



Historic Farmsteads

Preliminary Character Statement: East Midlands Region



ENGLISH HERITAGE



The Countryside Agency

**Landscape
Access
Recreation**

Acknowledgements

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This document is one of eight Preliminary Character Statements, which provide information on the characteristics of traditional farm buildings in each Region. They can be viewed and downloaded at www.helm.org.uk/ruraldevelopment and at www.ahds.ac.uk.

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Summary: East Midlands Region

I LANDSCAPE AND AGRICULTURAL CONTEXT

NATIONAL FRAMEWORK

Patterns of land use were very varied, reflecting cultural factors as well as climatic conditions and the physical structure of the landscape. The distribution of farmsteads, their dates of foundation and their relationship to the farming landscape are intimately linked to **historical patterns of fields** and **settlement** in the landscape. Areas of nucleated settlement, concentrated in a central band running from Northumberland into Somerset and Dorset, are associated with villages whose communally farmed townfields were subject – at varying rates – to amalgamation and enclosure by tenants and landlords from the 14th century. This process was often associated with the creation of new holdings and farmsteads within the new enclosures. Areas of dispersed settlement, where farmsteads are either isolated or grouped in hamlets and surrounded by originally smaller townfields and more ancient patterns of enclosure, are most strongly characteristic of western and parts of eastern and south-eastern England. Between the two extremes are areas that contain both nucleated and dispersed settlement to varying degrees.

Agricultural development in England can be divided into the following major periods:

- *Up to 1750* Economic boom in the 12th and 13th centuries, which included the development of large farms on monastic and secular estates, was followed by contraction of settlement and the leasing out of estates after the famines and plagues of the 14th century. The period from the 15th century was characterised by a general increase in agricultural incomes and productivity and the emergence – particularly from 1660 – of increasingly market-based and specialised regional economies. Substantially complete farm buildings of this period are rare, and provide the first evidence for the development and strengthening of regional traditions and building types. Many surviving farmsteads in upland areas, with farm buildings attached to their farmhouse, survive from the later 17th and 18th centuries. It is otherwise very rare for farmsteads to have more than a house and barn dating from this period.
- *1750 – 1880* This is the most important period of farm building development, the production of farmyard manure by cattle playing a major role in increasing agricultural productivity. The increased output of this period was encouraged by rising grain

prices and the demands of an increasingly urban population, and was enabled by the expansion of the cultivated area (especially from the 1790s to 1815), the continued reorganisation and enlargement of holdings and the final phase of the enclosure of open fields – concentrated in the Midland counties. Substantial improvements in animal husbandry were made with the development of improved breeds and a greater awareness of the importance of the need for housing, particularly for cattle, which hastened fattening and meant that manure could be collected and stored better. The high-input/high-output systems of the 'High Farming' years of the 1840s to 1870s were based on the availability of imported artificial fertilisers, manures and feeds.

- *1880 – 1940* There was little fresh investment due to the long farming depression in this period, notable exceptions being some estates and continuing developments in dairying areas. Hygiene regulations in the inter-war period resulted in intense forms of housing for pigs and poultry, and the replacement of earlier forms of housing for dairy cattle by new forms of cow house with concrete floors and stalls, and metal roofs and fittings.
- *1940 to 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 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. 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.

REGIONAL PATTERNS

The Region covers a **wide diversity of settlement forms**. Settlement in the claylands and limestone uplands predominantly consists of nucleated villages with very few isolated farmsteads or hamlets. There are significant traces of ridge-and-furrow cultivation, and large numbers of deserted village sites, some of which have continued

as isolated farms. Although enclosure was underway by the 15th century in some parts, open-field farming lasted longer in this than any other Region, together with small, mixed farms clustered in the villages. Most dispersed farmsteads and settlement are associated with 18th- and 19th-century enclosure.

There is a greater density of dispersed farms and hamlets on the claylands of the Warwickshire / Leicestershire border; the fenland and in the north-western part of the Region, stretching into the Pennines, although villages are found along the boundary between the fen and the gradually rising land to the west, and in the area of north Derbyshire and part of Nottinghamshire affected by 19th-century industrialisation.

The principal **agricultural regions** comprise the clay vales and limestone uplands, the Wolds, the Pennines, the forests and the coastal marshes and fens.

In the clay vales and limestone uplands enclosure – mostly complete by the 1790s – mainly resulted in the conversion of arable to pasture for rearing and dairying, particularly near the towns. Cheese was one of the principal products and was sold in London and other manufacturing towns of the Midlands and the north. The expansion of the railway network facilitated further increases in dairying for liquid milk, particularly in Leicestershire and lowland Derbyshire, and the development of cheese factories. The area was also noted for rearing horses, particularly working beasts.

In the Lincolnshire Wolds enclosure for sheep pastures began in the 14th century and continued into the 17th century, resulting in the depopulation of some villages. The landscape was transformed by enclosure in the later 18th and 19th centuries, creating arable fields and isolated farmsteads and enabling the growth of substantial tenant farmers.

The Pennines area – including the Peak District – was sheep and cattle country, with farmers combining agriculture with industries such as quarrying, and lead- and coal-mining. Enclosure affected much of the valley-side and bottom landscapes between the 15th and 17th centuries, with the regular and large-scale enclosure of the upper fells in the late 18th to 19th century. The enclosure of the open moor and common of the more fertile limestone White Peak had begun by the 16th century, sometimes resulting in large regular fields more characteristic of parliamentary enclosure.

Different farming systems operated in the Region's extensive forest lands. On the clays of Charnwood dairying was predominant, whilst in Sherwood tree felling and enclosure transformed the area into an

arable landscape by the early 19th century. Extensive areas of heathland were also enclosed between the 1790s and 1815.

Around 1700 the coastal marshes and fens primarily provided grazing for sheep, often rented out to wealthier farmers on the Wolds, but market gardening was also important. Farms were small and fragmented unlike in the Cambridgeshire fens where large landowners dominated. The few major landowners instigated large-scale drainage schemes from the mid-17th century and continued during the 18th and early 19th centuries, transforming the area into some of the most fertile land in the British Isles.

2 BUILDING MATERIALS

NATIONAL FRAMEWORK

The use of locally available materials, combined with local vernacular traditions, makes a fundamental contribution to local and regional diversity.

Long-rooted traditions such as earth walling, thatch and timber frame, survived much longer on farm buildings than farmhouses. Buildings in stone and brick, roofed with tile or slate, increasingly replaced such buildings from the later 18th century.

Standardised forms of construction, including softwood roof trusses, developed across the country in the 19th century, often reflecting the greater availability of materials such as Welsh slate transported along the canals and, later, the railways. Corrugated iron was used from the late 19th century as a cheap means of replacing or covering roofs (particularly thatch) in poor condition.

REGIONAL PATTERNS

There is an extremely wide variety of building stones, mostly limestones and sandstones, which are fundamental to the character of large areas of this Region.

The Region has a major concentration of earth-walled buildings, concentrated in Leicestershire, Northamptonshire and south-east Nottinghamshire, in association with timber stud walling (a technique known as mud and stud) in parts of Lincolnshire. Few mud-walled buildings – which in contrast to Cumbrian or South West cob had quite thin walls and were only built to a single storey – have survived; many may survive behind later brick skins.

With clay being readily available across large parts of the Region, brick is a characteristic building material, particularly through south Derbyshire, Nottinghamshire and Leicestershire where brick is the dominant walling

material. Brick-built barns often have features such as tumbled brickwork at the gables and dentilled eaves.

The Region is not an area famed for its aisled or timber-framed buildings but framing does appear in Leicestershire, in the Derbyshire foothills and in nearby parts of the inner Trent valley.

Straw thatching occurs in the vales where corn crops were grown, but its use is generally uncommon compared with Regions further south. In the north-west gritstone is used for roofing slabs while slate roofs are common in the Peak District. The limestone is also used for stone slates (Cotswold; Collyweston; Swithland).

The availability of clays for brick-making also allowed the production of clay tiles and over large parts of the Region plain tiles or pantiles are characteristic, with pantiles being common in Nottinghamshire and the north-eastern part of the Region.

3 FARMSTEADS

NATIONAL FRAMEWORK – FARMSTEAD TYPES

The scale and form of farmstead plan types are subject to much variation and are closely related to farm size and status, terrain and land use. It was far more common for the houses on farms in northern and western England to be attached to the farm buildings. By contrast, even small farms in the South East and East Anglia were characterised by detached houses and separate buildings, often loosely arranged around the sides of a yard.

- *Linear plans*, where houses and farm buildings are attached, were ideally suited to small farms (usually stock rearing and dairying), especially in northern pastoral areas with little corn and longer winters where there was an obvious advantage in having cattle and their fodder (primarily hay) in one enclosed building. They now display a wide range in scale, from large steadings of independent Pennine yeoman-farmers to the smallholdings of miner-farmers.
- *Dispersed plans*, comprising clusters and unplanned groupings of separate buildings, were more widespread. They now range from those of hamlets, where the buildings of different owners were often intermixed, to large-scale individual steadings, some of which were of high status.
- *Loose courtyard plans* became most strongly associated with large and/or arable farms. The buildings are built around a yard with or without scatters of other farm buildings close by.
- *Regular courtyard plans*, where the various functions were carefully placed in relation to one another in order to minimise the waste of labour, and where the manure could be conserved, were built – at first on large estates – from the later 18th century.

REGIONAL PATTERNS – FARMSTEAD TYPES

A distinctive and important regional feature is the number of farms that after enclosure, although often representing the amalgamation of earlier holdings, remained based in the centre of villages rather than being moved out into newly enclosed fields. Many of these farms remain, as linear, dispersed, courtyard or L-plans with house and barn combinations.

Linear plans are widely distributed, and are concentrated in the clay vales to the north of the Region, in the limestone uplands and in the Pennine fringes and uplands. The Region has some examples of *laithes* houses, more commonly found further north in the Pennines.

The smaller dairy farms on the midland clays typically included a scattered group of buildings. Over much of the estate lands of the clay vales and the Lincolnshire Wolds courtyard plans are found.

NATIONAL FRAMEWORK – BUILDING TYPES

The functions of crop processing and storage and the accommodation of animals and birds determine the variety of building types, which could house one or a combination of functions. The principal types are listed below.

Barns are generally the largest farm buildings to be found on farms. They were either designed solely for storing and processing the corn crop, these being most common in areas of arable production, or as combination barns to incorporate many functions. Threshing machines, usually powered by horses accommodated in a projecting wheel house, were introduced from the later 18th century. Split-level mixing barns developed in many regions from the later 18th century as a result of the widespread introduction of machinery for processing corn and fodder. The introduction of the portable steam engine and threshing machine in the 1850s heralded the end of the traditional barn as a building for storage and processing.

Field barns were built in areas where farmsteads and fields were sited at a long distance from each other, and where holdings were intermixed. **Granaries** were either detached or built over stables and cart sheds. **Cart sheds** often faced away from the farmyard and were typically close to the stables and roadways, giving direct access to the fields. **Stables** were normally two-storey well-lit buildings with a hayloft above. **Cow houses** were typically built for dairy cattle. The folding of stock in strawed-down yards and feeding them with root crops became more general from the later 18th century, together with the subdivision of yards into smaller areas and the construction of **shelter sheds** and **looseboxes**. **Pigs** were undoubtedly kept on most farms and

particularly on dairying establishments, where there was a ready supply of whey on which to feed them.

Dovecotes were built to house pigeons, which provided variety to the diets of high-status households and a rich source of manure.

REGIONAL PATTERNS – BUILDING TYPES

There is a thin scatter of medieval monastic barns. Cruck-framed barns from the 15th to 17th century are clustered in the south Pennines. Also in the south Pennine area, extending into the adjacent areas, 17th- and 18th-century combination barns are found on larger linear steadings. There are also major concentrations of pre-1750 barns in the south of the Region. Most existing barns are of later 18th- and 19th-century date and small in scale, this being a strong characteristic of much of the Region. From the 1840s, open-air threshing by machine and small mixing rooms, for preparing fodder for cattle in adjacent cattle yards, were replacing the traditional threshing barn over much of the Region.

Pre-1840 cattle buildings are exceptionally rare in this Region: the earliest date from the 17th century and usually form part of combination barns. It is probable that, as in the East of England and West Midlands Regions, there were pre-18th-century cattle yards bordered by barns and stables. Enclosed, typically mud and stud, cow houses were found in grazing and dairying areas. Most were rebuilt in brick during the 19th century. Linear steadings in the Derbyshire Dales often incorporated a cow house. The addition of single-storey brick and pantile shelter sheds around divided 'crew yards', where groups of cattle could be managed individually, became increasingly common in the early to mid-19th century, particularly in the south and east of the Region.

Larger farms in much of the Region often have isolated outfarms, sometimes with a cottage beside them. In the pastoral areas of the Derbyshire Dales are small stone field barns providing haylofts over livestock accommodation.

1.0 Introduction

If the land is best suited for tillage, then the outhouses must be adapted to the purposes of keeping cattle for plowing; of holding and thrashing corn; and of preserving straw, &c. for winter food. In the counties where oxen plow, ox-houses must exceed the quantity of stabling: if where horses only are used, stables alone will be sufficient. If the land seems to promise fairest for pasturage, then cow houses, suckling-houses, sheepcots, dairies, and fattening houses must predominate; and if for grass, much barn-room seems unnecessary.

The Complete English Farmer, 1771, quoted in Wiliam 1986, p.67

Farm buildings are the leitmotif of the countryside. It seems appropriate to describe them with a musical term for they are thematic, and the resonance of their forms, colours and textures within the scenery is that of sound, overall and orchestrated. Here and there is the solo instrument, spectacular in its own right, but much more important is the orchestral effect.

