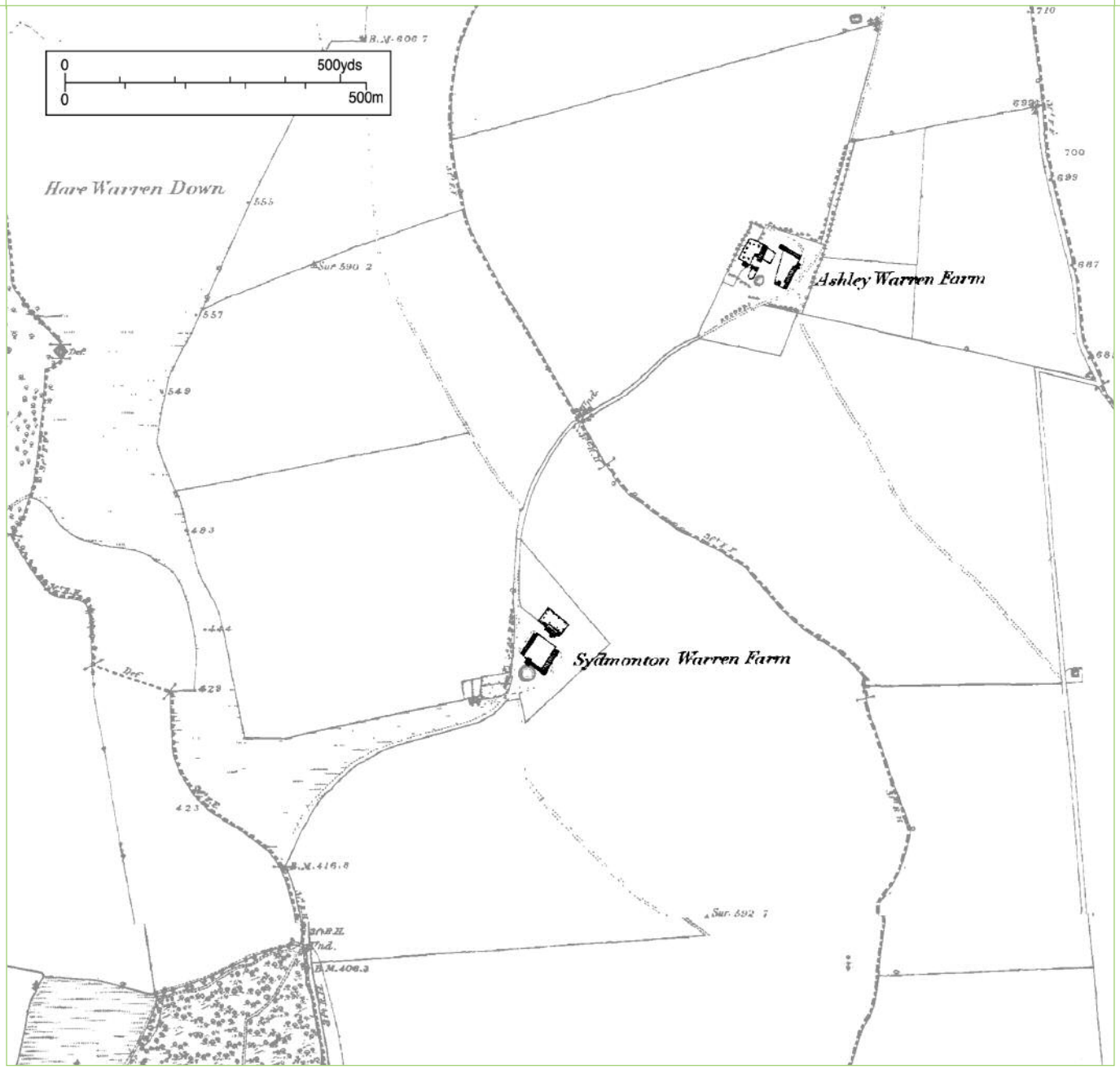
The Dissolution of the Monasteries also provided opportunities for some local families to increase their estates and gave some major political figures the opportunity to amass large land-holdings. These changes were often accompanied by the rebuilding of the farmhouse and the major farm buildings and, in some cases, the depopulation of settlements to leave a single farm. However, the largest ecclesiastical landowners in the Region had been the Archbishop of Canterbury and bishops of Winchester and Chichester whose estates largely remained intact, administered by the Dean and Chapter of the cathedrals.

The 17th and 18th centuries saw rapidly increasing population and in some areas considerable change in agriculture with a greater level of regional specialisation in farming practice. Although the sheep–corn system continued, it was often within these areas that the greatest level of agricultural change occurred. This period saw the continued growth of large estates and farms. Enclosure by agreement and the gradual conversion of downland to arable forced many small farmers into the class of landless labourers, as the loss of access to the sheep-fold over the common arable meant that the smallest farmers were unable to maintain flocks of sufficient size to manure their fields. However, the development and increase in the use of watermeadows, a reduction in the number of sheep in favour of increased arable and the introduction of new crops such as clover and sainfoin are also cited as evidence for 'agricultural revolution' on the chalk areas in the period 1640 to 1750 (Wordie 1984, p.332).

In the 1730s and 1740s there was agricultural depression across southern England due to falling cereal prices. However, the farmers of the Hampshire Downs and the South Downs were fortunate in having the ports of Southampton, Portsmouth and Rye close by and so were able to supply the export market as well as the local and London markets (Wordie 1984, p.335). The farmers of the Berkshire Downs also had access to the London market through the use of navigable rivers and, later, canals. The general response to these difficult times was to increase grain production as corn still produced the best return from the light chalkland soils. Only in some areas, such as the eastern part of the Hampshire Downs adjoining the Wealden Greensand, was an alternative crop, hops, introduced (Wordie 1984, p.336).

During the Napoleonic Wars the extent of arable was again increased in the downland areas to capitalise on the rise in cereal prices. After the war ended prices fell

12 Farmsteads in the landscape: Ecchinswell & Sydmonton, Hampshire (Hampshire Downs)
The historic parishes of Ecchinswell and Sydmonton are long, narrow land units stretching from chalk downland in the south, crossing an area of fertile greensand where the medieval open fields were located with wooded clay lands to the north. The chalk downs remained open until the late 18th century when they were enclosed and new farmsteads created with large fields with regular boundaries – the sinuous boundary dividing the farms is the parish boundary, recorded in an early 10th-century charter. The new Sydmonton Warren Farm was over 700 acres in size and was provided with a large regular courtyard farmstead with brick and flint ranges including a threshing barn. Ashley Warren Farm also had flint and brick farm buildings.
Based on OS 1st Edition 6" map 1853–1890.



back, creating great distress amongst many farmers who had recently invested large sums in bringing extra land into arable. In Hampshire William Cobbett questioned the value of breaking poor downland: 'A man must be mad to…sow wheat upon such a spot. The down itself was poor; what then must it be like as corn land!' (Cobbett quoted in Dodd 1979, p.246). A period of rising grain prices between 1815 and 1836 brought prosperity again to the downland farmers but the repeal of the Corn Laws, allowing increasing imports of cheap grain, again pushed down grain prices. Lowering grain prices and a series of poor harvests combined to bring depression on much of the nation's agriculture, especially those areas where arable had been the mainstay. Some farmers looked to other farming methods, such as stock rearing or dairying, whilst others concentrated their efforts on increasing their corn production, this time with the use of artificial fertilisers.

4.2.3 North Downs (JCA 119)

The North Downs has small areas of fertile brickearth soils to the east, but otherwise has a greater covering of clay with flints, which supported large areas of woodland and was difficult to farm. Commentators of the 19th century described the North Downs in wholly negative terms: 'a miserable and wretched country'; 'the face of

rustic poverty throughout'; 'a wild and dreary country' (Hasted quoted in Everitt, 1986). In common with the South Downs and Hampshire Downs farm sizes were generally large, focused on arable on the lower slopes and sheep grazing on the downland. Areas of downland were broken to increase the amount of arable, but the greater levels of woodland meant that a smaller proportion of the higher downs were converted to arable than in the Hampshire Downs.

4.2.4 Chilterns (JCA 11)

The Chilterns are also sometimes labelled as a sheep–corn area but the farming of this locality differs markedly from that of other chalk down areas in having smaller-scale and more ancient patterns of enclosure and farms. The clay capping the chalk meant that the area was heavily wooded and pig keeping was a speciality in the beech forests (Thirsk 1967, p.70). There was an emphasis on timber growing, especially in the south-west where coppice industries were important. There was more arable in the south-west part of the Chilterns than the north-east part. This difference may be explained by the reduction in woodland in the south-west from around one half to one third of the area between 1600 and 1800 (Hepple & Doggett 1994, p.181) whilst in the north-east the wheat acreage declined in the period 1640 to 1750 to be replaced by fodder crops enabling heavier stocking. This north-east/south-west split may be due to the easier access to the Thames and London enjoyed by the latter area. The north-east had no waterway to the capital and so concentrated on fattening stock that could be driven to market (Wordie 1987, pp.326–8).

4.2.5 South Coast Plain and South Hampshire Lowlands (JCAs 126 and 128)

Along the south coast of Hampshire and Sussex areas of brick earth provided excellent wheat lands, the farmers finding a convenient market at the royal naval dockyard at Portsmouth as well as the growing urban populations of Portsmouth and Southampton. These growing towns also stimulated market gardening and fatstock farming, especially from the mid-18th century. In return, the fertility of the area was boosted by the application of town refuse (Dodd 1979, p.250). Market gardening developed, serving these markets and, with the arrival of the railways, London. By the 19th century large arable fields were characteristic of the South Coast Plain, smaller-scale and more ancient patterns of enclosure being more typical of the South Hampshire Lowlands. The coastal marshes also provided grazing land for cattle. Although the South Coast Plain offered some of the best soils of the country, their proximity to the south coast conurbations has resulted in their large-scale loss to development and, in many cases, the total loss of farmsteads.

4.2.6 North Kent Plain (JCA 113)

The North Kent Plain was also a highly productive corn-producing area that has been densely settled from the Roman period at least; even in the 1st Century BC Caesar had described the large arable fields interspersed with woodland of this area. Large parts of the area were owned by the Church in the medieval period and the cathedrals of Canterbury and Rochester retained much of this land after the dissolution of the monasteries. The area experienced only minor contraction in the extent of arable in the 15th century (Miller 1991, p.132) when many other arable areas saw a shift to pastoral farming. It is probable that the perceived wealth of the Kentish yeoman farmer was largely derived from this area (Everitt 1977, p.5). There were also large brewing and malting industries established in the area by the 15th century (Miller 1991, p.132–4). By the end of the 19th century, much of the marshland that had been used for grazing dairy cattle and fatstock since at least the 16th century (Thirsk 1984, p.60) had been drained for arable cropping. During the Napoleonic Wars and later many hedgerows on Thanet and elsewhere in the area were grubbed up to increase arable production, leaving large fields.

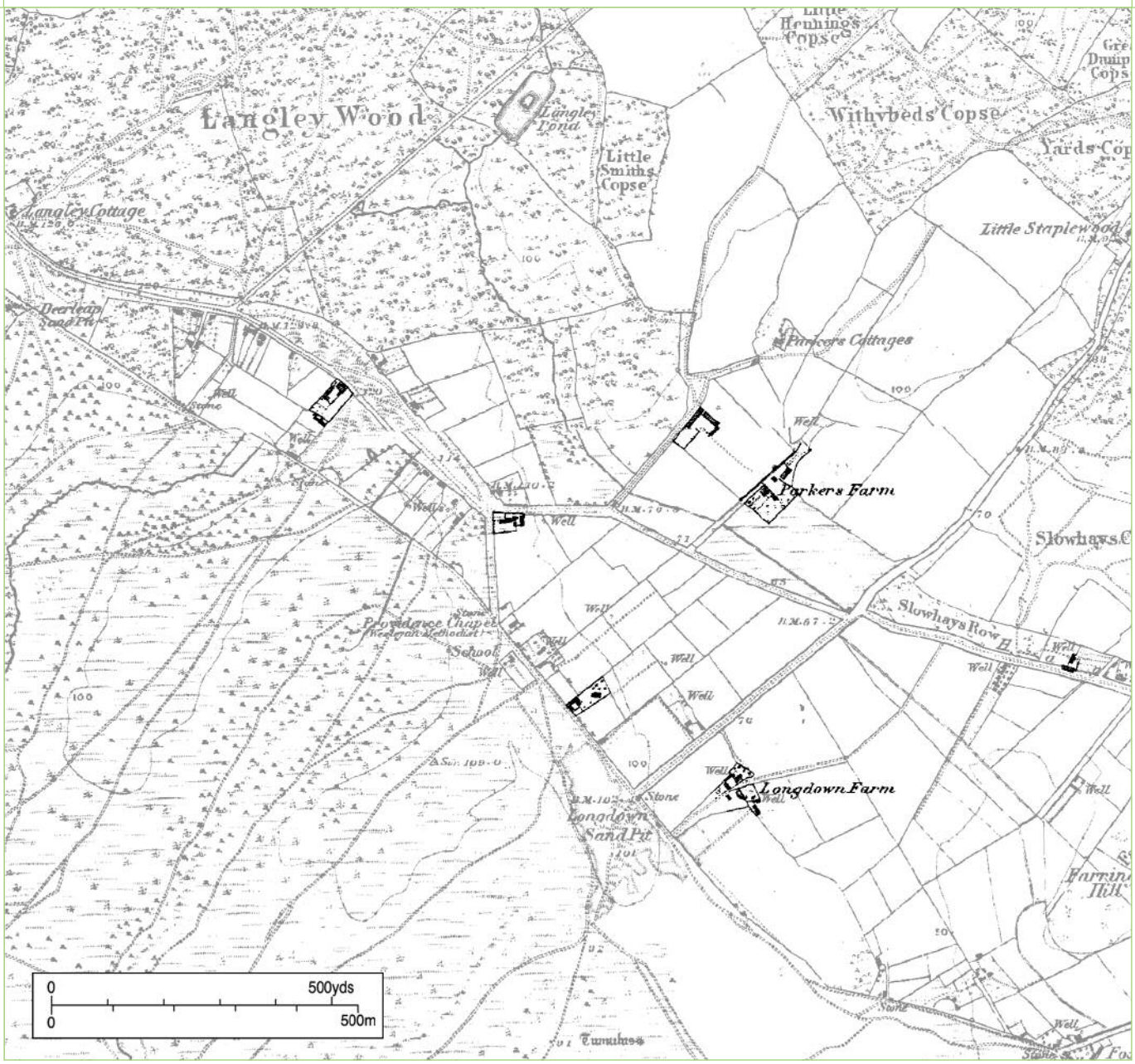
Fruit growing was also a major element in the agriculture of this area from the 13th century, increasing from the 17th century with the establishment of larger orchards to supply the London market. The availability of water transport along the coast to London gave it a distinct advantage over other fruit-growing areas such as mid-Kent (Wooldridge & Goldring 1953, p.237). Market gardening became characteristic of Thanet from the 17th century, where the exposure to wind limits fruit growing, and in the area around Sandwich.

4.2.7 The New Forest (JCA 131) (Figure 13)

The heart of the New Forest is mainly barren heath with soils often too poor even for forest. Within and around the heath smallholders practised a wood–pasture economy, sometimes with as little as one acre of enclosed land. Through the pasturing of pigs on beech mast, the keeping of a few milk cows and the breeding of horses the New Forest commoner managed to earn a living from a relatively inhospitable landscape for agriculture. Small rectilinear enclosures are characteristic of much of this area, dating from the medieval period.

The southern coastal fringe comprises areas of relatively productive soils. The foundation of the Cistercian monastery at Beaulieu suggests the area was thinly populated in the 13th century. The monks of Beaulieu developed a large estate including a number of grange farms, at least some of which were provided with large barns indicating that arable accompanied sheep farming. After the Dissolution much of the coastal fringe remained in the hands of large estates. The result is a

13 Farmsteads in the landscape: New Forest, Hampshire (New Forest)
The poor soils of the heathland of the New Forest dictated a largely pastoral farming economy with commoning, the grazing of animals on the heathland being a important characteristic of the area. Commoners often had very small enclosed holdings – sometimes as little as one acre – and required few farm buildings. Any farm buildings were likely to be small and poorly built. Consequently there are relatively few historic farm buildings associated with the holdings of commoners and these farmsteads are difficult to identify from historic mapping. Encroachment onto the Forest creating small enclosures is recorded from the 13th century. Most of these new enclosures probably occurred around the fringes of the open heath and created irregular fields such as those in the north-west part of the area. Further episodes of enclosure in the 19th century produced the regular blocks of small fields and in some cases resulted in the creation of new farmsteads that – as seen here – were provided with small, brick-built farmsteads occasionally having a regular L- or U-plan. *Based on OS 1st Edition 6" map 1853–1890.*



landscape of relatively large fields – mostly enclosed by the 18th century – and farmsteads, including a number of model and planned farmsteads. On the northern edge of this area, approaching the New Forest heaths, farms became increasingly small and were often associated with commoning. As with the holdings of commoners within the New Forest heathlands, some of these farms had only a few acres of enclosed land, relying on the Forest to feed the stock through most of the year.

Between the New Forest heaths to the east and the Dorset Heaths to the west (JCA 134, see South West) is another area that was fertile, supporting both arable and pastoral farming. The flood plain of the river Avon is between one and two miles in width, with deep alluvial soils. The upper part of the valley within the South East Region adjoins the chalk downland of the Dorset Downs and Cranborne Chase, a small part of which lies within the Region.

4.2.8 **Coastal Marshes – Pevensey Levels, Romney Marshes and Greater Thames Estuary** (JCAs 124, 123 and 81)

Around the coast of the Region there are several

extensive areas of marsh. In the Romney Marshes and the Pevensey Levels, natural coastal change and reclamation from the sea – underway since at least the 8th century – led to the creation of a low-lying area that was utilised for grazing and crops. Small farms and villages were located next to trackways that followed the slightly higher gravel ridges, and fields – predominantly irregular in shape – were divided by artificial drainage systems. This process of piecemeal enclosure was known as 'inning'. Flooding in the 13th and 14th centuries resulted in the shrinkage and abandonment of some settlements in the marshes, leaving the now isolated churches that are a characteristic feature of the marshland landscape, and creating a greater emphasis on grazing. Whilst communities living in the marshes farmed parts of the area, much was farmed from communities beyond the edges of the marsh (Everitt 1986, pp.58–61) and the relationships between the marsh and distant settlements persisted until the early 19th century.

These flat, open areas provided rich grazing land, particularly for sheep, and it was considered that there were more sheep per acre on the Romney Marshes than anywhere else in England. Cattle, brought in from surrounding areas, were also fattened on the marshes (Boys 1805, p.169). Even during the Napoleonic Wars, when high grain prices encouraged downland farmers to increase their arable at the expense of grazing, there appears to have been little increase in ploughland in the marshes (Everitt 1986, p.61). The agriculture of the area was also supplemented by the rich coastal resources available.