Darley, Gillian (1981) *The National Trust Book of the Farm*, The National Trust, London, p.7

Historic farmsteads and their buildings make a fundamental contribution to the richly varied character of our countryside, and illustrate the long history of farming and settlement in the English landscape. England displays a huge diversity in geology, with a greater variety in small areas than anywhere else in Europe, which combined with varied farming practices has resulted in a great diversity of materials and types of farmstead.

It is clear, however, that we know far more about the nature and processes of change affecting land cover and field pattern than we do about agriculture's built environment and its contribution to countryside character and local distinctiveness. Furthermore, we know far less about the working than the domestic buildings of the farmstead. Recent research has made initial efforts to address this issue, and has made it clear how the domestic and working buildings of the farmstead are subject to very different processes of change (Gaskell & Owen, 2005).

English Heritage is now undertaking to develop this knowledge base in order to inform diverse future outcomes, such as the targeting of grant aid and the development of character-based policies for the sustainable reuse of farm buildings. This document is one of eight regional *preliminary character statements* that aim to promote better and more accessible understanding of the character of farm buildings. It is important, as a first step in this process, to present an information base for a broad diversity of users with an interest in researching,

understanding and managing historic farmsteads. It has therefore been written as a sourced synthesis of information, drawing together information that will enable the farmsteads of each Region to be better understood within the national context of farmstead and agricultural development, and their surrounding fields and settlements. As this is a preliminary statement, it and future work will benefit greatly from information and comments. These will be gratefully received at the following e-mail address:

jeremy.lake@english-heritage.org.uk.

The objectives of this document are:

- To provide an information base and introduction to the subject.
- To place the development of the farmsteads and farm buildings of the East Midlands Region within their national context.
- To demonstrate, with examples, how the *present* stock of farmsteads and their buildings reflects the diversity of farming, settlement and landscape character in the East Midlands Region.
- To provide broad guidance on the value and survival by period and functional type.

An accompanying policy booklet has also been prepared, which makes the case for urgent action and considers

the importance of historic farm buildings, their value and their future. See *Living buildings in a living landscape: finding a future for traditional farm buildings*, at www.helm.org.uk/ruraldevelopment.

In each of the following sections, the national overview is presented immediately before the regional statement. For example, on the topic of barns, the national overview describes the development, variety and uses of barns nationally while the regional statement describes the variety that can be seen in the barns of the Region.

Section 2 provides an introduction to characterisation and briefly describes the landscape character of the Region, examining the pattern of rural settlement across the Region.

Section 3 describes the predominant building materials used for farm buildings nationally and in the Region.

Section 4 provides a brief introduction to the agricultural history of England with particular reference to the development of farmsteads and farm buildings divided into the major periods, supported by statements relating to the survival and significance of farm buildings from each period. This is followed by a summary of the

agricultural history of the Region.

Section 5 provides a national and regional background of types of farmsteads and farm buildings.

Sections 6, 7 and 8 provide a national and regional overview of key building types.

Section 9 provides a Glossary of terms both familiar and unfamiliar to the reader (e.g. dairy, linhay, enclosure).

Section 10 provides a list of national and regional sources for further reference.

It is also important at this stage to outline a distinction in terminology. 'Traditional' is a term often used to describe farm buildings pre-dating 1940, after which modern building materials (concrete, steel, asbestos sheet) and revolutions in farming technology and farmstead planning marked a sharp divide with previous practice. 'Historic' is more encompassing, as it includes farmsteads of all dates, irrespective of changes in form and material; it has been used in this document in order that the reader can view the history of farm buildings, and their change and adaptation over the centuries, within their broad historical context.

2.0 Understanding Context and Character

2.1 LANDSCAPE CHARACTER AND CHARACTERISATION

Landscape character is defined as a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape. Particular combinations of geology (Figure 1A), landform, soils, vegetation, land use, field patterns and human settlement create character. Character makes each part of the landscape distinct, and gives each its particular sense of place. Landscape-scale techniques for understanding and guiding future change, now brigaded under the heading of characterisation, have developed since the 1990s. These have developed as multi-disciplinary and holistic tools for understanding the whole rural environment, its capacity to absorb change and its links to community values and needs.

During the 1990s the Countryside Commission worked with English Nature and English Heritage to identify Joint Character Areas (159 in total) for the whole of England, each of these resulting from a combination of factors such as land cover, geology, soils, topography, and settlement and enclosure patterns. These are now being used as the framework for the delivery of advice and the targeting of resources for many aspects of the rural environment, most recently to farmers under the Higher Level Stewardship Agri-Environment schemes, and local authorities have taken forward this methodology for Landscape Character Assessments on a finer scale. These are also being used as the spatial framework for reporting change in the countryside, in the Countryside Quality Counts project (see www.cqc.org.uk).

The East Midlands Region extends over the Joint Character Areas listed in Figure 1B. Whenever the text cross-refers to the Joint Character Areas, they will be listed by their number (i.e. JCA 152). The key characteristics and a detailed description and map for each Character Area are available from the Countryside Agency's website (www.countryside.gov.uk/lar/landscape). The web addresses for each JCA are detailed in Section 11.

Human impact has been central to the development and present character of landscape. Historic Landscape Characterisation (HLC), which is being developed by English Heritage with its county and local partners, is using GIS mapping techniques to deepen our understanding and perception of the long historical development of our landscapes. The practical applications of HLC now include development plans, a broad range of conservation and enhancement strategies, strategic land-use planning and similar initiatives, and research and

academic implications (Clark, Darlington & Fairclough, 2004; Rippon, 2005, 100–142).

Pilot work is now indicating that the density and time-depth of farmsteads, and the rates of survival of different types of steading and building, are closely related to patterns of historically conditioned landscape character and type (Lake & Edwards 2006). This work represents a shift in focus away from individual buildings to a more question-based and holistic approach, one that uses landscape to both reflect and inform the patterning of the built environment. Recording and understanding at a local scale can both test and refine these broad-based, contextualised statements and contribute towards a more integrated understanding of both buildings and landscapes.

For characterisation see: www.english-heritage.org.uk/characterisation

2.2 THE CHARACTER OF THE EAST MIDLANDS REGION: AN INTRODUCTION

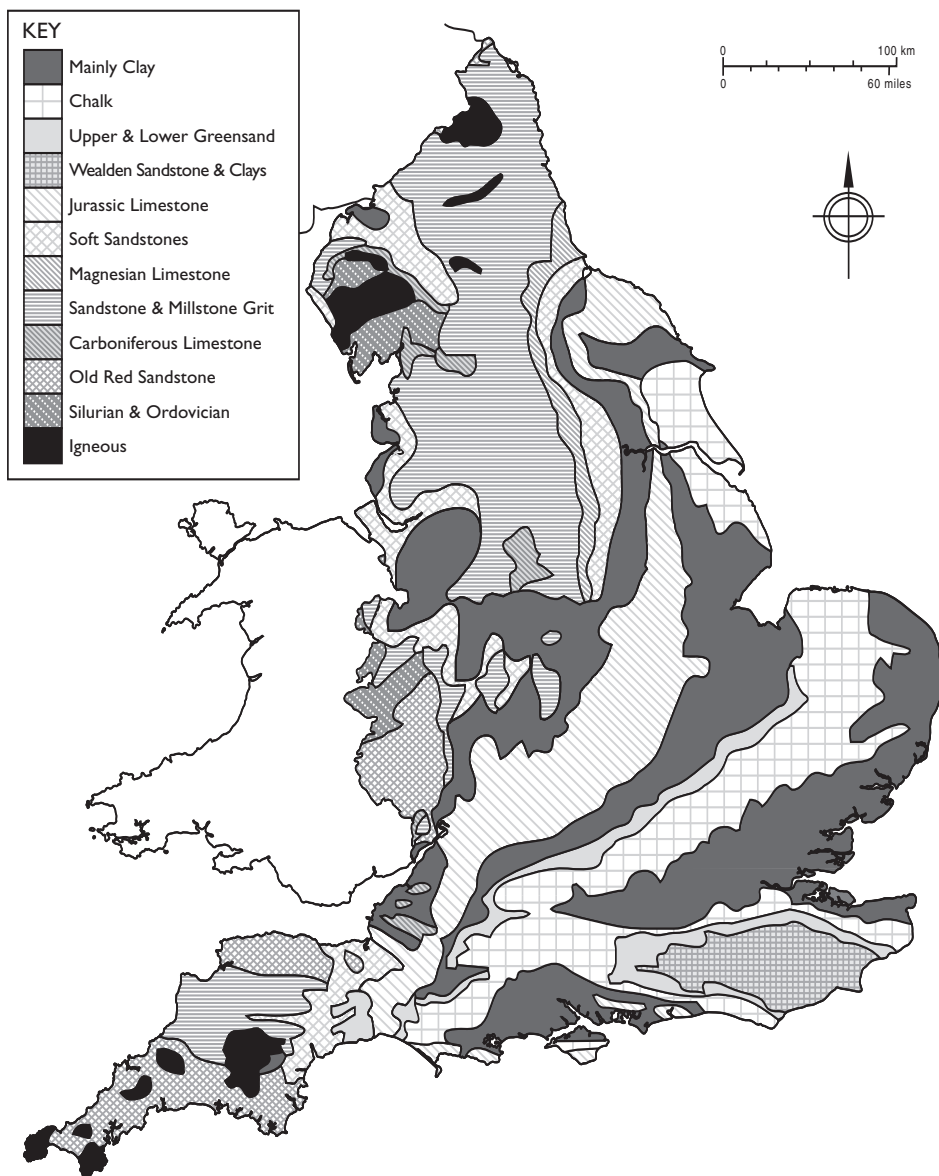
The East Midlands Region comprises the five counties of Leicestershire, Northamptonshire, Derbyshire, Nottinghamshire and Lincolnshire, which contain a huge variety of landscapes, from the upland moorland of the Peak District to the low-lying fens and coastline of Lincolnshire.

Geologically, the oldest rocks outcrop on the uplands, crags and moors of the Peak District of Derbyshire and Charnwood Forest in Leicestershire where conglomerates, limestones and grits are found. Chalk is found in the Lincolnshire Wolds, while a belt of Jurassic limestone – a continuation of the Cotswolds – extends across the south-eastern and eastern part of the Region. In Nottinghamshire New Red Sandstone and Magnesian Limestone are found. The far eastern part of the Region predominantly comprises later deposits, such as glacial clays, sands and gravels, and the peat and alluvium resulting from the flooding of the eastern coastal fens.

At the north-western edge of the Region are the upland areas of the Dark Peak and White Peak of the Peak District, which are sharply contrasting in terms of their landscape character and historical development. To the east of the Peak District lie the Derbyshire Peak Fringe and Lower Derwent, the Yorkshire Southern Pennine Fringe, and the Nottinghamshire, Derbyshire and Yorkshire Coalfield.

Over much of the central and southern part of the Region, the landscape has a gently rolling, undulating character of clay ridges dissected by river valleys. These

IA Geology map of England
 England displays a huge diversity in geology, with a greater variety in small areas than anywhere else in Europe. The East Midlands Region has a varied geology providing sandstone and limestones for both walling and roofing. The use of these building stones makes a major contribution to local distinctiveness in parts of the Region. Across the clay vales of the Midland plain there was a tradition of earth-walling but brick and tile made from the local clays are now the dominant building materials. Based upon 'Solid Geology' Source Defra/BGS, NERC: by permission of the British Geological Survey IPR/52-65C. ©NERC/Crown copyright. OS Licence No. 100042054



generally mixed farmland landscapes often have relatively little woodland although some, such as the Kesteven Uplands and the Needwood and South Derbyshire Claylands, have a more wooded character:

The forest areas of Charnwood and Sherwood lie on poor, sandy soils. Charnwood is a unique landscape of heathland based on volcanic rocks that has areas of upland rising out of the surrounding claylands. Settlement, in the form of small villages and farmsteads, tends to be concentrated on the fringe of the area, which is predominantly pasture within regular 19th-century fields with extensive woodland. Although the rolling landscape of Sherwood also consists of poor soils, arable farming is now the major land use with some surviving remnants of the heathland and forest character. Large parks, created when there was little demand for land in the forest, are important and characteristic features.

The Fens has a large-scale, flat, open landscape with extensive vistas to level horizons and huge skies. A

hierarchy of rivers, drains and ditches strongly influence the character of the area. The Lincolnshire Coast and Marshes has similarly a flat, predominantly open, medium-scale agricultural landscape rising gradually in the west to more undulating land at the foot of the Lincolnshire Wolds. The Wolds is a rolling chalk 'upland' arable landscape of elevated plateaux and deep, steep-sided dales and a pronounced scarp edge to north and west overlooking the Central Lincolnshire Vale, a broad low-lying arable vale. West of the Central Lincolnshire Vale the land rises to the North Lincolnshire Edge and Coversands, a large-scale arable escarpment broadly divided into north and south by the River Witham at Lincoln, with the prominent scarp slope of Lincoln 'Cliff' marking the western edge of the area.