The marshlands of the Thames followed a broadly similar path of development, some of the area being left open for grazing sheep and cattle and other parts being subject to drainage and enclosure in the 18th and 19th centuries.

4.2.9 Thames Valley and Basin

This area of varied soils and farming practice includes Northern Thames Basin (JCA 111, for which see East of England Region), Inner London (JCA 112), Thames Basin Lowlands (JCA 114), Thames Valley (JCA 115) and Thames Basin Heaths (JCA 129).

Although of a markedly different character in terms of landscape to the chalklands to the north, west and south, considerable parts of the Thames Basin Heaths also supported a sheep–corn system of agriculture although there was also a greater level of fattening and dairying than found on the chalk, especially along the Kennet Valley. In eastern parts of Berkshire sheep were important, though they were kept more for lambs and mutton to supply the London market than for their wool. Along the south Berkshire and north Hampshire border (Thames Basin Heaths) there are large areas of hungry, sandy soils, only providing rough grazing, broken by small areas of better soils in the Loddon valley and Foundry Brook that supported arable farming. Even in these areas the quality of the soils was variable (Wordie 1987, p.340). Large parks and estates developed on the poor, heathy soils.

Elsewhere – especially in the Thames Basin Lowlands, a narrow band running between Croydon in the east and Aldershot in the west – there were areas of clay soils which supported predominantly pastoral farming, with marginally better soils that could support arable production. The clay soils also had significant areas of woodland. There are some areas of 18th- and 19th-century enclosure, but the predominant pattern of small and irregular fields results from the clearance, or assarting, of woodland, a process generally complete by the 14th century. In these areas, where farms were smaller and, generally, a less rigid manorial system existed, farmers employed a wood–pasture economy similar to that of the New Forest, and often had involvement in other industries such as coppicing or brick making. By the 17th century, there were also areas of substantial arable production.

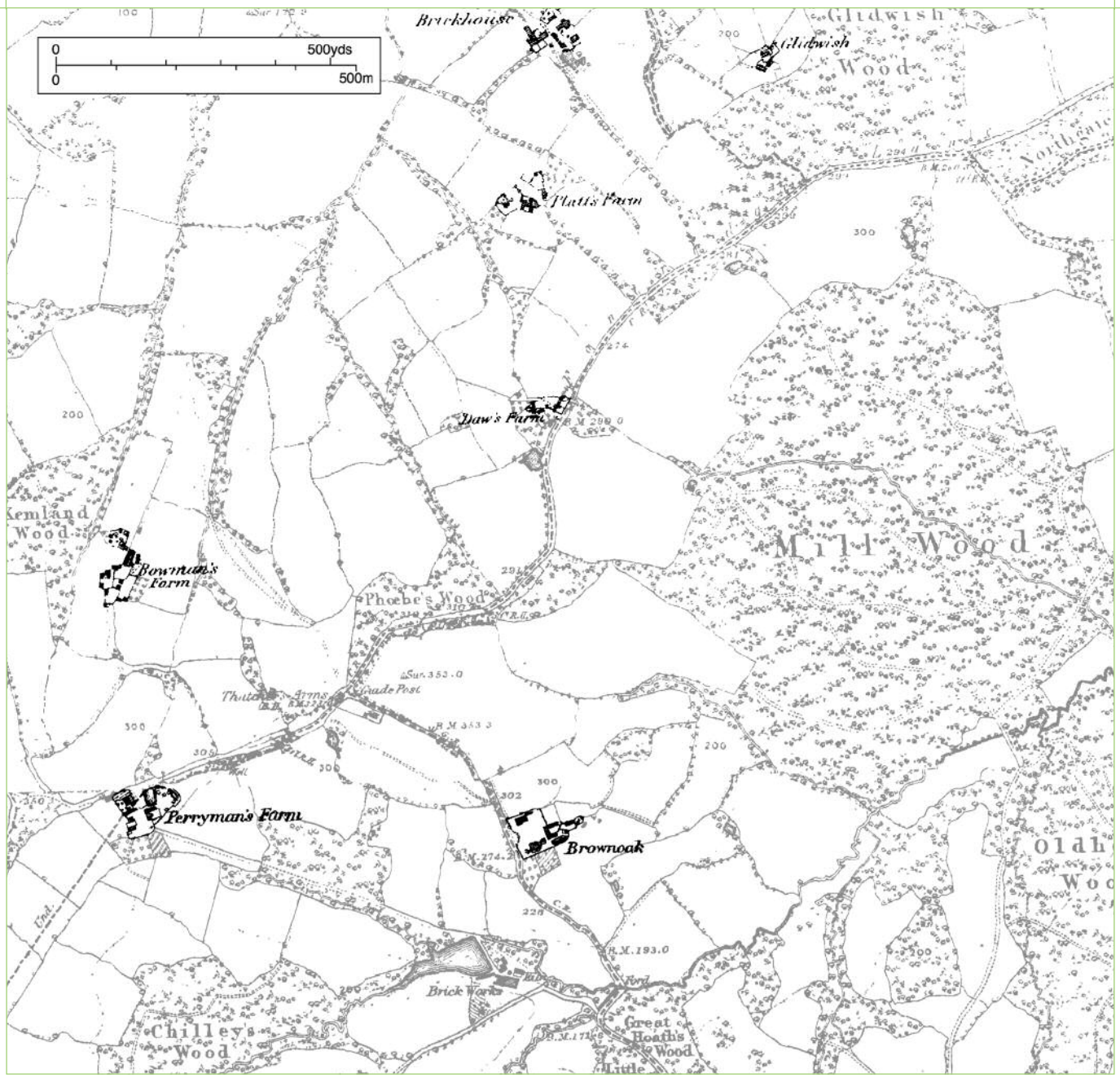
The Thames Valley was very well placed for the export of corn to London. Sheep–corn systems of agriculture developed on good soils in the eastern parts of Berkshire, though sheep were kept more for lambs and mutton to supply the London market than for their wool. Dairying and by the mid-19th century the supply of liquid milk to London developed on some areas of heavier soils. South of the Chilterns, the area of Burnham Beeches was suitable for little but forestry, but at the southern edge of Buckinghamshire there was a fertile area where market gardening flourished (Wordie 1987, pp.341–2).

4.2.10 The Weald (Figure 14)

The Weald is formed by the central High Weald (JCA 122) with its lighter soils on sandstone, the surrounding Low Weald (JCA 121) with predominantly clay soils, and fringing the northern and western parts of the Low Weald the Wealden Greensand (JCA 120), characterised by heavily wooded hangars on the scarp slopes of East Hampshire and West Sussex and open heath on the relatively flat areas of sandy soil in Surrey.

A striking characteristic of the Weald is the variability of the soils within relatively short distances, a feature noted by both Gilbert White and William Cobbett (Brandon 2003, p.25). The Weald was a heavily forested area used as common pasture by communities, which began to be converted to permanent occupation from the 10th century. From the later 11th century there appears to have been a growth in the number of new farms created

14 Farmsteads in the landscape: Brightling, East Sussex (High Weald)
Settlement in the High Weald is predominantly dispersed with many small, scattered farmsteads that largely developed during the medieval period when the characteristic small, irregular fields were carved out of woodland. In this area the smallest farmsteads could consist of a farmhouse and a timber-framed multi-functional barn, which provided crop storage and animal housing. Often there was no planning in the layout of farmsteads resulting in dispersed plans, larger examples of which sometimes had several detached buildings each with a yard area attached. Regular courtyard plans are relatively uncommon. *Based on OS 1st Edition 6" map 1853–1890.*



out of the woodland. By the late 13th century the Wealden landscape comprised a scattering of economically viable gentry properties intermingled with a mass of small peasant holdings of up to 30 acres – although many new assarts of the period were as small as 3–5 acres – practising subsistence-level farming (Hallam 1988, pp.625–34). During the 14th century there was some depopulation, with holdings abandoned or merged and some farmers accumulating holdings of a reasonable size. Some colonisation of the woodland continued in the 15th and 16th centuries, at which time there was a considerable growth in population (Martin & Martin 1982, pp.8–9; Everitt 1986, p.54).

The result of this gradual clearance of the forest is many small farms with small, irregular, enclosed fields, often with wide field margins and heavily wooded hedges. Research into farmsteads in the Rape of Hastings in the eastern Weald has estimated that, excluding holdings of less than 15 acres, over half of farms were of between 15 and 50 acres and one third were between 50 and 150 acres. Around 10% of farms were over 150 acres but rarely were they larger than 250 acres. Small farms tended to have small fields, typically less than 5 acres in size (Martin & Martin 1982, pp.4, 9).

Up to the 14th century Wealden farming had a greater bias towards arable. The balance between arable and pastoral farming shifted as a result of depopulation in the 14th and 15th centuries when much of the arable became pasture or rough grazing. By the mid-16th century arable was rarely mentioned in surveys although the survival of barns shows that crops were grown. The Port Books of Rye also suggest that the area could grow sufficient for its needs and also export oats. Inflation in food prices in the late 16th and early 17th centuries stimulated an increase in arable to around one third of farmland, but the average Wealden farm had only around 10 acres of arable (Thirsk 1967, p.58; Martin & Martin 1982, p.11). By the mid-19th century there had been an increase in arable land. In the Rape of Hastings between two thirds and three quarters of farmland was classified as arable by 1840, whilst in the Surrey Weald over 90% of the soils on the Bargate outcrop were arable in 1870. By 1939 this figure had dropped to less than 30%. Before the late 18th century most of the arable was devoted to the production of animal feeds (Wooldridge & Goldring 1953, p.235; Martin & Martin 1982, p.13).

Cattle were the most important element of Wealden farming. In the eastern Weald it has been shown that farms of less than 50 acres had between one and 12 head of cattle, and that farms of 50–99 acres typically had 10–32 head of cattle. These animals were primarily fatstock but there was also some dairying, primarily for local use although in the Rother Valley cheese making was clearly a subsidiary enterprise for the market. In areas where the cloth industry was strong, around Tenterden and Marden for example, cheese production appears to have been carried out on a semi-commercial scale at least, with clothiers also dealing in cheese (Thirsk 1967, p.58). Few sheep were bred except for a small number to provide early fat lambs (Boys 1805, p.176; Wooldridge & Goldring 1953, p.234) although sheep-folds are shown in many fields in the Isle of Oxney on 1st Edition Ordnance Survey maps, suggesting that by the mid-19th century sheep were an important feature of the valley. In the Weald oxen continued as draught animals, often worked in teams with horses, into the late 19th century (Bosworth 1909a, p.54).

Accompanying these agricultural enterprises were two other activities of immense importance in the Weald: timber and iron. Timber and firewood were the major exports from Sussex ports in the later 15th century (Miller 1991, p.135) whilst the iron industry, the centre of British iron making in the 16th century, also consumed massive quantities of coppice wood. These industries provided additional employment opportunities for many Wealden farmers, until the decline of the industry towards the end of the 17th century caused by cheaper imports, the rising price of fuel, the successful development of the use of coke by Abraham Darby at Coalbrookdale in Shropshire, and the loss of naval contracts to provide cannon (Brandon 2003, pp.129–40).

The arrival of the railways in the mid-19th century made a significant impact on the agriculture of the Weald, opening up the London market for hops, fruit and poultry (Everitt 1986, p.53; Brandon 2003, pp.226–7). The Weald did not experience agricultural depression to the extent of the downland areas. Fruit and hop growing across the Low Weald and the Wealden Greensand on the northern side of the High Weald insulated these areas from the worst of the depression, whilst poultry rearing and fattening often provided a better income than any other form of farming.

4.2.11 Isle of Wight (JCA 127)

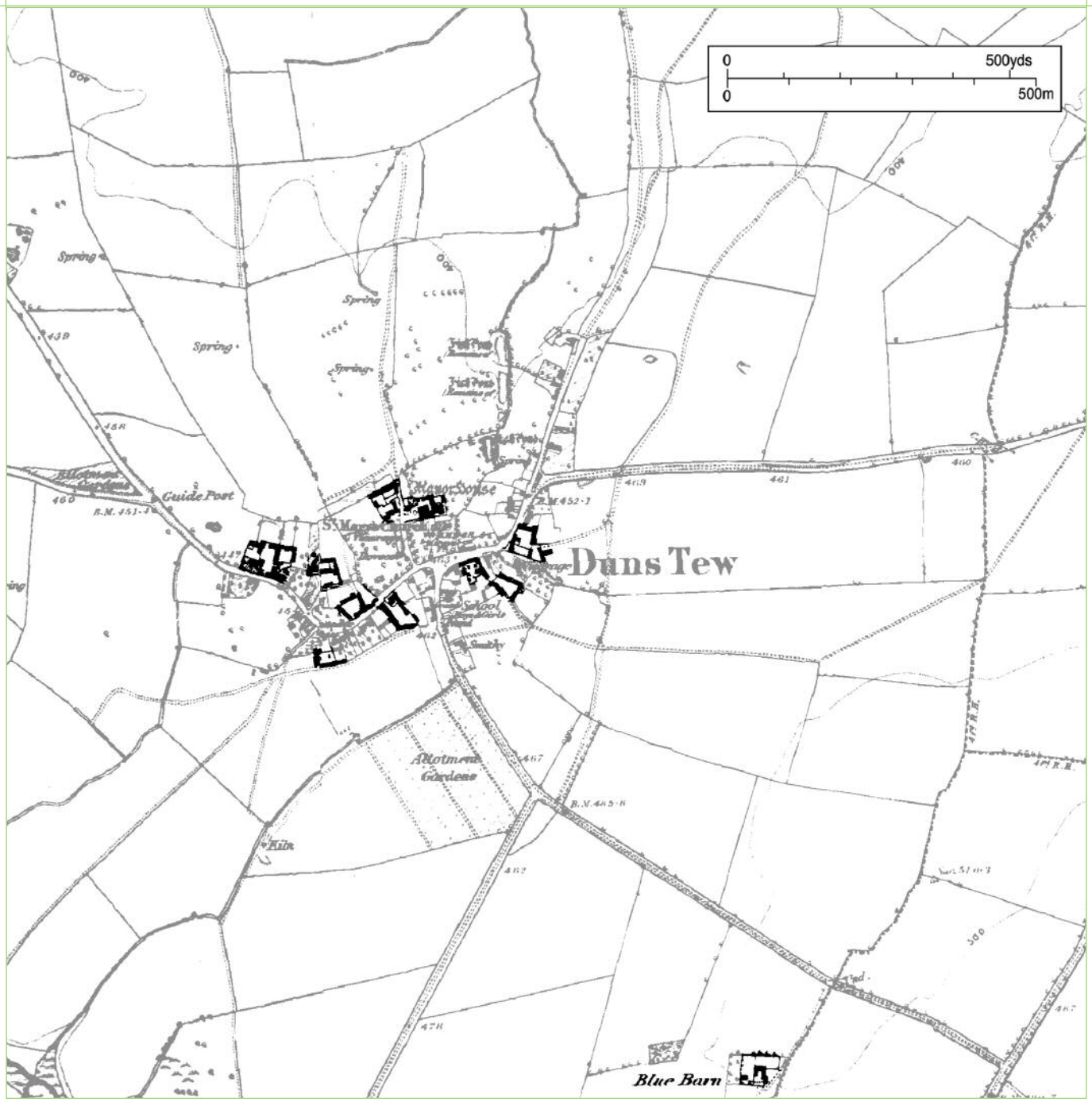
Although a relatively small area, the Isle of Wight could be divided into as many as five agricultural regions, although, historically, there has been disagreement on how to divide the island. By the mid-19th century farm size averaged around 60 acres and most farms were mixed (Dodd 1979, p.251) but the good fertility of the soils encouraged a focus on arable crops, principally wheat. Most of the island was enclosed by the mid-18th century and there was very little common grazing land (Wordie 1987, p.346). Only the downland of the chalk ridge running across the island remained largely unenclosed and these areas carried large flocks of sheep.

4.2.12 Upper Thames Clay Vales and Midvale Ridge (JCAs 108 and 109)

These areas cover the heavy soils of Oxford Clay Vale, the Vale of Aylesbury and the Corallian limestone ridge that runs along the centre of the clay vales. Generally this was an area of mixed farming and common fields working on a three-course system, most of the present fieldscapes – with the exception of areas around settlements and in dry valleys – being the result of 18th- and early 19th-century enclosure. Dairying was a significant element of the farming throughout the vales although it was of particular importance in the western part of the area (Thirsk 1967, p.49; Wordie 1984, pp.323–4). In the Buckinghamshire vales butter for the London market was the primary product (James & Malcolm 1794, p.15).

In contrast to the chalk valleys of Hampshire, there were hardly any watermeadows, the meadows being considered sufficiently rich without watering; in fact, the Vale of Aylesbury was described as one of the best grazing areas of the country (James & Malcolm 1794, pp.15, 44). Suckling was also carried out on an extensive scale although it was declining by the early 19th century (Priest 1810, p.303).

15 Farms in the landscape: Duns Tew, Oxfordshire (Cotswolds)
This north-western part of the Region extends into Roberts and Wrathmell's Central Province where settlement predominantly consists of nucleated villages. Duns Tew is a small village with a cluster of farmsteads, four of which are still working farms, lying close to the junction between clay vales to the north and limestone to the south. All the listed farmhouses and barns date from between the early 18th and 19th centuries, probably reflecting reorganistion of holdings after enclosure of the open fields. It is noteworthy that so many farms remained in the village rather than moving out to their newly enclosed holdings. The only earlier farm building in the village is a 16th-century dovecote at Manor Farm. *Based on OS 1st Edition 6" map 1853–1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024*



4.2.13 Northamptonshire Uplands and The Cotswolds (JCAs 95 and 107) (Figure 15)

The northern tip of Oxfordshire – within the Northamptonshire Uplands character area – was known as the Marlstone Uplands or the Redland District on account of its red loam soils, and was called ' the glory of the county'. It was a fertile area that was densely settled and had many small farms of around 20–30 acres working the open fields from nucleated villages. The widespread survival of ridge and furrow, and of settlement earthworks, bear testament to the replacement from the 14th century of arable farming by sheep pastures. Patterns of enclosure are closely linked to the development of gentry and aristocratic estates, and range from at least the 16th century to the 19th-century enclosure of common fields. Although soil fertility was high, making it an ideal corn-growing area, most crops grown were fodder crops supporting dairying and beef, with some sheep and pigs (Thirsk 1967, p.67). It is considered that this reflects the transport difficulties the area faced in getting its products to market, as there were no navigable rivers.

Therefore, it was easier to get livestock to market at Oxford than it was corn. Wool and cheese, however, had a higher value-to-weight ratio and so land transport was financially viable. Even so, compared to most of the Region, this area retained a peasant economy aimed more at self-sufficiency than supplying the national market until the mid-18th century (Wordie 1984, pp.319–20).