Over 75% of the area as a whole is Grade 1–3 agricultural land, with the better land towards the east. In Lincolnshire 44% of land falls into Grades 1 and 2. Other than Derbyshire, where the upland areas have poor soils, Grade 3 land accounts for over half of the

JCA number JCA name

- 30 Southern Magnesian Limestone
- 37 Yorkshire Southern Pennine Fringe
- 38 Nottinghamshire, Derbyshire and Yorkshire Coalfield
- 39 Humberhead Levels
- 42 Lincolnshire Coast and Marshes
- 43 Lincolnshire Wolds
- 44 Central Lincolnshire Vale
- 45 Northern Lincolnshire Edge with Coversands
- 46 The Fens
- 47 Southern Lincolnshire Edge
- 48 Trent and Belvoir Vales
- 49 Sherwood
- 50 Derbyshire Peak Fringe
- 51 Dark Peak
- 52 White Peak
- 53 South West Peak
- 68 Needwood and South Derbyshire Claylands
- 69 Trent Valley Washlands
- 70 Melbourne Parklands
- 71 Leicestershire and South Derbyshire Coalfield
- 72 Mease/Sence Lowlands
- 73 Charnwood
- 74 Leicestershire and Nottinghamshire Wolds
- 75 Kesteven Uplands
- 88 Bedfordshire and Cambridgeshire Claylands
- 89 Northamptonshire Vales
- 91 Yardley-Whittlewood Ridge
- 92 Rockingham Forest
- 93 High Leicestershire
- 94 Leicestershire Vales
- 95 Northamptonshire Uplands

IB This map shows the Character Areas relating to this Region. These are known as Countryside Character Areas or most commonly now as Joint Character Areas, this reflecting their development as multi-disciplinary means of mapping, defining and describing the character of distinct areas. Based upon Joint Character Areas. Source: Defra/English Nature/Countryside Agency. © Crown copyright OS Licence no. 100042054



farmland in all the other counties (MAFF Census Data 1997).

Compared with most other Regions of England and Wales, the East Midlands is least affected by the moderating influence of the sea, so rainfall is lower and there is a greater daily or monthly temperature range than elsewhere. Rainfall varies between 560mm in

south-east Leicestershire to 700mm on exposed high ground in Lincolnshire, Leicestershire and Northamptonshire, but the Peak District receives 1600mm. These figures compare with an average of 940mm for England and Wales, which highlights that most of the Region is drier, other than Derbyshire, than national averages (ERDP 2002).

2.3 THE CHARACTER OF RURAL SETTLEMENT

2.3.1 NATIONAL FRAMEWORK

Farmland has historically been divided into arable for growing corn and other crops, and meadow for hay and grass. In the past, farmers also had access to fallow land, land laid open after the harvest and areas of rougher common ground for grazing livestock. Patterns of settlement in the countryside varied from large, nucleated villages to dispersed settlement areas with scattered, isolated hamlets and farmsteads, both being closely related to the patterns of fields and their associated boundaries in the surrounding landscape. There were many variations between the two extremes of communal open fields with their scattered holdings, which typically developed around larger nucleated settlements, and the anciently enclosed fields of isolated farmsteads and hamlets.

Re-arranging previously communal fields or common pasture land into self-contained private land units enabled the rationalisation of formerly scattered holdings, allowing better management of livestock and rotation of crops. This process of enclosure – evident from the 14th century and even earlier – resulted in the immediate or gradual establishment of new isolated farmsteads out in the fields. It could be undertaken on a piecemeal basis, or in one single phase, the latter form of enclosure being typically more regular in its appearance. Enclosure by parliamentary act, some of which formalised earlier agreements, often resulted in new designed landscapes. Parliamentary enclosure was concentrated in the period 1750 to 1880.

English Heritage has commissioned work on mapping these patterns of settlement in the English countryside, now published as *An Atlas of Rural Settlement in England* (Roberts & Wrathmell 2000) and *Region and Place, A Study of English Rural Settlement* (Roberts & Wrathmell 2002). In summary, it has been demonstrated that a Central Province mostly characterised by nucleated settlement and, by the 14th century, communal fields which occupied the great majority of the land area, is flanked by a South-Eastern Province and both a Northern and Western Province where settlement is mostly dispersed (Figure 2).

In areas of *nucleated settlement* in the medieval period and later, the majority of farmsteads were sited in villages and the surrounding land dominated by communally managed open fields, where the holdings of individual farmers were inter-mixed and farmed in rotation as meadow or arable land. Many open field systems were created during the period from the 9th to the 12th centuries, replacing earlier dispersed patterns

of settlement with nucleated villages with communally managed fields, many of which were clearly planned by estates.

Farmsteads in areas of *dispersed settlement* are commonly isolated or clustered in hamlets. They are commonly medieval in origin (pre-14th century generally) and often surrounded by ancient and irregular patterns of field boundaries, including the reclamation of woodland or waste. Typically smaller and more numerous than the open fields of Midlands villages, these fields were either farmed from the outset as compact farming units or contained the scattered holdings or strips of individual farmers that were farmed on a communal basis. Areas of pasture and rough grazing were typically far greater in extent than in areas of nucleated settlement, and have again been subject to varying rates of enclosure from the 14th century.

Between the extremes of nucleation and dispersion are the areas that to some degree included both villages and scattered farmsteads and hamlets. In these areas, nucleated villages again originated from developments between the 9th and 12th centuries, but were often intermixed with isolated farmsteads that date from both the medieval period or earlier and from the later enclosure of open fields and common meadow and pasture.

In some areas, the remains of earlier, including pre-Roman, farmsteads are visible as crop-marks or earthworks close to existing farmsteads or villages (see Roberts 1976 and Taylor 1983 for a useful introduction). While research is demonstrating that existing parish and field boundaries possibly originate from very early, even pre-Roman, field and estate boundaries, it is exceptionally rare for present farmstead sites – as in Cornwall's West Penwith – to display such continuity.

2.3.2 RURAL SETTLEMENT IN THE EAST MIDLANDS (Figure 2)

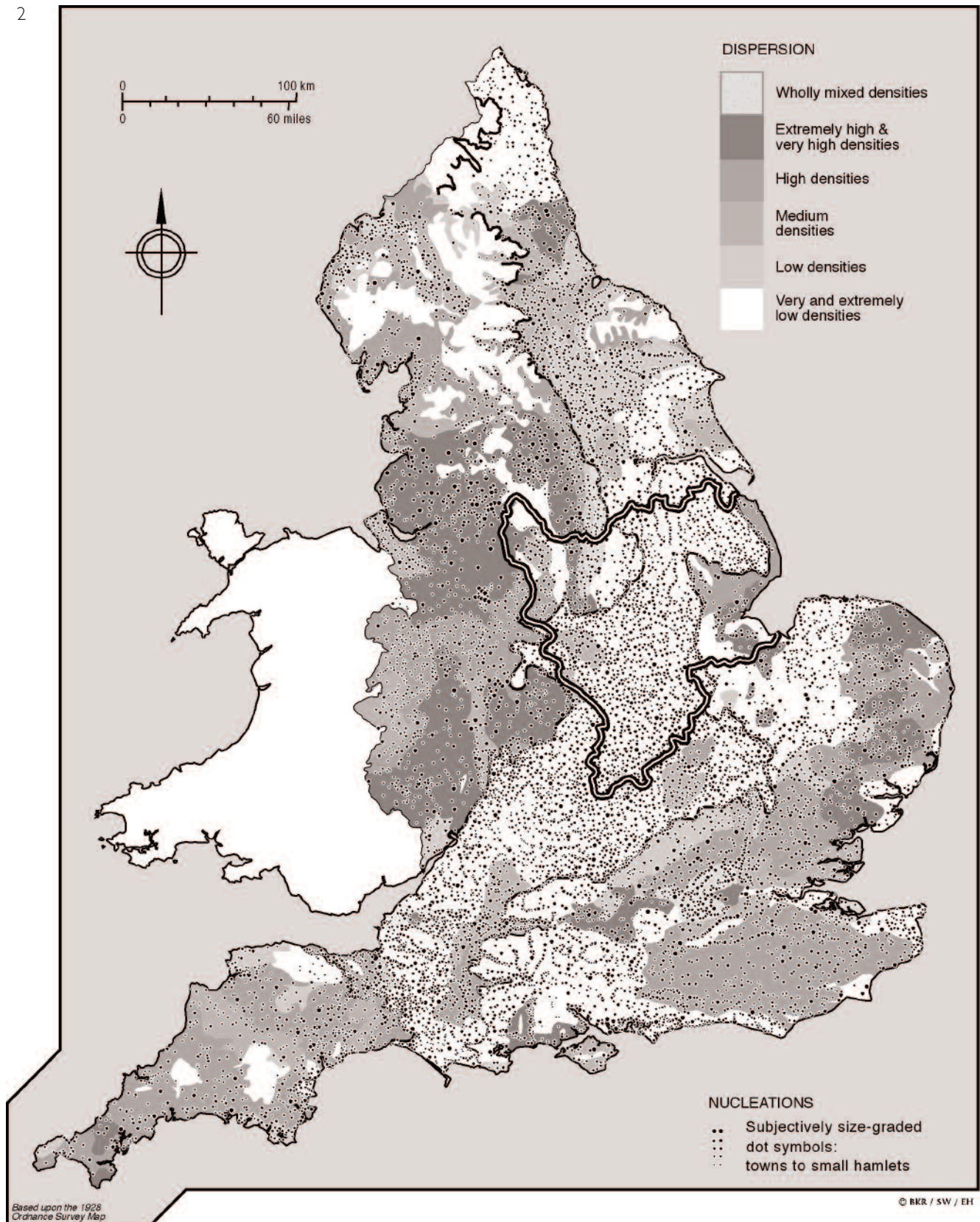
The East Midlands Region covers a wide diversity of settlement forms. The majority of the area lies within Roberts and Wrathmell's Central Province where settlement predominantly consists of nucleated villages with very few isolated farmsteads or hamlets. There are large numbers of deserted villages, some of which have continued as isolated farms. There are a few moated sites on the claylands of the Warwickshire / Leicestershire border and in the south of the Midland plain, but here again most isolated farms are the result of 18th- and 19th-century enclosure. There are fewer nucleations in the old forested areas (Roberts & Wrathmell 2000).

The north-western part of the Region, stretching into the Pennines, lies in the Northern and Western Province.

- 2 Rural settlement in England. Rural settlement can broadly be divided into two types: nucleated villages and dispersed farmsteads and hamlets. Figure 2 presents an analysis of the settlement pattern of England in the mid-19th century which identifies three 'provinces'. The Central Province, mostly characterised by nucleated settlement and once dominated by communal fields, stretches from Dorset, through Gloucestershire, the East Midlands, Yorkshire and along the north-east coast. This area is flanked by a South-Eastern Province covering the area from Dorset and Wiltshire to East Anglia, and a Northern & Western Province. In these Provinces settlement is mostly dispersed. The East Midlands Region straddles the Central Province, with the north-western Pennine part of the Region extending into the Northern and Western Province and the low-lying Lincolnshire fens and coastal marshes lying in the South Eastern Province.

Source: *An Atlas of Rural Settlement in England* (2000) ©English Heritage/Roberts, B.K. and Wrathmell, S.

2



Here there is a greater density of dispersed farmsteads and hamlets, although in the area of north Derbyshire and part of Nottinghamshire nucleated villages are predominant. However, it is considered that this settlement pattern is due to 19th-century industrialisation and the growth of many small hamlets into villages at that time.

The east coast and fenland part of the Region lies within the South-eastern Province where there is also a greater density of dispersed farms and hamlets, although villages are found along the boundary between the fen and the gradually rising land to the west. Settlement in the area fringing the Wash is a relatively late development as it is only the drainage of large areas that took place from the 17th century that reclaimed this landscape to allow agriculture and settlement.

3.0 Building Materials

3.1 NATIONAL OVERVIEW

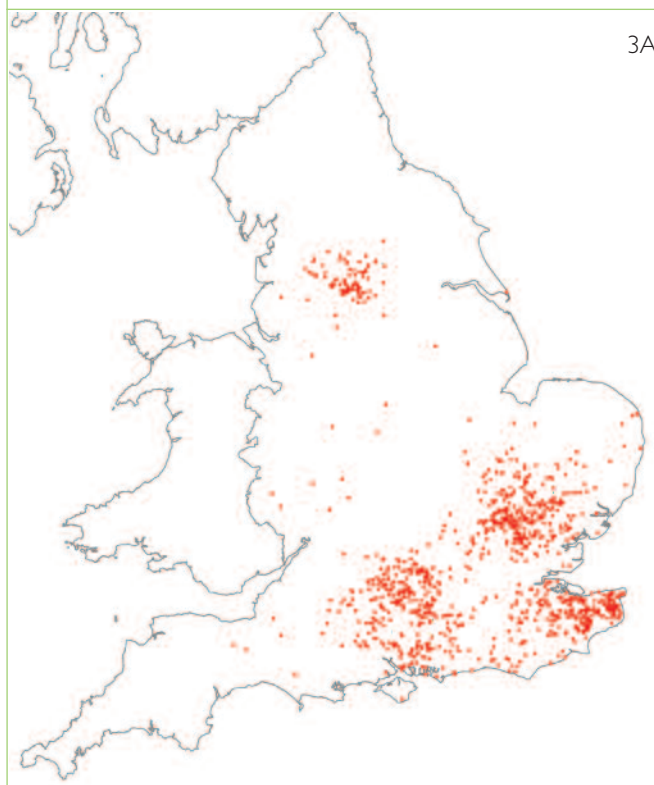
Farm buildings were frequently altered and re-roofed, and survivals can display evidence for successive phases of rebuilding, marked by straight joints in masonry or indications of mortise holes and joints in timberwork.