To the south of the Marlstone Uplands – and located within the Cotswolds character area – is the Limestone Uplands, an area that more closely resembles the Gloucestershire Cotswolds. Agriculturally, the area was much more dynamic than the Marlstone Uplands. The area retained some of its open fields but improvements to the systems were made; the two or three arable fields were divided into four or six fields to allow greater flexibility of rotations and to reduce the area of fallow. Additionally the use of leys for producing fodder crops, especially sainfoin, and the consolidation of strips whilst retaining common rights meant that heavier stocking levels were possible. Although common fields persisted, there was also more early enclosure in this area than in the Marlstone Uplands, possibly as there were fewer landowners with larger farms and large estates were conspicuous, so making it easier to arrive at an agreement to enclose than areas where there were many small farmers (Wordie 1984, pp.321–2).

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 can be a development of a linear plan or can represent 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.

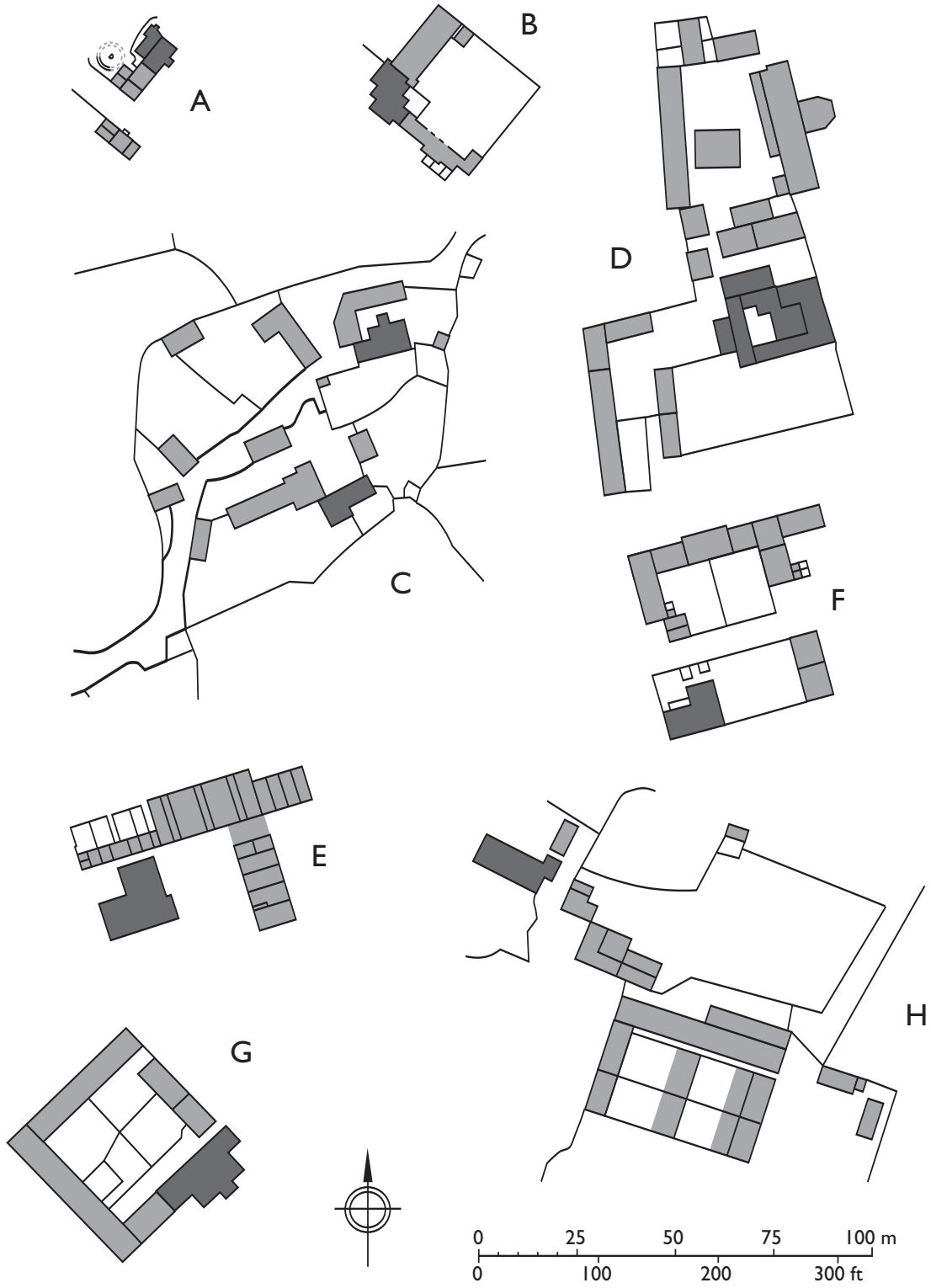
E Regular courtyard L-plan. Two attached ranges form a regular L-shape. The farmhouse is detached from the agricultural buildings.

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

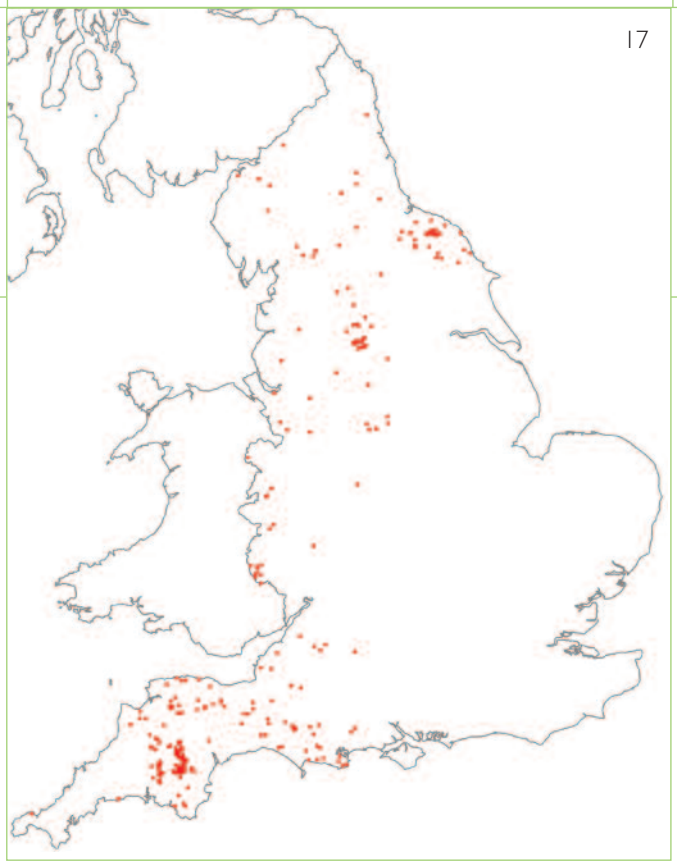
These invariably enclose two sides of a yard, and often represent developments from earlier linear plans, if they have not been constructed in a single phase. L-shapes often evolve from the addition of a barn or byre to an original linear farm, or can represent the partial re-organisation of a dispersed 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 – a proportion 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 South East 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).

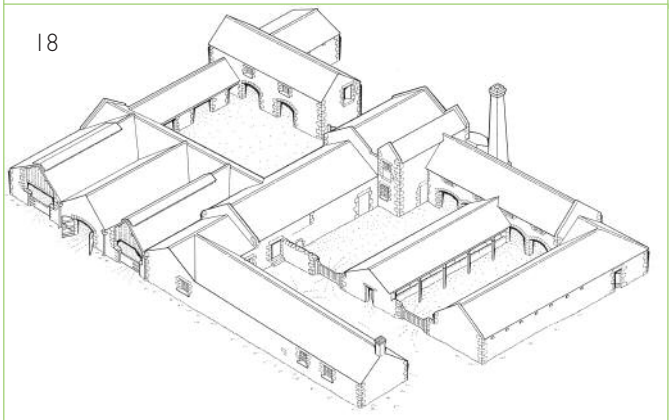
5.2.2 ESTATE POLICY

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 incorporates 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*



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 SOUTH EAST REGION

Sheds for livestock and implements as well as stables are clearly indicated in medieval documents (e.g. Harvey 1970; Page 1996; Page 1999). However, despite the relatively good survival of early buildings – overwhelmingly barns – surviving large medieval farmsteads are rare. One of the few examples is Abbey Farm, Faversham, where two medieval barns and a stable survive. However, there are many smaller farmsteads that retain a house and barn (which often incorporated other functions such as stabling or cattle housing) of 15th- to 17th-century date.

5.3.1 LINEAR, L-PLAN AND PARALLEL PLANS

The longhouse is unknown in the South East Region. Linear plans are found in the Cotswolds and Northamptonshire Uplands areas but are otherwise uncommon. L-plans, with the house fronting the village street and the barn at right angles, are also found dating from the 17th century in these areas. There are some medieval houses with a barn attached in-line with the house but without any internal access from the house to the agricultural part of the range. It may be that these few examples represent what was once a far more common plan form for small farmsteads that have long been removed from agriculture, but there is little evidence in the form of void mortices in the timber-framed gables of houses across the Region to support this.

5.3.2 DISPERSED PLANS

In some areas, such as the Weald, cartographic evidence shows that there was often no attempt at planning or creating a formal yard area. Instead the house and barn (often the only buildings of the farmstead) were set fairly close together but in many instances there is no clear relationship. This unplanned nature of farmsteads in the Weald persisted until the mid-19th century, from which time there is increasing evidence of more formal layouts, usually on estate-owned farms. It is common, however, to find that the earlier barn was retained to form one side of the yard (Martin & Martin 1982, pp.23–4, 30). In other parts of the Region, where small farms with few buildings were usual, such as on the heathland fringes, there is a similar lack of evidence for planning.

Within the Weald larger dispersed plans are found where the farmstead consists of a number of buildings with individual yards, sometimes including small regular L- and U-plan groups, scattered around the farmhouse. Individual building ranged alongside a wide trackway leading to the farm were also commonplace.