The present stock of farm buildings displays strong local and regional variation. This is the result of a range of factors, particularly England's huge diversity in geology, the status of the owner, availability of resources managed in the local landscape and the cost of manufactured materials (Rackham 1972; Moir 1997). Long-rooted traditions such as earth walling and thatch in Cornwall and timber frame in Norfolk, survived much longer on farm buildings than farmhouses, and were not overtaken by increasingly fashionable and robust forms of construction (such as stone in parts of Cornwall, brick in Norfolk) until the early to mid-19th century (Potts 1974; Lucas 1997). The coastal shipping trade had for many centuries allowed the transport of building materials, but the arrival firstly of canals and then railways allowed the easier transportation of building materials into inland

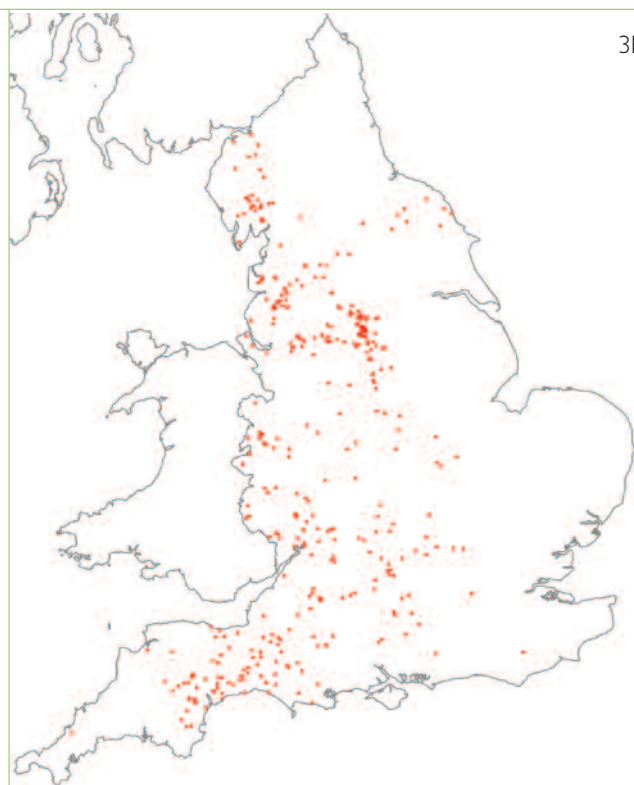
areas. Buildings in stone and brick, and roofed with tile or slate, increasingly replaced buildings in clay, timber and thatch from the later 18th century. Mass-walled buildings comprise the majority of listed agricultural buildings (67%), with timber framing accounting for just over one quarter of entries.

There are strong regional and local differences in roof construction and carpentry, as is still demonstrated by the distribution of aisled and cruck buildings (Figures 3 and 4). From the medieval period, the unit of reference in timber-framed and mass-walled buildings became the bay, the distance between principal roof trusses. These bays could also mark out different areas of storage within barns and other buildings (see 3.1.1.3). Iron bolts, straps and tension bars became increasingly common, often in combination with imported softwood, in the 19th century. Textbooks such as Waistell's *Designs for Agricultural Buildings* (1827) and Stephens's *Book of the Farm* (1844) helped to promote more standardised forms of construction. Metal roofs were used from the 1850s for covered yards and other buildings on expensive planned

- 3 The distribution of listed aisled (left) and cruck (right) barns in England. Aisled construction, used for domestic buildings from the 12th century at the highest level in society, was suited to the storage and constructional requirements of large barns. The weighting of the distribution is southern English, stretching into the south of the East of England Region, with outliers being generally of a high status and dating from before 1550; a notable concentration in northern England is in the Halifax–Huddersfield area, where the wealth derived from a combination of farming and the cloth industry in the 15th and 16th centuries led to the construction of a notable group of aisled houses and barns. Aisled construction continued to be employed in southern England into the 19th century. Crucks in domestic buildings have a date range from the mid-13th to the mid-17th centuries, examples in the north of England being generally later in date, whereas in agricultural buildings the earliest survivals are 15th century and the latest (in the southern Pennines) early 18th century. There is a wide variety of forms in cruck construction. © Crown copyright. All rights reserved. English Heritage 100019088. 2005



3A



3B

4A Aisled barn, Cressing Temple, Essex. One of the earliest barns in England and one of two barns surviving from an estate of the Knights Hospitaller erected with timber felled between 1259 and 1280. (South Suffolk and North Essex Claylands)

B Barn at Cross Farm, Burgh-by-Sands, Cumbria, showing the full crucks to the interior of a late 17th-century clay-walled barn. This is one of a group of such barns on the Solway Plain, dating from between the 14th and 17th centuries. (Solway Basin)

A © English Heritage / Michael Williams;

B © Jen Deadman

5 Listed earth-built agricultural buildings in England This map does not accurately reflect the former importance of earth building in the East Midlands. The clays of the Midlands Plain were widely used in mud-and-stud construction for both cottages and farm buildings but the great majority of these poorly built structures were replaced with brick buildings in the 19th century. It is possible that some mud-and-stud survives in small, unlisted farm buildings. In the south of the Region there was a tradition of earth-building similar to the 'cob' or 'mud' construction seen in adjacent Regions.

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farmsteads, but did not come into general use – mainly for covered yards – until the end of the 19th century. Pre-fabricated buildings in iron were manufactured and exported from the 1840s, the most well known on the farmstead being the Dutch barn (see 6.4.1), popular from the 1880s. Factory-made prefabricated buildings, built to standard widths applicable to a wide variety of uses, have since the 1950s been the standard building type used on farms. The principal materials are summarised below.

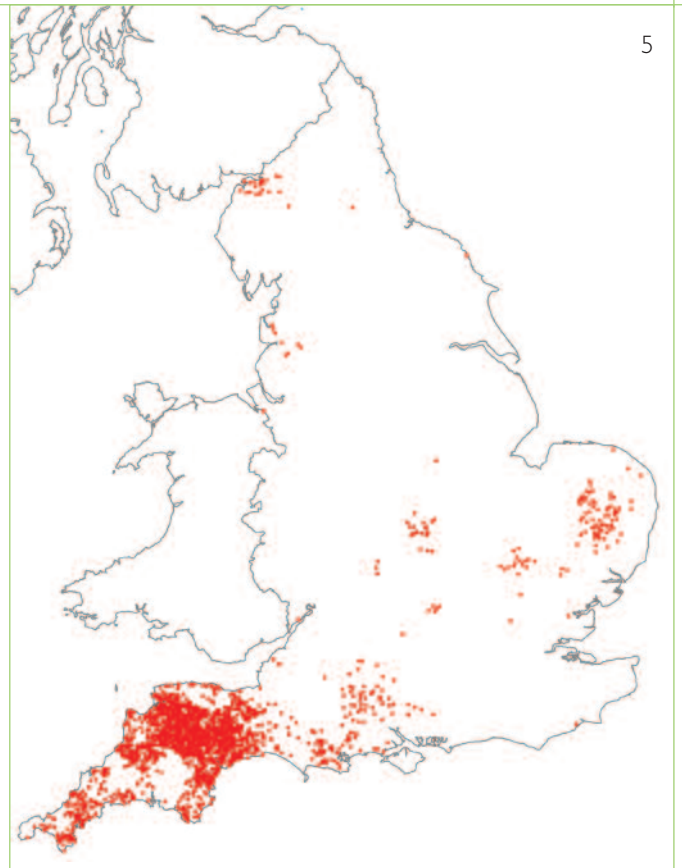
3.1.1 WALLING

3.1.1.1 Temporary structures

As could be expected, the most fragile structures are documented from excavation or archives (for example the Wiltshire vicarage stable 'enclosed with hurdle work' in Hobbs [ed] 2000, xvi and p.438) but have not survived. A long-standing building tradition, where posts were set directly in the ground with no definable bay structure, is documented from excavation and has survived in use for single-storey structures (including 18th-century cart sheds and 20th-century tractor sheds) to the present day (Lake 1989, p.43).

3.1.1.2 Mass walling

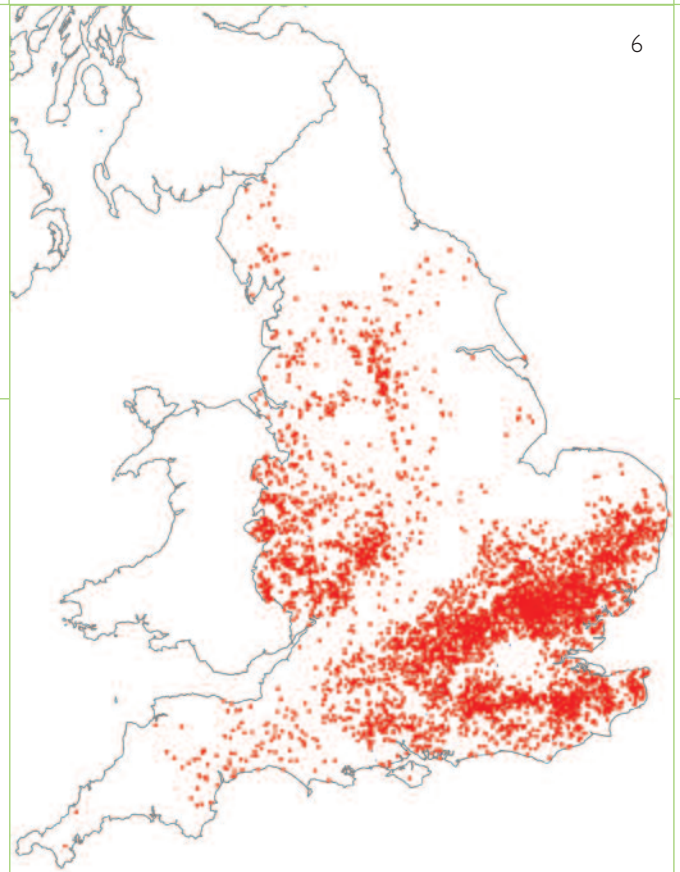
Mass-walled buildings now dominate the traditional farm building stock, almost exclusively so in the three northern regions. Stone and brick display a wide variety of treatment, their use reflecting not only the availability of materials but also the status of the farm and its owner. Large parts of England – particularly in the South East, South West, East of England, the East Midlands and the North West – display different traditions of walling in earth, dating from the 14th century (Figure 5). Concrete was used from the 1860s on some farms, for example for silage clamps, but did not achieve general use until after the 1950s.



3.1.1.3 Timber frame

Timber-framed buildings are concentrated in the East of England, the South East and the West Midlands. The basic vocabulary of construction had been developed by the 13th century – notably the use of sophisticated jointing techniques, particularly at the junction of the main posts and roof trusses (the so-called bay divisions), and timber sills raised off the ground on dwarf walls. Climate and patterns of land use and ownership have affected the availability of timber and, together with cultural factors, have influenced the distribution, appearance of distinct traditions in timber framing and the framing of roof

6 Listed timber-framed barns in England. Although listing concentrates on the generally best-preserved sample of surviving buildings, this map broadly shows the extent of present survival. Note the separation – marked by the limestone belt running from Dorset to Yorkshire – of the major concentrations in south-east England and central southern England and western and northern England, where separate traditions of carpentry and framing developed. The map also reveals much about patterns of loss, and particularly rebuilding in stone and brick, over the centuries. There is a sharp boundary, for example, between the claylands of south Norfolk and Suffolk and the lighter soils of Breckland and north Norfolk, where brick had generally replaced timber frame by the 19th century. The absence of timber frame in the North East, where again it is documented, is notable. Such a map presents an obvious invitation to future analysis and research. © Crown copyright. All rights reserved. English Heritage 100019088. 2005



trusses for mass-walled buildings (Smith 1965; Stenning & Andrews 1988; and Figures 3 and 6). The infill between the timber frames would either be wattle and daub (a clay and straw mix), brick (often a later addition) or simply left as a wattle framework. Timber planks, either rebated or slotted like wattle, were also used but now only survive in very rare instances. External walling and render can also disguise evidence of earlier timber framing, including cruck and aisled construction.

3.1.1.4 Timber cladding

In parts of the country – particularly in the South East, East of England and the western part of the West Midlands – timber frames were often clad in horizontally fixed weatherboarding. Hand-sawn hardwood boarding is now rarely found, as machine-sawn softwood was increasingly used from the late 18th century.

Weatherboarding is either applied to a whole building (most commonly in regions in the South East and the southern part of east England) or to the upper portions of sidewalls (a common use in the West Midlands). Vertical boarding is mainly found in the South East. This had cover strips to prevent the ingress of rain; surviving examples date from the late 19th century. Hit-and-miss timber boarding, sometimes known as Yorkshire boarding, has been widely in use as cladding since the 1970s, since it provides good ventilation and meets modern animal welfare requirements.

3.1.1.5 Corrugated iron

See 3.1.2.3.

3.1.2 ROOFING

3.1.2.1 Thatch

Thatch was common in large parts of the country, and farmers used a wide range of locally available materials: heather, bracken, reeds, rushes, grass, turf, and straw from oats, barley, wheat and rye. Thatch, predominantly made of wheat straw or water reed, is now mainly confined to southern England and East Anglia (Figure 7). Heather and bracken was, until the 19th century, used in upland areas of moorland and heath, such as Dartmoor; the Pennines, the North York Moors and the Cheviots. Solid thatch, where the whole of the roof space was filled with materials such as heather or gorse with a straw or reed

topcoat, was formerly widespread but is now very rare (Moir & Letts 1999, pp.103–4).

3.1.2.2 Plain clay tiles and stone slates

These materials were used at a high social level from the medieval period and are found in many parts of the country. Their use became increasingly widespread after the later 18th century, along with stone and brick walling, supplanting smaller farm buildings built of timber, earth and thatch in many parts of the country. The coastal trade and improved communications also enabled the widespread introduction of pantiles – instantly recognisable with their distinctive curved profile – into parts of the South West and across large areas of the eastern counties from north Essex to Northumberland, and of Welsh slate into many inland areas.