5.3.3 LOOSE COURTYARD PLANS

The South East Region has one of the major concentrations of early (pre-1550) buildings and pre-1750 layouts in England. The loose courtyard plan, formed by a collection of detached structures arranged around a yard, usually with the farmhouse located on one side of the yard, is the predominant farmstead type in the Region.

Over time these loose courtyard plans evolved with the alteration and addition of buildings. The earlier barn could be extended or an integral stable opened up to increase barn space, and a porch was often added as grain output increased at the end of the 18th century. A second barn might also be built. A separate cow house and stable block to replace the stable originally in the barn are typical additions. From the 17th century, but increasingly from the 18th and 19th centuries, free-standing granaries could be added to the plan. These individual buildings were sometimes connected by temporary hurdles or brick walls to create yards for the winter sheltering of animals. There are a number of 17th-century gentry farmsteads in Hampshire that have detached buildings to all four sides of the yard.

A common addition to farmsteads across the Region from the later 18th century to the late 19th century was a livestock shed, reflecting the increased awareness of the need to provide accommodation for fatstock. In some areas, such as the Berkshire Downs, these new shelter sheds were intended to house animals whose primary role was to produce manure to maintain soil fertility for cereal production (Barnwell & Giles 1997, p.15–16).

5.3.4 REGULAR COURTYARD PLANS

Although large estates were present in many parts of the Region the South East does not contain high numbers of model farms. New integrated plans are uncommon, individual examples of barns, granaries and cattle housing – for example, on the Dukes' of Norfolk Arundel Estate (Banister 1994) – commonly representing the activities of estates in the Region. There are some important examples of the High Farming ideals made manifest in farm buildings, such as the farmsteads of Prince Albert in Windsor Great Park and at Osborne on the Isle of Wight (Wade Martins 2002, pp.214, 217), the Earl of Radnor's model farm at Coleshill, now in Oxfordshire (Downing, 2001) and the early 19th-century farmsteads at Sheffield Park and Petworth, West Sussex. Where later

planned and model farms were built they were often financed from sources other than agriculture: for example, the Nicholsons in Hampshire, who derived their wealth from gin, or Lord Portal at Laverstoke in Hampshire whose family's wealth was based on paper making and bank-note printing. Across Hampshire the smaller U- and L-plan regular courtyards are more typical than the larger E-plan farmsteads (Edwards, forthcoming).

In some areas, for example East Hampshire, many farmsteads were provided with L-plan yards providing enclosed cow houses and fodder storage (Edwards 2005, p.75). These new yards often replaced earlier buildings and were sometimes accompanied by an earlier, often late medieval, farmhouse.

5.3.5 ROW PLANS

Work in progress on mapping farmstead plans in the High Weald has identified farmsteads which have plans that consist of a long row or rows of buildings, usually lying parallel to each other. These row plans often seem to incorporate buildings of varying function and may have a number of yards attached to one or both sides.

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.

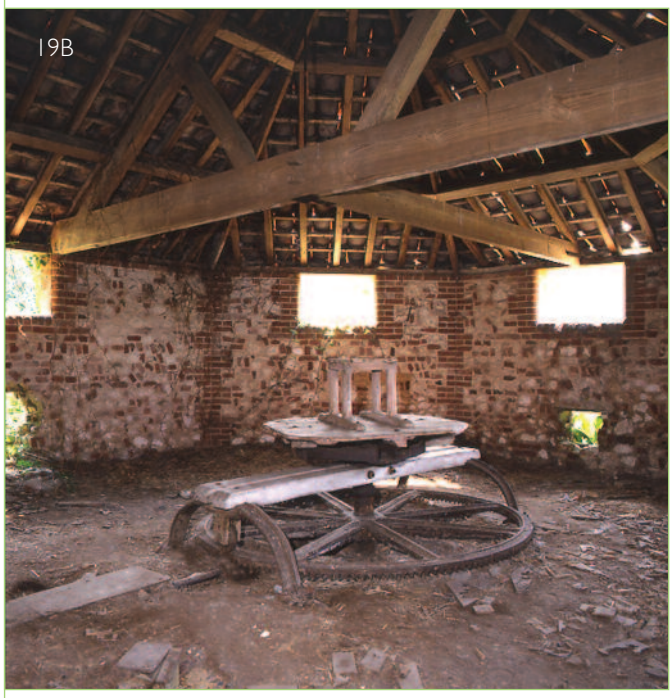
6.1.1.1 Plan form

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

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

doors enabling the barn to house functions such as clipping sheep when empty, to lofts and stabling,

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 SOUTH EAST (Figure 20)

6.1.2.1 Threshing barns and Aisled barns

The South East Region is, together with the southern part of the East of England Region and Devon in the South West Region, the area where early (pre-1550) barns are concentrated. The evidence from these buildings shows that they were often large buildings (a major factor in their survival as they were able to continue to serve their purpose) and that they were being built in the 14th and 15th centuries when many other regions were experiencing a contraction in arable (Miller 1991, pp.267–8, 277). Many farmsteads across the Region were dominated by one or two barns, whilst some large farms were provided with three barns, even by the 14th and 15th centuries (Page 1996; Page 1999). At least one Berkshire farm had as many as five barns (Barnwell & Giles 1997, p.22). It is not uncommon to find two barns of different dates interconnected and forming an L-plan.

The barns of the chalk downlands could be ten or eleven bays in length with two threshing floors, whilst barns of three bays were most numerous in the Weald

20 Barns and Crop Storage in the South East Region

A An aisled barn attached in-line to the farmhouse. Linear plan farmsteads are unusual in the South East Region. (High Weald)

B Although aisled barns are highly characteristic of the Region, most of the earliest barns are unaisled, such as this 14th-century barn in West Sussex, partly roofed in Horsham stone slate. (Low Weald)

C A pair of linked aisled timber-framed and thatched barns located in a village set in a chalk stream valley in Hampshire. The size of these barns indicates the importance of corn in this area. (Hampshire Downs)

D Many barns in the region dating from between 1500 and 1700 have evidence that they were once multi-functional buildings providing not only threshing and crop-storage space but also included animal housing and sometimes included floored bays serving as hay lofts or granaries. (Thames Basin Heaths)

E Typical of many Cotswold farmsteads is this five-bay barn built in limestone with a central porch and coped gables. Built along one side are animal sheds, probably cow houses. (Cotswolds)

F A five-bay unaisled barn built in chalk with an attached building under the same roof to the left. (Isle of Wight)

G A 19th-century staddle barn. This example has staddle stones along one side only – the side facing the yard has a conventional plinth wall. (Hampshire Downs) *All © Bob Edwards except* G © *Marion Brinton*


20D


20A


20E


20B


20F


20C


20G

(Martin & Martin 1982, p.47). Barns of five or six bays with a central threshing floor were more typical across the whole of the Region. Most barns had large, opposed floors to the threshing bay, commonly believed to enable the wagons to drive through the barn when unloading the harvest. Some surviving pre-1600 barns suggest that this plan was not always adopted, the alternative being a single doorway for winnowing opposite the main double doors. In the Sussex High Weald it has been noted that even where there are double doors to both sides, there are many barns that have a large drop in ground level preventing the through passage of vehicles (Martin & Martin 1982, pp.53–4). Another feature often considered typical is the porch over the main entrance. Medieval manorial records of the bishops of Winchester show that porches were common features on their Hampshire barns but study of some smaller barns in the county suggests that porches were often later additions. This observation is also borne out by survey work in the Sussex High Weald where few pre-18th-century barns were originally provided with a porch but porches were commonly added in the 18th century (Martin & Martin 1982, p.55). Across most of the southern counties of the Region barns were usually timber framed although in the downlands and coastal plain of West Sussex solid walling was common, using flint or cobbles collected from the coast. In the clay areas brick was widely, although not exclusively, used from the 18th century and on the chalk downland brick and flint became the common building materials for barns from the late 18th century.

Aisled barns, dating from the medieval period to the early 19th century, are often considered to be a characteristic feature of the Region (Brunskill, 1987, p.168). They were particularly concentrated in northern Hampshire, Berkshire and Kent, where all the earliest barns are of aisled construction (Rigold 1966, p.28) (Figure 3). However, in other parts of the Region unaisled barns were more common; for example, studies in the Rape of Hastings in the High Weald of eastern Sussex have shown that only approximately 25% of recorded barns were aisled and that the aisled barns were concentrated along the coastal fringe, whereas unaisled barns were typical of the northern part of the Rape (Martin & Martin 1982, p.50). Cruck barns are rarely found in the Region. The better survival or popularity of the aisled and box-framed barns over the cruck barn may have been due to the increased capacity for grain storage allowed by these forms of construction. In the arable areas of Oxfordshire and Buckinghamshire (concentrated in the Chilterns and the eastern part of the Upper Thames Clay Vales) some barns were constructed so as to enable corn to be moved about at a high level in the barn (Clark 2004) a technique not seen elsewhere in these counties.

Increased arable production from the 17th century to the mid-18th century, a specifically regional response to increases in food prices and population, required greater capacity for the processing and storage of corn crops in most parts. This period saw substantial building of new barns and the modification of existing barns through the addition of bays and the removal of earlier partitions and lofts. From studies of surviving barns it appears that in some areas, such as the valleys draining the Hampshire Downs like the River Test, the majority of medieval barns were replaced at around this time. This large-scale investment in new buildings indicates the wealth being generated by the sheep and corn farmers of the chalk downlands at that time and may also be associated with enclosure by agreement of the common fields and downland. Barns in areas of the chalk downlands enclosed from the later 18th century are either large, usually unaisled, timber framed buildings with slate half-hipped roofs, or brick and flint combination barns. .In the Weald large barns were also being built in the 18th century, usually with gabled roofs or hiplets rather than fully hipped roofs, possibly to increase the storage capacity (Martin & Martin 1982, p.45). In the Vale of Aylesbury (east of Upper Thames Clay Vales) timber-framed barns with either brick or rendered panels or weatherboarded walls predominate. The use of limestone in north Oxfordshire and parts of Buckinghamshire gives the predominantly five-bay barns the characteristics of barns of the Gloucestershire Cotswolds (South West Region).