3.1.2.3 Corrugated iron and other prefabricated modern materials

Corrugated iron was used in England from the 1820s, initially for industrial buildings. Although several pioneering firms were producing portable corrugated-iron-clad buildings by the 1850s, it did not come into general use for new farm buildings (particularly on so-called Dutch Barns for protecting harvested hay and corn crops, see 6.4.1) until the farming depression of the 1880s made cheaper materials desirable. By the First World War, corrugated iron was in general use for the repair of roofs on farm buildings, particularly thatch. It was also used for the walling of model farmsteads built to a budget (Wade Martins 2002, p.175)

7 Listed thatched agricultural buildings in England. Particularly evident is the concentration of surviving thatch – the majority of which in agricultural buildings is listed – in southern England but extending into the south of the East Midlands Region, despite its widespread replacement by materials such as corrugated iron from the late 19th century. Rebuilding, and reproofing in slate and tile, has removed the evidence for its formerly extensive use (in straw, heather and bracken) from much of northern England. Such a map presents an obvious invitation to future analysis and research.
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and for smallholders' buildings in areas such as the New Forest. From the 1940s, asbestos cement cladding and a variety of insulating products found their way on to the farmstead. Hit-and-miss vertical boarding (also known as Yorkshire boarding) has been used as cladding since the 1970s.

3.2 BUILDING MATERIALS IN THE EAST MIDLANDS

3.2.1 WALLING (Figure 8)

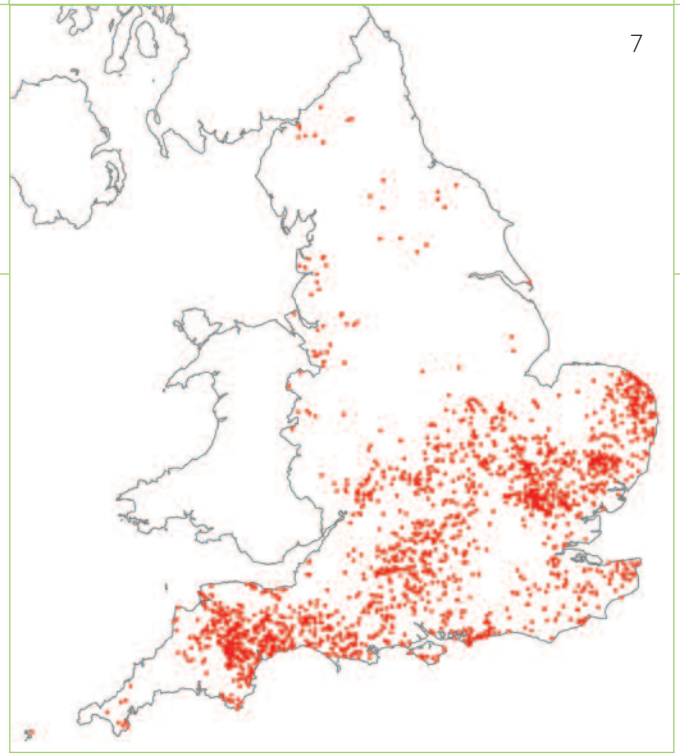
3.2.1.1 Stone

Carboniferous sandstones appear in the Derbyshire White Peak, the Peak Fringe and Lower Derwent area and in nearby parts of the inner Trent valley. Millstone grit, in contrast, marks the character of the Dark Peak and large areas of the South West Peak. The belt of good-quality Jurassic limestone that extends through this Region from the Northamptonshire Uplands into Lincolnshire is fundamental to the character of large parts of this Region. Running northwards from Nottingham is a thin strip of Magnesian limestone that extends into North Yorkshire. A belt of brown marlstone derived from the Middle Lias extends from east Leicestershire, across the Northamptonshire Uplands and into North Oxfordshire in the South East Region. Locally known as ironstone, it is often found in the walling of older buildings. In Nottinghamshire New Red Sandstone, which is either 'white' (pale yellow or light grey) or 'red' (a pinkish brown) is used in building (Pevsner & Williamson 1979, p.46).

In the Lincolnshire Wolds a limited amount of the Lower Chalk is suitable for building, and flint is virtually non-existent although a small number of buildings were constructed using these materials (Pevsner & Harris 1989, p.24).

3.2.1.2 Earth

Earth-walled or 'mud' buildings are mainly found across Leicestershire, Northamptonshire and south-east Nottinghamshire using the ochre-coloured Liassic subsoils, although mud was also used in association with timber stud walling (a technique known as mud and stud) in parts of Lincolnshire. The mud walls were built on either a high plinth of stone or brick. Houses were normally rendered, but farm buildings and boundary walls were usually left unrendered. In contrast with the



cob buildings of the South West Region, for example, the earth buildings of this Region were of poor quality and were usually single storey. Cobbett described the hovels of a Leicestershire village with windows that were no more than bits of glass stuck into the mud walls (Pevsner & Williamson 1984, p.55). Typically these buildings were thatched although this was often replaced (McCann 2004, pp.31–2). Relatively few mud-walled buildings survive. It is probable that many were demolished and replaced by brick buildings or re-fronted in brick during the 19th century reorganisations associated with enclosure.

3.2.1.3 Timber

Much of the East Midlands Region, in particular the belt of limestone that extends from Northamptonshire into Lincolnshire, the Lincolnshire scarplands and the east Leicestershire clay vales, had been stripped of the great majority of its woodland by the 11th century (Roberts and Wrathmell 2000, p. 49; 2002, pp. 24-7). The concentrations of timber-framed buildings in this Region are correspondingly light, and concentrated in the historically well-wooded foothills of the Peak District and the western clay vales (the Derbyshire Peak Fringe, nearby parts of the Derwent and inner Trent valley, and the Mease/Sence Lowlands in particular). Cruck construction extends into this part of the East Midlands, particularly in the Charnwood area, and some crucks have survived in farm buildings.

The principle concentrations of aisled buildings lie to the south and east of the Region. Accordingly, aisled barns are relatively rare in the East Midlands. The few that are found in the Region are predominantly of pre-1550 date and were high-status buildings.

8 Examples of walling materials in the East Midlands Region

- A, B & D The Region offers a range of stones suitable for building that are an important element in creating a sense of local distinctiveness. (A Leicestershire and Nottinghamshire Wolds; B Kesteven Uplands; C Northamptonshire Uplands)
- C Across the southern and eastern parts of the Region cottages, farm buildings, including barns, and boundary walls were built in cob, locally called 'mud', using the Liassic sub-soils. (Northamptonshire Uplands)

- E The clays of the Midlands Plain were widely used for brick-making. Bricks generally replaced inferior timber-framed and earth-walled buildings during the 18th and 19th centuries. (Bedfordshire and Cambridgeshire Claylands)
- F The gable end of a timber-framed barn with later brick infill, dated 1766. (Leicestershire Vales)
- A, B & E © English Heritage / Michael Williams; C © Alison Smith; D & F © Jeremy Lake



9A



9 Examples of roofing materials in the East Midlands Region

- A Straw for thatch was available across many parts of the Region until the enclosure of the open fields of the vales and so it would have been the typical roofing material for most cottages and farm buildings. Thatch remains an important feature of the southern part of the Region, but is rare in the northern half of the Region. (Northamptonshire Vales)
- B Stone capable of being split into slates for roofing was available in the upland parts of the north-west of the Region and in the south-west. (Derbyshire Peak Fringe and Lower Derwent)
- C Clay tiles on brick-walled buildings became the ubiquitous roofing material of the Midland Plain during the late 18th and 19th centuries. (Needwood and South Derbyshire Claylands)
- D Pantiles. The use of pantiles is particularly characteristic of the eastern part of the Region, forming part of a wider distribution of pantiles that extends along the eastern side of England from East Anglia to Northumbria. (Central Lincolnshire Vale)
- E Welsh slate. The use of Welsh slate increased as the railways made transportation easier and cheaper. Slate allowed a lower roof pitch to be used, distinguishing many farm buildings of the period from earlier thatched or tiled buildings. (Derbyshire Peak Fringe and Lower Derwent)

A © Jeremy Lake; B & D © Susanna Wade Martins; C © Bob Edwards;
E © English Heritage / Michael Williams

9B



9D



9C



9E

3.2.1.4 Brick

With clay being readily available across large parts of the Region, brick is a characteristic building material, particularly through the clay vales of south Derbyshire, Nottinghamshire and Leicestershire where brick is the dominant walling material. From the 18th century brick largely replaced the mud and stud and lower-quality timber framing that had formerly been commonplace in these areas. Brick-built barns often have features such as tumbled brickwork at the gables and dentilled eaves.

3.2.2 ROOFING (Figure 9)

3.2.2.1 Thatch

Apart from the areas where stone slates were used, straw thatch was the dominant roofing material across the arable vales of much of the Region (Moir & Letts 1999, p.19). On a large proportion of buildings slate or flat tiles have replaced the thatch (Drury 1963, pp.102–106).

3.2.2.2 Slate

Gritstone is used for roofing slabs in the Dark Peak and South West Peak, while split limestone slate roofs are

also common in the White Peak. Limestone is used for stone slates, for example in Northamptonshire where slates came from Collyweston, and into Leicestershire where Swithland slates are encountered. At the end of the 18th century Swithland slates were the favourite roofing material, even for cottages, in parts of Leicestershire and adjoining parts of Derbyshire and Nottinghamshire (Pevsner & Williamson 1984, p.60). By the mid-19th century Welsh slates were widely used.

3.2.2.3 Tiles

The availability of clays for brick-making also allowed the production of clay tiles, and over large parts of the Region plain tiles or pantiles are characteristic, with pantiles being common in the north-eastern part of the Region in particular; this formed part of a distribution extending into Norfolk and up into north-eastern England and Scotland (Pevsner & Williamson 1979, p.49).

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

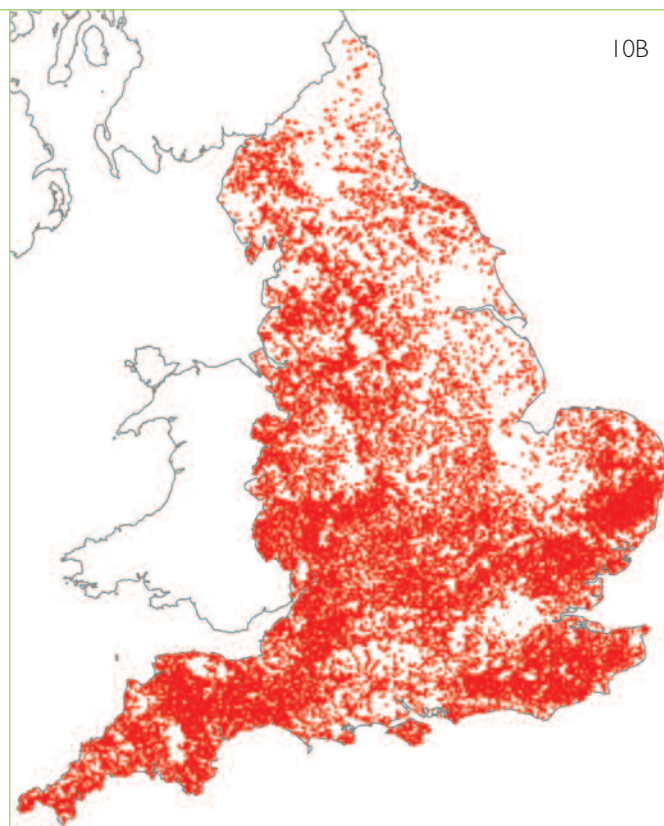
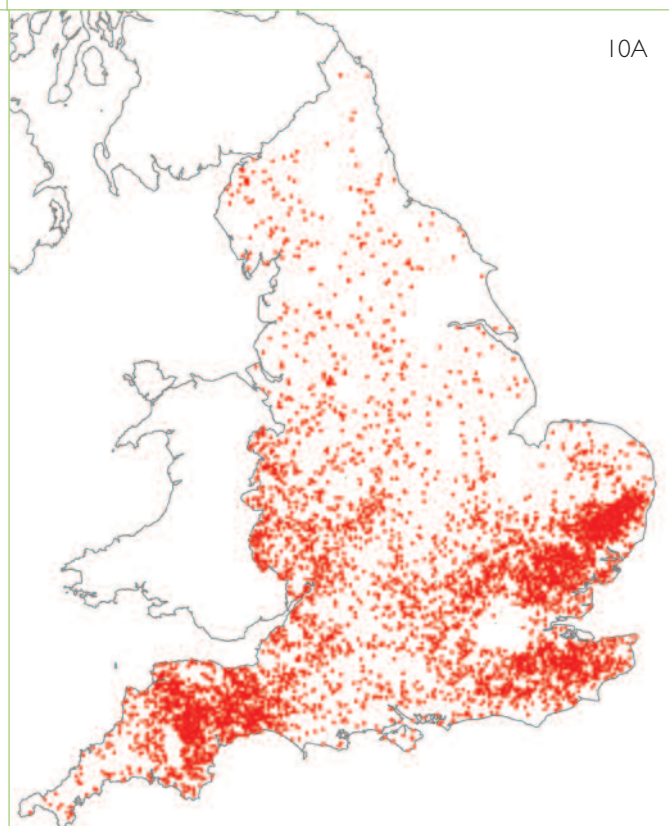
All survivals of this period are of great rarity and significance. The best-known survivals are the great barns of secular and especially ecclesiastical estates. These

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 (left) and 1550–1750 (right). 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. © Crown copyright. All rights reserved. English Heritage 100019088. 2005



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

4.1.2.1 Survival and Value

Substantially complete farm buildings of this period are rare. They will often provide the first surviving evidence for the development and strengthening of regional traditions and building types: for example, the timber-framed West Midlands barns that replaced earlier small cruck barns; the linear farmsteads of the North Pennines; the development of bank barns in Cumbria; the growth of the southern English downland farmsteads with their

associated large barns. The smaller farms of anciently enclosed pastoral areas are the most likely to retain fabric dating from this period, although it is very rare for farmsteads to have more than a barn and house.

4.1.3 1750 TO 1880

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

In the ‘High Farming’ years of the 1840s to 1870s, high-input/high-output systems – based on the availability of imported artificial fertilisers and manures (superphosphates, nitrates, guano and bones) and feeds such as oilcake brought on to the farm – replaced the

'closed circuit' methods that relied on farm-produced feeds and manure. A major development – as observed by the agricultural journalist James Caird writing in the 1850s – was an increased distinction between the intensively cropped landscapes of the eastern half of the country, and the wetter and more pastoral-based economies of the western half.

There were several key drivers behind this development:

- Higher grain prices from 1750, peaking during the Napoleonic Wars (1794–1815), were joined from around 1840 by a steady increase in meat and dairy prices, both the result of population growth and the demands of an increasingly affluent urban population.
- The strengthening of a national market, facilitated by the ever-expanding transport infrastructure (of canals, improved river and road communications and the railways) and the growing importance of middlemen, both of which facilitated the marketing of food.
- Marked increases in land prices from the 1760s. This increased the incentive especially of estates to invest, outgoings on repairs and improvements occupying an increasing share of gross rentals from this period to as much as 25% by the 1850s (Mingay 1989, pp.602–3).
- Increasing interest and involvement by government: for example through the Board of Agriculture set up in 1793 (and which immediately set about the commissioning of its famous county studies in order to gather information on best practice); and from the late 1840s the establishment of loan companies for buildings and drainage, which added to the development of a national banking system.
- Textbook and journal literature such as *The Book of Farm Buildings* by Stephens & Scott Burn (1861), and the examples of best practice 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 policies 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 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 25, 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).

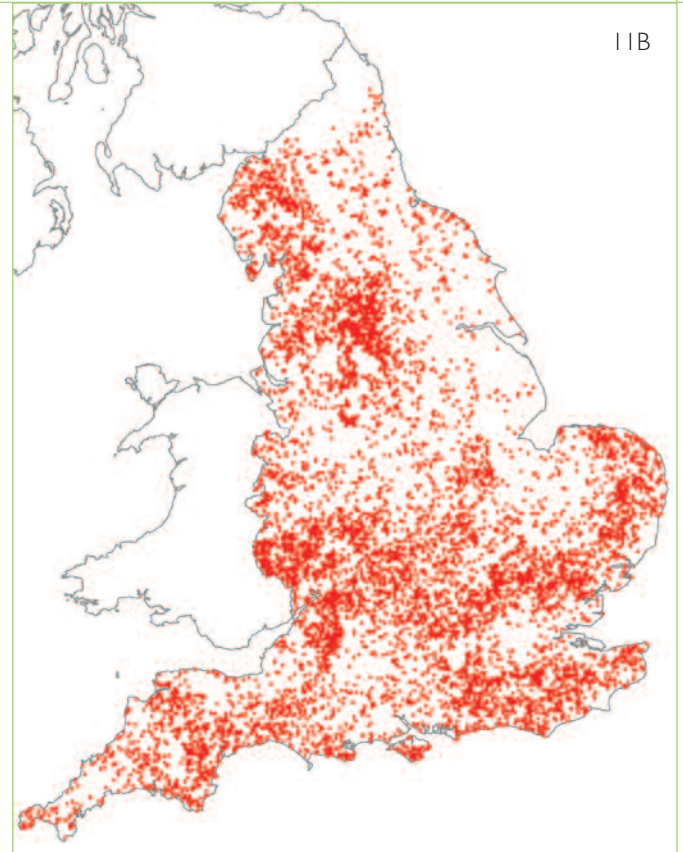
4.1.3.1 Survival and Value

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

11 Distribution maps of listed barns in England, pre-1550 (left) and 1550–1750 (right)

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 Fens 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.

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

4.1.5 1940 TO THE PRESENT

The 1937 Agriculture Act anticipated the need to increase self-sufficiency, and the Second World War witnessed a 60% rise in productivity; this was the result of the growth in livestock numbers, increasing scientific and government control and guidance, more specialised systems of management and the conversion to arable of permanent pasture. The invention of artificial fertilizer (patented by Haber and Bosch in 1910) enabled otherwise uneconomic land to be brought into production, and finally made redundant earlier forms of fertilizer. The National Farm Survey of 1941–3 (Barnwell 1993) attested to the long years of neglect of the depression, less than half of the building stock being classed as in fair condition. The Agriculture Act of 1947 heralded the intensification and increased specialisation of farming in the post-war period, accompanied by the development of government and industry research and guidance. From the mid-1950s, strongly influenced by American models, there emerged a growing body of trade and advisory literature. The first of these, produced in 1956, highlighted the dilemma of 'old buildings too good to pull down but not suitable for their new purposes' (Benoy 1956). The Government provided grants to cover the capital cost of new building under the Farm Improvement Scheme (introduced 1957). The introduction of wide-span multi-purpose sheds in concrete, steel and asbestos met increasing requirements for machinery and for the environmental control of livestock and on-farm production, particularly of milk. The national stock of farm buildings grew by a quarter between 1945 and 1960 alone. The Agricultural Research Council's *Farm Buildings Survey of England* (published 1967) estimated that the average farmstead contained 6 pre-1914 buildings, 2.4 from 1918–45 and 2.5 built since 1945.

4.2 FARMING IN THE EAST MIDLANDS

The East Midland counties present contrasting landscapes of lowland vale, moorland, former forest, marsh and fen which have specialised in sharply contrasting types of agriculture.

The clay vales of Derbyshire, Leicestershire, Nottinghamshire and Northamptonshire made up the majority of the farmland on which the classic Midland open-field systems, worked from nucleated settlements, predominated. The township fields that dominated the landscapes of the Central Province (see 2.3.2) have left their mark in the curving boundaries of piecemeal enclosure or in fossilised ridge-and-furrow earthworks under permanent pasture. Within these broadly similar areas enclosure of the common fields was underway in some parts by the 15th century – often in association with the leasing out of estates, the development of gentry farms and estates and the expansion of grazing land – and various types of agriculture were practised. In some parts of the Region enclosure was accompanied by depopulation, the result in landscapes such as High Leicestershire and the Lincolnshire Wolds being high numbers of deserted medieval settlements.

The continuation of open-field farming in much of the clay vales can partly be explained by the large number of freeholders and interweaving of landownership and tenantry, making it difficult to arrive at an agreement for enclosure. In Laxton (Trent and Belvoir Vales), where some strip farming still continues, there were 57 freeholders in 1732 owning more than half of the parish (Mingay 1984, p.116). Here the major period for enclosure of the open fields was after 1750; for example, a third of Nottinghamshire was enclosed between 1759 and 1860. Much of the enclosure – particularly in the pre-1790 phase – was for pastoral farming, both for dairying and for the fattening of cattle on summer pastures (Williamson 2002, pp.29–52). Pitt reported that before enclosure, Leicestershire was mainly a corn county, but as enclosure created fields for stock the county could ‘no longer keep itself in bread’. In the south-east and middle of the county there were many farms with no arable (Pitt 1813, pp.80, 87). Dairies, feeding and breeding were all important activities, with the Bakewell brothers’ farm at Dishley, home of their improved Leicester sheep, being the most famous.

The graziers were recognised as the wealthiest farmers in the region, many of whom were owner-occupiers. Pitt noted the contrast between the brick houses and premises of the well-off owner-occupier breeders and graziers and the older timber-framed houses of the poorer farmers in the villages where most of the small farmsteads remained after enclosure (Pitt 1813, p.22). The result can be strong differences in farmstead plan (see 5.3).

Although the Region is most closely associated with open-field farming up to the 16th century there were extensive areas of forest, most of which had been royal forests subject to Forest Law. The forests of Rockingham (JCA 92), Salcey and Whittingham, Northamptonshire, lay on cold, waterlogged clays, whilst the forests of Charnwood (JCA 73) in west Leicestershire and Sherwood in Nottinghamshire (JCA 49) lay on infertile sandy soils. Strong population growth in the 16th and 17th centuries was linked to both the development of industries – many of the Northamptonshire stocking knitters were based in the forest areas – woodland clearance and enclosure (Thirsk 1967, pp. 96 and 98). The forest areas also experienced great changes – further clearance and enclosure, linked in Sherwood and Rockingham – after 1750. Within the Peaks and the Peak Fringe area farmers were increasingly turning to the rearing of cattle in the 17th and 18th centuries (Hey 1984, pp.136–7). A vital feature of the upland farming economy was the huge proportion of inter-commoned grazing on the moorlands, and farms were being created out of the moorland sides between the 15th and 19th centuries – typically set within their distinctive ‘intakes’ of enclosed land. Many smaller farmers were also able to obtain a second income through local industries such as lead mining, coal mining and quarrying. In the northern part of the area men turned to metalworking: in 1672 over 100 smithies were recorded in the parishes south of Sheffield (Mingay 1984, p.134).

The London market was influencing farming in much of the Region by the 18th century. Sheep, cattle and cheese were sent to London and there were major horse markets at Mansfield, Nottingham, Newark, Leicester and Northampton (Mingay 1984, p.98). Derby developed as a major malting centre (Mingay 1984, p.141). Farming in the clay vales was essentially mixed, with stock fattening forming a significant part of farming income. Dairying was also important, particularly near the towns, with cheese being produced in the Vale of Trent, and Stilton in the Vale of Belvoir, and Melton Mowbray being an important cheese market. Red Leicester cheese was sold in London and other manufacturing towns of the Midlands and the north (Mingay 1984, pp.99–101). Only in the remoter parts of Derbyshire and Lincolnshire was trade with London less influential. The arrival of the railways had a profound impact on farming, stimulating the production and export of wheat from parishes on the fen edge, for example (Barnwell & Giles 1997, p.44).

As grain prices fell, the period from 1870 to 1939 saw a further gradual decline in tillage and increase in pasture; for example, the cultivated area in Leicestershire fell by half between 1872 and 1914. Only in Lincolnshire was there no sizeable reduction (Walton 2000, p.393). An increase in dairying could be made possible by the expansion of the railway network. Cheese factories

opened in Derbyshire in 1870–75 and soon became depots for liquid milk, only producing cheese when there was a summer surplus, stimulated by a policy of low carriage charges by the Midlands Railway. By 1920 Leicestershire and Derbyshire were sending milk to London. In contrast, Nottinghamshire never became a dairying county (Drury 1963, p.150) although previously dairying for the town of Nottingham had dominated the agriculture of the area around it (Caird 1852, pp.198, 210–11). And although there was some dairying capacity in the Lincolnshire Marshes, the pricing policy of the Great Northern Railway limited the market and thus the development of liquid milk production (Walton 2000, p.399). In other areas, such as north Leicestershire, the limited grain produced was fed to yard-based cattle (Sturgess 1966, p.111). Many of these areas were well placed to weather the storm of the post-1870s depression.

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. – after the area heading or, if they approximate or relate to groups of JCAs, in the first line of the text. The sources for them are diverse, and include Historic Landscape Characterisation where completed, work in progress on developing historic profiles for the Joint Character Areas (see www.cqc.org.uk) and sources listed in the bibliography. They are generalised statements, within which there may again be important differences in farming practice, settlement and estate patterns and landscape character.

For Bedfordshire and Cambridgeshire Claylands (JCA 88) and Yardley/Whittlewood Ridge (JCA 91) see East of England.

For Yorkshire Southern Pennine Fringe (JCA 37) and Southern Magnesian Limestone (JCA 37) see Yorkshire and the Humber.

For Humberhead Levels (JCA 39) see Yorkshire and the Humber.

4.2.1 Nottinghamshire, Derbyshire and Yorkshire Coalfield (JCA 38)

The area has a long history (from the medieval period) of rough grazing and pastoral farming in the west (sheep, beef and some dairying) giving way in places to arable cultivation in the east. Market gardening developed around the urban centres which expanded rapidly from the late 18th century. Many of the area's small and irregular fields, many probably assarted from woodland

or were developed in the 17th and 18th centuries as miners' / weavers' subsistence plots surrounding villages. Medieval settlements were also characterised by open-field farming, much of which was enclosed by the 18th century.

4.2.2 Lincolnshire Coast and Marshes (JCA 42)

The dispersed settlement of the Outmarsh zone, which is characterised by irregular patterns of roads and fields, includes numerous holdings that originated as the grange farms of the area's abbeys and priories. The area had generally limited arable (although there are traces of medieval ridge and furrow) but benefited from the long-standing practice of fattening cattle from Wolds farms, with extensive grazing for sheep (Thirsk 1967, pp. 35–6; Bennett & Bennett 1993, p. 92). Enclosure was well advanced by the 17th century, and linked to the steady expansion of pasture (Johnson 1963, p. 99).

The inland area (the Middle Marsh, which rises towards the Wolds) was dominated from the medieval period to the 18th century by open fields, interspersed with some isolated farmsteads of medieval or earlier origin. However, the fieldscapes of the Middle Marsh mainly reflect the reorganisation of these fields into large-scale regular enclosure patterns related to isolated farmsteads in the 18th and 19th centuries.

4.2.3 Lincolnshire Wolds (JCA 43)

The Lincolnshire Wolds lie between the Lincolnshire Coast and Marshes and the Central Lincolnshire Vale. Enclosure for sheep pastures began in the 14th century resulting in the depopulation of some villages. The Wolds have the highest concentration of Lincolnshire's deserted medieval village sites, many in highly visible locations, many outlived by a single farm or manor house carrying the village name. Depopulation continued in the 17th century when the population fell by around 25%, although enclosure in this period was often associated with improving arable rather than conversion to pasture: mixing fodder crops for the sheep with barley fields fertilised by their manure. (Holmes 1980, p.17). Even so, the pre-1750 landscape was broadly still one of open fields, common waste and nucleated villages, although there were some isolated farmsteads of medieval origin (Roberts & Wrathmell 2000, pp.48–9).

From the later 18th and 19th centuries, enclosure transformed the landscape and engrossing of small farms disrupted the social structure of villages, creating fewer, but more substantial tenant farmers based on a sheep/corn system of agriculture. Estate farmsteads, such as those of the Brocklesby Estate and Lord Yarborough's 30,000-acre estate, served some of the largest holdings in England.