6.1.2.2 Combination barns

There is evidence from some of the barns of the Region, especially in pastoral areas, that they originally served as combination barns. In Hampshire structural evidence indicates that some of the earlier barns were built as multi-functional buildings, possibly accommodating a stable or cow shed in an end bay that was divided from the remainder of the barn and sometimes lofted. Documentary evidence also records the partitioning of barns; for example, at Ashmansworth in Hampshire, a partition was built in the barn between the corn and the seed in the early 14th century (Page 1996, p.130). At Morton in Buckinghamshire, a new barn built on a Winchester estate in 1409–10 was also provided with an annexe at one end (Page 1997, p.149). A study of barns in the eastern part of the High Weald has also shown that up to 75% of pre-1750 barns were combination buildings, housing both the crop and stock with one or two bays divided off and often lofted (Martin & Martin 1982, p.59).

6.1.2.3 Staddle barns

An unusual type of barn that appears to have developed in the chalk downland areas of Hampshire and Berkshire (and also Wiltshire in the South West Region) is the staddle barn, which has an unaisled timber frame raised on staddles as for a granary. Staddle

21A 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) © *English Heritage / Michael Williams*
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) © *Bob Edwards*

barns range in size from two to five bays, standing on as many as 64 staddle stones, and most appear to date from the mid- to late 18th century. This barn type was probably an attempt to solve problems of damp and vermin (particularly after the introduction of the brown rat in the early 18th century) but the difficulties of access made it inconvenient and it was not widely adopted (Barnwell & Giles 1997, pp.22–3; McCann 1996, pp. 16-17).

6.1.2.4 Mechanisation

The use of fixed mechanisation for threshing in the South East Region was not widespread, with most parts of the Region being slow to adopt mechanised processing and largely omitting the phase of fixed-power altogether. Relatively cheap and plentiful labour, and possibly the effect of popular resistance to new technology (for example, the Swing Riots in the late 1820s), meant that hand threshing continued well into the later 19th century. In the Berkshire Downs a small number of barns are known to have had horse-engine houses built against the barn but few have survived (Barnwell & Giles 1997, p.25). After 1850 where mechanisation was used it was more often in the form of portable threshing machines powered by horses or mobile steam engines. The use of fixed steam power was limited to a small number of model and planned estate farms, such as the home farm of Laverstoke Park, Hampshire. In parts of the East Sussex Low Weald, where the emphasis was on cattle, some barns incorporate late 19th-century fodder mills powered by horse engines (Caffyn 1983, p.157).

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 21). Window openings were typically small, and, with ventilation being the main objective, the openings were generally either louvers, sliding vents or grilles.

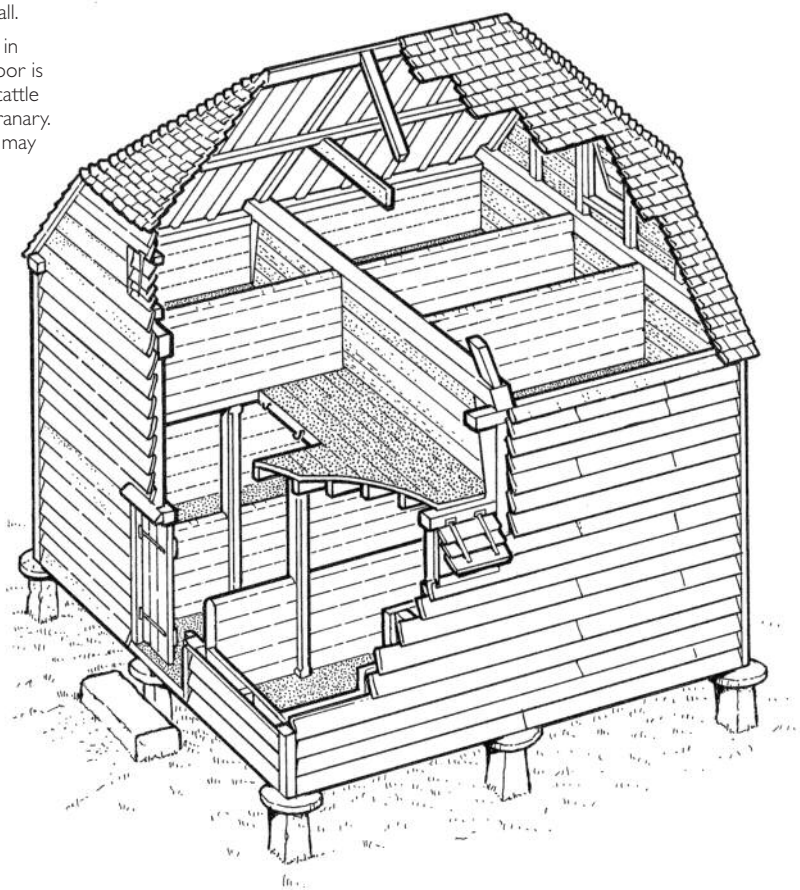
Grain was typically accommodated in:

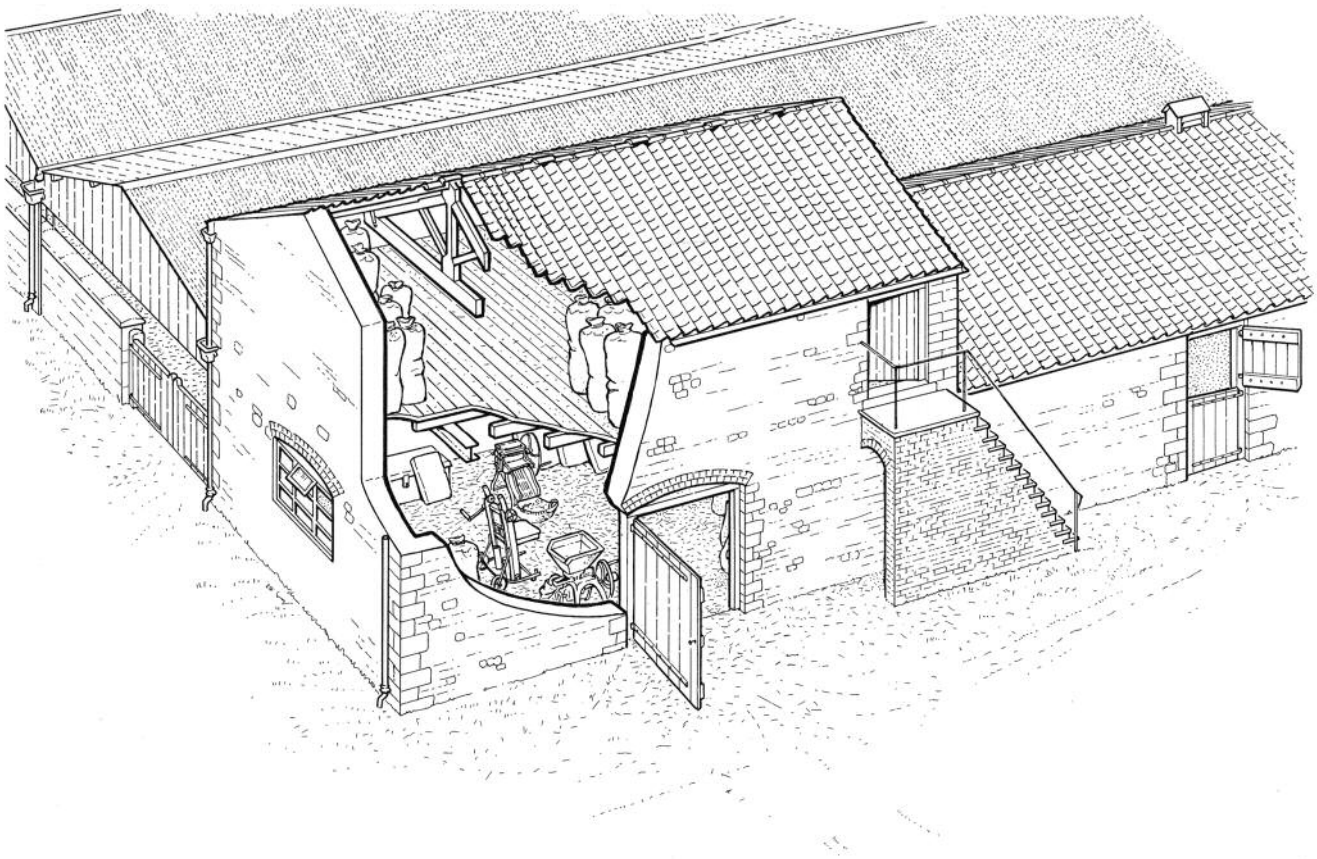
- The lofts of farmhouses, a practice common before 1750.
- Small, square or rectangular structures raised above ground level on mushroom-shaped staddle stones or brick arches and accessed by moveable wooden steps. Internally, they may have been fitted with wooden partitions to create grain bins. They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

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.