The farmers of the Lincolnshire Wolds probably felt the agricultural depression of the late 19th century more severely than other farmers in the Midlands, although the effects of low corn and wool prices did not have as great an impact on this capital-intensive farming area as was expected. This was mainly due to the substitution of mutton and barley for wool and wheat (Walton 2000, p.394).

4.2.4 Central Lincolnshire Vale (JCA 44)

In Lincolnshire, the limestone ridge of the Lincoln Cliff and heath is divided from the chalk Wolds to the east by the central clay vale. To its north the river Ancholme drains into the Humber and to its south the Witham drains through the fens into the Wash. The mixed arable and grazing landscapes of the earlier medieval period gave way to extensive enclosed pasture and sheep/corn farmland from the 14th century onwards. The dominance of estates in the central clay vale between Lincoln and Market Rasen resulted in the early spread of regular medium-scale enclosure. Large-scale 18th- and 19th-century enclosure characterises the area bordering the fens to the south and the drained carrs (seasonally waterlogged land) between Market Rasen and Brigg.

4.2.5 Northern Lincolnshire Edge with Coversands (JCA 45) and Southern Lincolnshire Edge (JCA 47) (Figure 12)

This limestone ridge, which runs from the Humber Estuary to Grantham, is divided in two by the river Witham which flows through Lincoln. The expansive top of the Lincolnshire Edge was largely unsettled heath until the late 18th century, providing common pasture for flocks otherwise folded on the fallow lands below. Linear parishes across the heath reflect this – aligned east to west either side of Ermine Street to take advantage of both the open grassland and the settled farmland across the eastern dipslope and below the western cliff. The high heath itself and the Coversands to the north of Lincoln was transformed by later 18th and early 19th century enclosure for improved pasture and sheep-corn farming, although earlier enclosure persists around the smaller settlements. Here profitable arable farms were created, provided with 'new farm houses, barns and offices' (Young 1813, p.99). Again there are a large number of deserted village sites and while open fields dominate the area, there are some earlier enclosures and ancient isolated farmsteads. The field systems to either side of the Edge, along the western scarp (the so-called Lincoln 'Cliff') and dipslope, were commonly subjected to enclosure and rationalisation by the larger landowners from the 14th century onward. Village agriculture continued across the dipslope into the post-medieval period, fragmenting to varied extents depending on the level of piecemeal or general enclosure instigated by the major landowners.

4.2.6 The Fens (JCA 46) (Figure 13)

Unlike the Cambridgeshire fens, which were mostly the property of large owners, ownership of the Lincolnshire fens was fragmented and most of the farmers were small scale, with vegetables and market gardening being important. In the 16th century the marsh farmers were generally better off than those in other parts of Lincolnshire but by the 18th century they were generally the poorest (Holmes 1980, p.26). This was largely due to the fact that the rich grazing areas available on the salt marshes along the coast – now marked by small, mainly pastoral fields – were often rented out to wealthier farmers on the Wolds, pushing up rents and forcing out the small farmers (Mingay 1984, p.111).

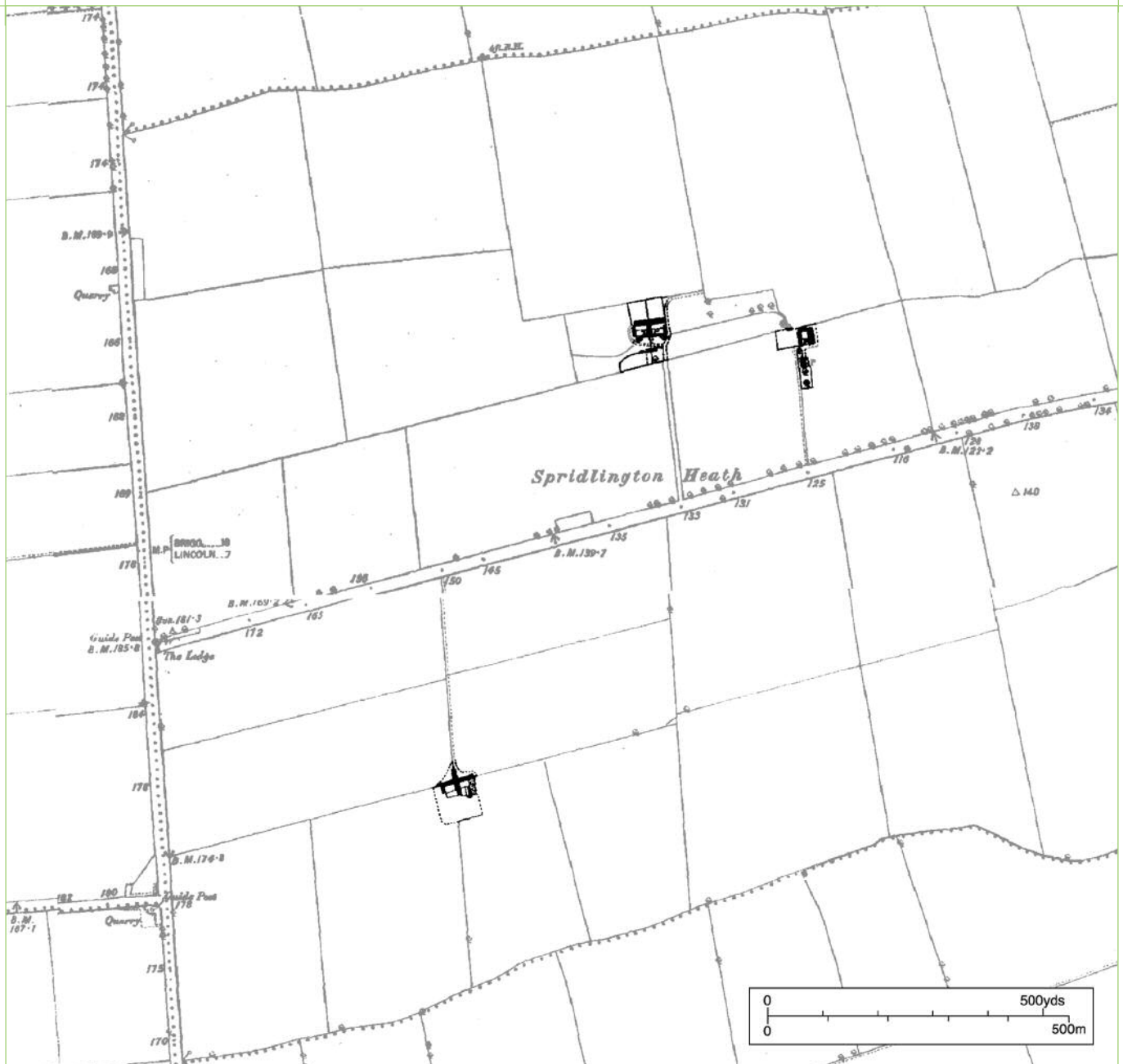
As occurred in the forest areas of the Region, depopulation caused by enclosure on areas such as the Lincolnshire Wolds resulted in an increase in population in the fens where manorial controls were weak, there were generous common rights and opportunities to earn additional income through activities such as reed cutting or fishing were possible (Holmes 1980, p.17). Intercommoning also prevented the initial plans for drainage. The first attempt at drainage on the Isle of Axholme encountered both technical difficulties and local opposition. However, during the 17th century several drainage schemes of large areas of fen were carried out by owners such as the Duke of Bedford and the Earl of Lindsey, who drained 30,000 acres of common land in Kesteven between 1631 and 1634. By the mid-19th century about 250 wind pumps and 50 steam engines had enabled the drainage of much of the area into some of the most fertile land in the British Isles. Few farm buildings survive, but the scale of the farmhouses indicates that the farms were not as large and prosperous as in the Cambridgeshire fens.

4.2.7 Trent and Belvoir Vales (JCA 48) (Figure 14)

The effects of feeding a growing industrial population in the 18th and 19th centuries are evident in the countryside, in the development of dairying and the expansion of the market towns served by the railways. The piecemeal semi-regular enclosures of the 16th, 17th and early 18th centuries are widespread and highly varied in composition, with the greatest survivals in the area of south Nottinghamshire along the northern edge of the Vale of Belvoir; and the northern part of the Vale of Belvoir (Honeybone 1987, p.55). Pasture and dairying was particularly dominant in the Vale of Belvoir; mixed husbandry extending across the remainder of the area. Large-scale and regular enclosure, dating from the late 18th and early 19th centuries, is found mainly on the heaths and sands between Newark and Lincoln and the mid Nottinghamshire area; for example, George Neville of Subton, near Newark, enclosed 700 acres of creating five farms, each with brick buildings (Lowe 1798, p.28).

12 Farmsteads in the landscape: Spridlington, Lincolnshire (North Lincolnshire Edge with Coversands)

Spridlington is a parish on the Lincolnshire Wolds where nucleated settlement is characteristic. The village of Spridlington lies to the east end of a long, narrow parish that typically extends up and over the Lincolnshire Edge. Almost all the parishes in the locality used Ermine Street, the Roman road that runs from north to south, as the parish boundary, indicating that the organisation of the landscape into estates post-dates the road. The boundaries of these estates are largely reflected in the parish boundaries. Arable land was sited close to the village. Heathland at the western end of the parish provided common grazing until its enclosure from the 18th century. The distance of these new enclosures from the village, where the farmsteads were clustered, resulted in the development of new farmsteads set within their blocks of fields. These farmsteads were typically developed into regular courtyards although these courtyard plans are not always of a single build. *Based on OS 1st Edition map 1843-1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024*



4.2.8 Sherwood (|CA 49)

Cheese was the most important forest product in the early 18th century and there were some wealthy farmers even here. The forest was largely heath and sheepwalks, with small areas of arable, often temporary cultivations within the common that were left to grass after being cropped for five or six years. Settlement expansion and the predominant pattern of large-scale and regular enclosure here is primarily a feature of the mid-18th century onwards, reflecting the clearance of woodland and enclosure of sheep and cereal farms, followed by the development of coalmining in the 19th

century. Large estate farms of 300 to 500 acres based on sheep and cereals were created with their accompanying brick buildings (Corringham 1845, p.3).

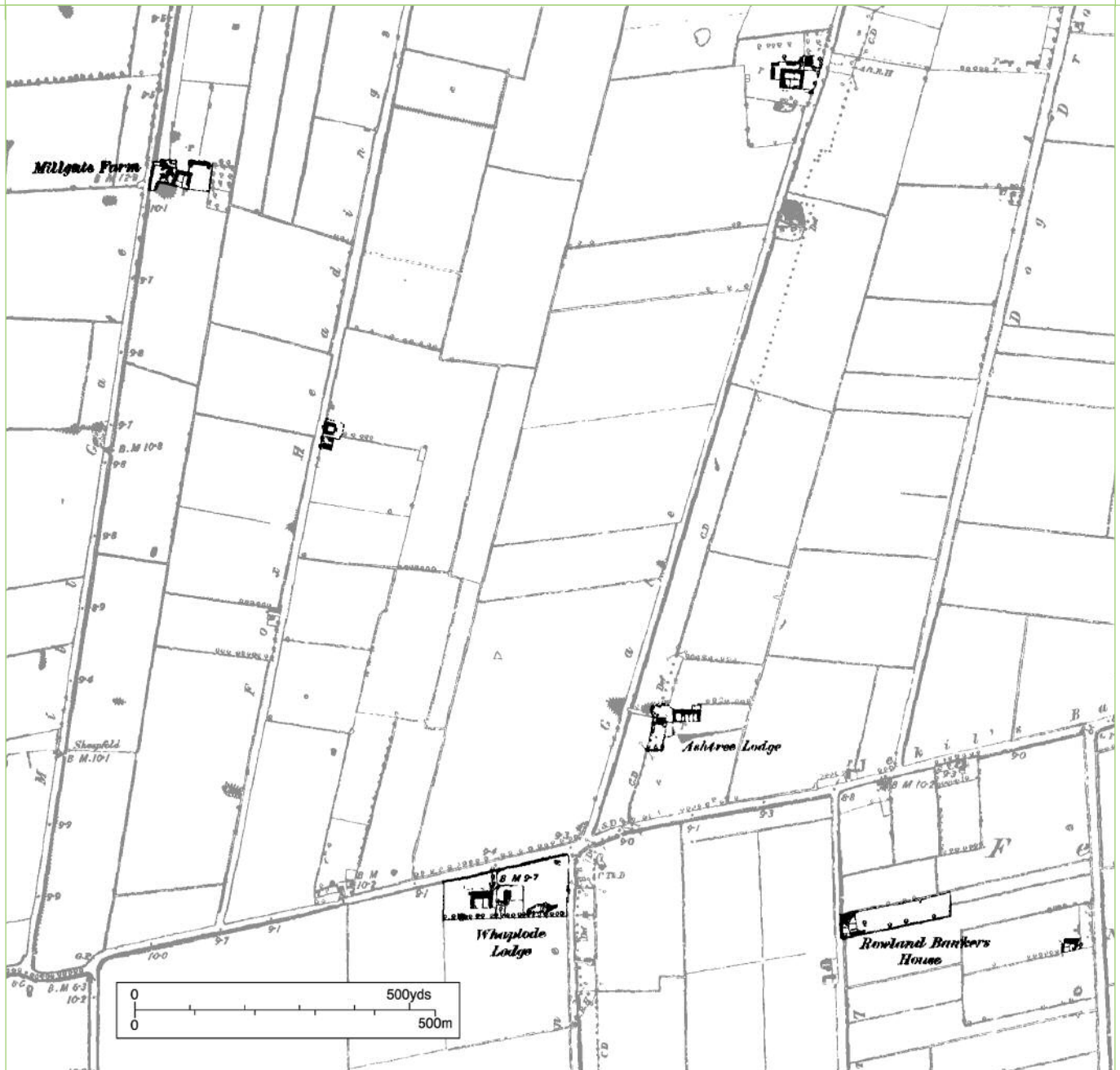
4.2.9 Derbyshire Peak Fringe and Lower Derwent (ICA 50)

The valleys, including the open fields around nucleated villages, and valley sides had been largely enclosed by 1750. Enclosure of the open moor on the fringes of the Peak and of common land, also well advanced by this date, was largely completed in the late 18th and early 19th centuries and resulted in many more new

13 Farmsteads in the landscape: Holbeach St John's, Lincolnshire (The Fens)

Large-scale reclamation of the fens, driven by large landowners such as the Duke of Bedford, began in the mid-17th century. The South Holland area of fen remained largely as marshland until the passing of the South Holland Drainage Act in 1793, which allowed the cutting of the South Holland Main Drain and the creation of numerous feeder drains. Despite these efforts the fenland only developed into summer grazing land. Improvements to the sluice of the drain at its junction with the River Nene were made during the 19th century, but it was not until 1937 that sufficient improvement was made to allow this land to become suitable for large-scale arable use. In the late 19th century the farmsteads ranged from small to medium and generally had regular courtyard layouts facing south. Very few pre-1920 buildings survive except for some small brick and pantile houses. Many boundaries in this area have been removed post-1950 to create large arable 'prairie' fields. Based on OS 1st Edition map 1843–1890.