23 Granaries in the South East Region
A Free-standing timber-framed granary on staddle stones. This example is of two storeys with fitted grain bins but smaller, single-storey granaries that probably held seed corn are common. Such granaries are characteristic of the south-east of England and southern East Anglia where the timber framing is typically weatherboarded although examples are found as far west as Cornwall where the framing is often slate hung. (Thames Basin Heaths)
B Cart shed and granary typical of the later 19th century. (Thames Basin Heaths) © *Bob Edwards*

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 22).

- The upper floors of farm buildings, most commonly barns – observable from the 14th century (Le Patourel in Miller 1991, p.872) – and from the 17th century in the South East and East Anglia, much later further north and west, above cart sheds (see 6.3.1). Exteriors are usually marked by shuttered windows for ventilation. The side walls are sometimes weatherboarded, even in regions where weatherboarding is unusual, again to help ventilation. Examples date from the 17th century in arable areas. A separate external stair often gave access to the granary door (Figure 25). 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 SOUTH EAST (Figure 23)

Many granaries are found located over cart sheds or other buildings but the free-standing timber-framed granary set on staddle stones (or cast-iron staddles in some later 19th-century examples) is more commonly encountered in the South East Region than in any other part of the country. In areas such as Hampshire, the staddle stone granary was predominant over other forms of granary building. These buildings are usually weatherboarded but some, usually earlier examples, have brick panels in the timber framing. In addition to timber-framed granaries, there are also examples of brick granaries built on arches rather than staddle stones. The free-standing granaries of the Region range in size from relatively small single-storey buildings that may have held no more than the seed corn, to large two-storey buildings capable of holding considerable amounts of grain.

The majority of granary buildings date from the 18th and early 19th centuries although there are some that date from the 17th century, but documentary evidence suggests that the free-standing granary was often found in farmsteads of large estates at least. In 1301–2 accounts record that boards and timber were supplied for 'making the walls of the granary nearly anew' on the Bishop of Winchester's manor of Bishop's Sutton (Page 1996, p.307). Other references suggest, however, that these early

24 Cart sheds in the South East
A A three-bay brick-built cart shed located outside the entrance to the farmyard. (Thames Basin Heaths)
B Cart sheds forming part of a regular courtyard range. The cart sheds face outwards to the road passing the farmyard. (Cotswolds)
C Cart shed with a gable entry and granary above built in malmstone, a relatively soft sandstone. (Wealden Greensand)
D A single-storey brick cart shed of mid-19th-century date. One bay has been divided off and has doors to provide a secure storage area for smaller, easily portable implements. This cart shed stands almost outside of the farmstead, adjacent to the passing road. (Salisbury Plain and West Wiltshire Downs)
© *Bob Edwards*

24A


24B

24C


24D

granaries were built on plinth walls rather than being set on staddles. Brick-built granaries supported on arches are occasionally found in the South East although they are more commonly encountered in the South West Region.

Detached granaries are not found in all parts of the Region. In the Weald there are few examples (Martin & Martin 1982, p.162) as it is probable that the relatively small amounts of grain crops produced were either stored in the house or in a lofted bay of the barn.

Other than when forming part of a combination barn, granaries began to be more commonly incorporated into other buildings, particularly above cart sheds or forming part of combination ranges from the early to mid-19th century.

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

25 Distribution of listed hop kilns or oast houses in England
The distribution map of listed hop kilns or oast houses clearly demonstrates the importance of these buildings to the character of the south part of the South East Region where they are concentrated in Kent and East Sussex with a small cluster of oast houses in East Hampshire.

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 SOUTH EAST (Figure 24)

There is documentary evidence for the existence of cart sheds or wagon houses from the medieval period but few, if any, such early examples are known to survive. Documentary evidence indicates that on occasion the cart shed and the stables for the cart horses could be combined: at East Meon in Hampshire the bailiff paid for, 'building anew 1 building for stabling the cart horses and carts' (Page 1996, p.293). In East Sussex in the 16th century a cart shed was combined with a granary above (Caffyn 1983, p.165).

The South East and East of England Regions probably contain the greatest number of cart sheds, including some of the earliest surviving examples in the country. The importance of arable over much of the Region meant that most farms would have required ploughs, harrows, carts and wagons and so cart sheds are common to most farms, the earliest generally dating from the 17th century. However, in areas where arable was of lesser importance, such as the Weald of East Sussex, cart sheds tend to be found only on larger farms (Caffyn 1983, p.165).

They are typically single-storey timber-framed buildings with one open side, and range from two to six or seven bays in length. Structurally they are often identical to the open-fronted cattle sheds that were built as additions to many farms in the later 18th and 19th centuries. It is usually the location of the cart shed, either facing out of the yard or located near a track into the farmyard, which identifies the original function of the building.

6.4 OAST HOUSES

6.4.1 NATIONAL OVERVIEW (Figure 25)

Although hops had been used in beer making in the medieval period, the commercial cultivation of hops did not begin until the 16th century. Until a decline in the market for hops in the late 19th century the crop was grown in 38 English counties (Walton & Walton 1998, p.4) but now Herefordshire and Kent are recognised as the primary hop-growing areas of the country.

Mature hops have to be dried after picking and where hops were grown in any quantity this was carried out in a similar fashion to the drying of barley in a malt house. Indeed, it may be that malt houses could also have served as hop kilns for the few weeks of the year when the crop was harvested. The hops were laid out on a horse-hair mat on a slatted floor and turned periodically as heat from a kiln below passed through them. After drying, the hops were packed in readiness for transportation to a brewery. The alternative to drying hops in a kiln was to dry them slowly in the loft of the house and this may have been the most common way of processing the crop across much of the country where hops were grown on a small scale.

The oast house, characteristic of Herefordshire, Kent and the Wealden parts of Sussex and Hampshire, was a building that was used for only a few weeks of the year and so represented a considerable investment for most farmers. Hop growing was widely considered to be a high-risk venture, with many agricultural commentators advising against involvement in the practice (Jones & Bell, 1989). The earliest oast houses were small buildings typically around 20 feet x 10 feet comprising three rooms. The centre room contained the kiln, over which lay the drying floor which also served as the cooling floor, limiting the efficiency of the building. The other rooms provided storage for green hops and dried hops.

During the 18th century efforts were made to improve the flow of air through the drying floor. This was

26 Oast houses in the South East
Oast houses are a highly characteristic building of the High Weald, the Low Weald and the Wealden Greensand. Occasionally early oasts constructed within older barns survive but most have brick-built square or circular kilns, sometimes with both forms on the same range. In Hampshire flint and brick and the local malmstone were also used in the construction of oast houses. (A, B and D High Weald; C Wealden Greensand in East Hampshire)
A © *Jeremy Lake;* B–D © *Bob Edwards*

26A

26C

26B

26D

achieved through the construction of inverted funnels of timber and plaster in the roof space leading to a vent (Martin & Martin 1982, p.143). At this time larger oast houses were built, typically with a kiln measuring between 12 and 18 feet square with a rectangular stowage attached where the hops could cool on an upper floor before being pressed into 'pockets' and stored on the ground floor. The provision of a separate drying floor increased the efficiency and production capacity.

The circular kiln with its conical roof was a development of the early 19th century. It was believed that circular oasts were more efficient but this was eventually shown not to be the case and so later 19th-century kilns are usually square (Walton & Walton 1998, pp.11–13). In oasts built during the period of the brick tax (1784–1850) the upper part of the stowage was often built in timber frame and weatherboarded to reduce the cost. Oast houses may have comprised a single kiln whilst there could be as many as eight kilns. One of the largest groups of kilns was on the Whitbread hop farm in Kent where there were 20 kilns. Square and circular kilns may have been combined in one building, and although square and circular kilns were typical, there are a few examples of octagonal kilns. Kilns could also be constructed in other buildings, such as barns, and it is possible that evidence for early kilns may survive in some barns.

6.4.2 OAST HOUSES IN THE SOUTH EAST

(Figure 26)

By the early 18th century one third of farms in the Rape of Hastings in East Sussex were involved in the cultivation of hops, and most had an oast house (Martin & Martin 1982, p.133). Over 95% of surviving oast houses, however, date from the late 18th century or later. They are concentrated in The Weald of Kent and

Sussex, although a small number are also found in east Hampshire where the Wealden Greensand extends into the county. By the late 19th century hop growing in Sussex was declining – the acreage halving in the 40 years from 1867 due to the superiority of Kentish hops and foreign competition. By the early 20th century over half of the hop acreage of the country was in Kent (Bosworth 1909a, p.52; Bosworth 1909b, p.64). Hop gardens were typically small, rarely exceeding 20 acres. The many oast houses still surviving on the scattered farmsteads of the Weald are a strong characteristic of its landscape, even though the majority have now been converted to residential use. Although hops were grown in other parts of the Region, for example in Berkshire where they were grown 'in considerable quantities' (Mavor 1813, p.229), there are few recorded associated buildings surviving.

Domestic conversion has generally resulted in the loss of the hearths of the plenum chamber where the kilns were located and the press where sacks or 'pockets' were filled. Surviving examples are of great rarity.

6.5 HAY BARNS AND OTHER CROP-RELATED BUILDINGS

6.5.1 NATIONAL OVERVIEW

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

6.5.2 HAY BARNS AND OTHER CROP-RELATED BUILDINGS IN THE SOUTH EAST

Hay barns and barns apparently dedicated to the storage of vetch are recorded from the early 14th century on some manors of the bishops of Winchester, but there is little evidence for their construction or size. Vetch was also recorded as being stored in stacks, which were thatched (Page 1996).

The predominance of arable farming over the Region meant that hay production was limited and only a few farms constructed open-sided timber-framed or stone hay barns. Hay barns, associated with increased stock numbers, began to be built in larger numbers when mass-produced metal Dutch barns became available in the late 19th century.