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farmsteads being built within the new intakes, as well as isolated field barns. Arable was concentrated in the valleys, and by the 19th century cattle rearing to supply meat to the growing urban centres nearby had grown in importance.

4.2.10 Dark Peak (JCA 51)

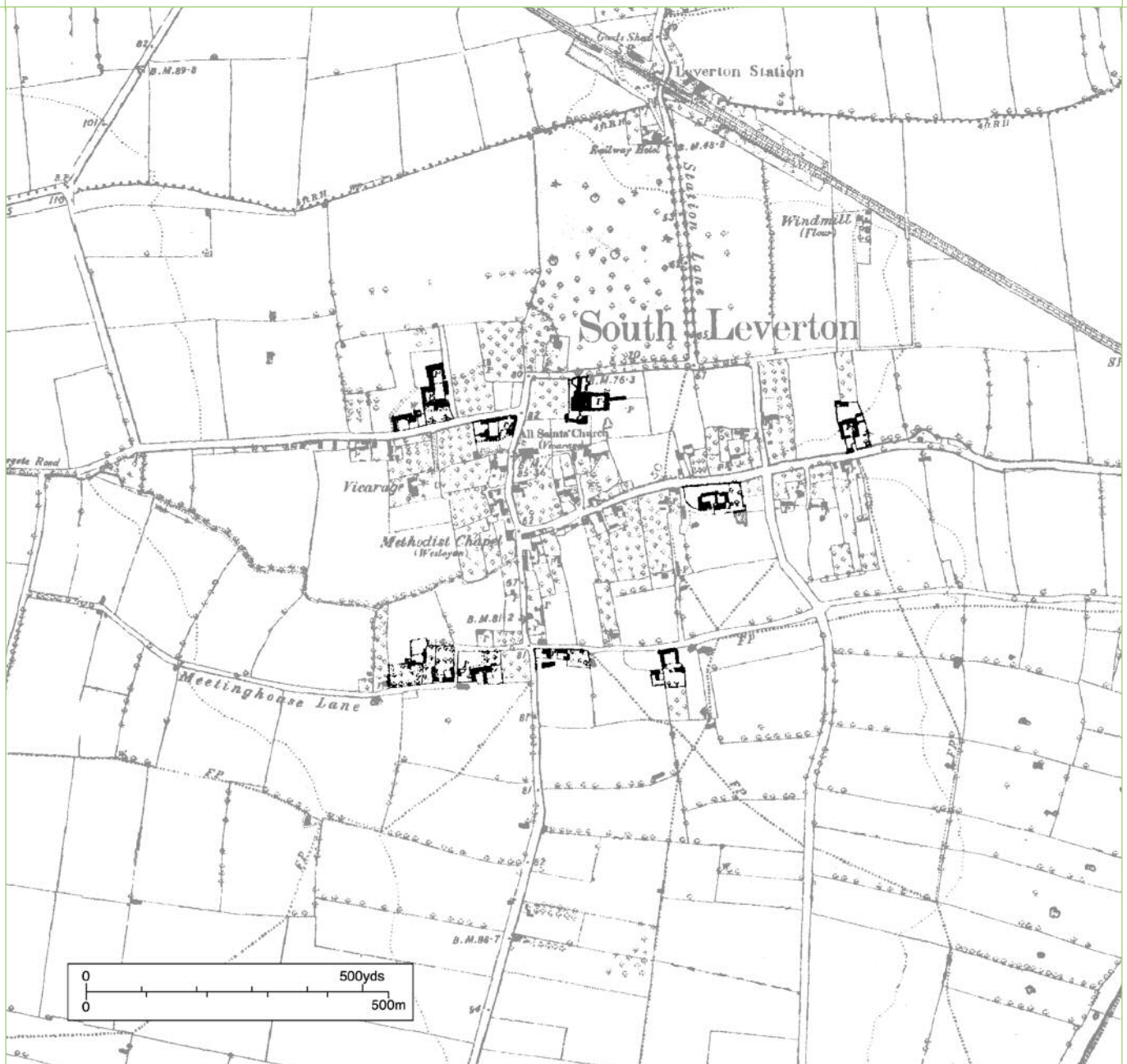
This area has small hamlets and many individual farmsteads of medieval origin surrounded by ancient and post-medieval patterns of enclosure (Barnatt & Smith 2004, p. 78). Mixed agriculture traditionally occupied the

valley sides and floors, and cattle rearing was dominant by the 19th century. Inter-commoned summer grazing took place on the moorland tops, accessed by trackways from valley bottoms. Earlier open-field farming is reflected in the enclosure of long, slightly sinuous fields around valley settlements (for example, at Castleton in the Hope valley and in Edale), some (as at Chatsworth Park) including fossilised ridge and furrow (Barnatt & Smith 2004, p. 81). The late 18th- and 19th-century enclosure of the open moor and common was undertaken by large landowners, such as the Dukes of

14 Farmsteads in the landscape: South Leverton, Nottinghamshire (Trent and Belvoir Vales)

South Leverton lies in the Trent and Belvoir Vales on the Lincolnshire border. The fields surrounding the village present a mixture of forms. Those immediately west and east of the village mainly have slightly curving boundaries reflecting the former strips of the open fields, whilst the fields south of the village predominantly have straight boundaries, almost certainly the result of enclosure of the open fields in 1797. After enclosure most farmsteads remained in the village, lining the streets of the irregular row plan. At least some of the farmsteads saw substantial investment in the construction of large brick barns in the late 18th century. Ranges for cattle were added to some farmsteads in the mid-19th century creating courtyards.

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Devonshire. In addition to the grazing of sheep, the heather moorlands were conserved for grouse shooting from the early 19th century.

4.2.11 White Peak (JCA 52) (Figure 15)

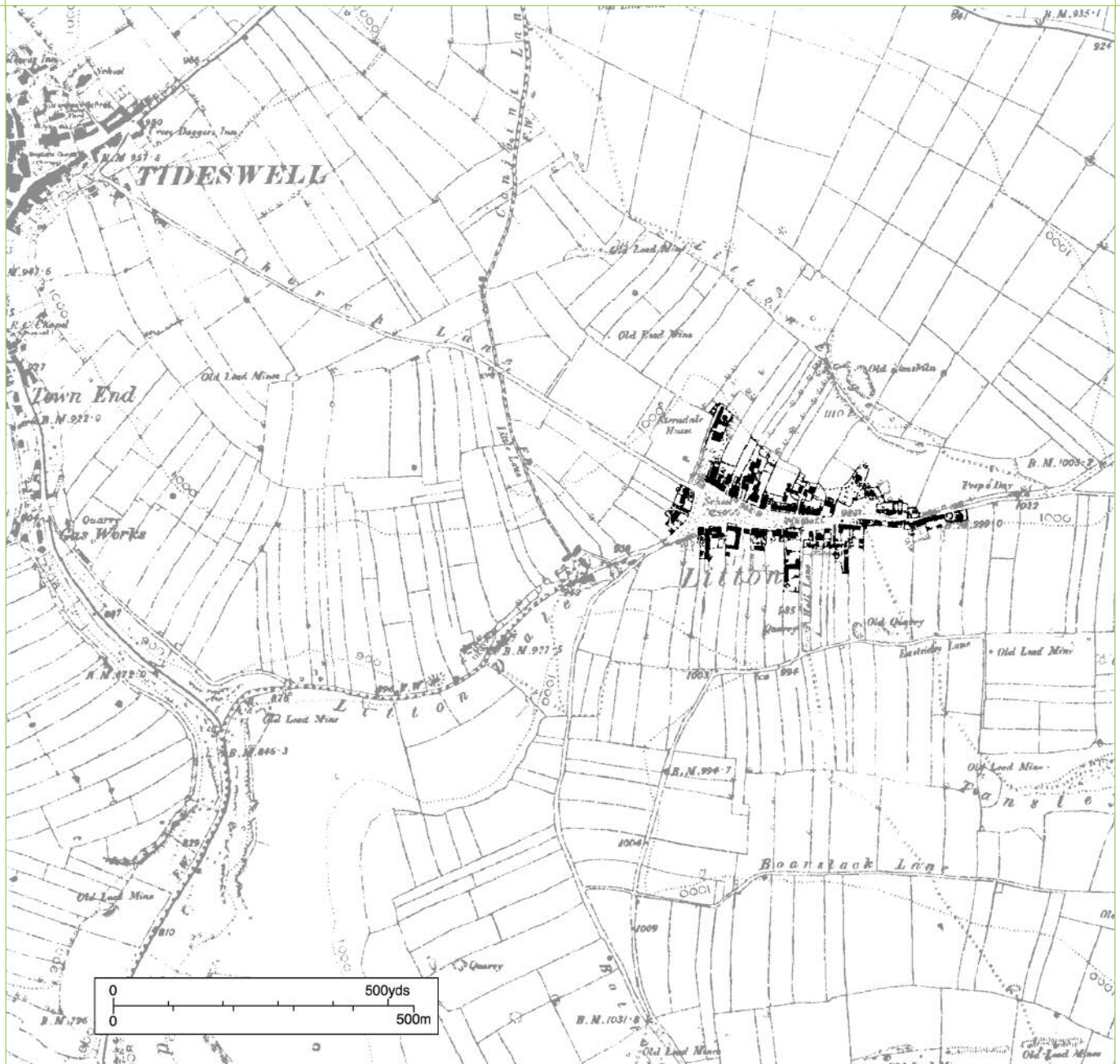
On the limestone plateau of the White Peak, which in contrast to the Dark Peak has more fertile and loamy soils, there were mostly small, nucleated villages surrounded by their open common fields, interspersed with the anciently enclosed and regular fields of medieval grange farms. Although these strips indicate arable farming, it is probable that livestock was always more important. Enclosure of the narrow strips with stone

boundaries has resulted in distinctive landscapes. The enclosure of the open fields was underway by the 17th century, whilst enclosure of the open moor and common had begun by the 16th century, sometimes resulting in large regular fields that resemble parliamentary enclosure. The enclosure of moor and common also resulted in many new farmsteads being built within the new in-takes. (Barnatt & Smith 2004, pp.68–85).

Sheep farming, in combination with arable cropping, was dominant from the medieval period. By the 19th century cattle rearing, to supply meat to the growing cities nearby, had grown in importance although intensive dairy

15 Farmsteads in the landscape: Litton, Derbyshire (White Peak)

The village of Litton is surrounded by a landscape of fossilised open field strips that have largely survived to the present day because the boundaries created at enclosure are dry stone walls. The enclosure of the open fields in the Peak District was underway by the 15th century and the new fields were largely turned over to pasture. To the north-east of the village is a large area of regular, rectangular fields on land that gently falls away from the village. This field pattern extends beyond the parish boundaries to both east and west and must represent the late enclosure of common land. Within the village itself were many small farms, often consisting of small linear ranges, including laithe-type steadings with a house and combination barn under one roof, some of which may have been occupied by part-time farmers who combined agriculture with employment in the local lead-mining or quarrying industries or were involved in stocking making which flourished in the 18th century. Based on OS 1st Edition map 1843–1890. © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024



farming on improved grassland is now the dominant land cover. Farms were considerably larger in the non-mining west in contrast to areas where mining provided by-employment.

4.2.12 Needwood and South Derbyshire Claylands (JCA 68)

In south Derbyshire dairying and rearing was of greatest importance, with 90% of the whole county under pasture in the 1850s (Rowley 1853, p.65). The western side of the JCA retains much of the irregular piecemeal enclosure patterns associated with clearance

and colonisation from the 12th century onwards, frequently associated with and best preserved within the patterns of river valleys. North of the River Dove the landscape is dominated by large-scale irregular enclosure, much of which predates the 18th century – the open fields of the medieval period giving way early to pastoral enclosure, which has often been amalgamated and enlarged since.

To the east, and especially within the area of the former Needwood Forest, large-scale and regular enclosure replaced woodland and heath in the early 19th century.

4.2.13 Trent Valley Washlands (JCA 69)

This area extends along the Trent from north-east of Birmingham to just south of Nottingham. Its extensive pastures were nourished by the seasonal flooding of the river margins. Stock fattening and dairying formed a significant part of farming income, and grew further in relation to the demands of the developing urban centres in the 19th century. Cheese was a particularly important product. This mixed economy maintained numerous small village farms, and a pattern of piecemeal regular and irregular enclosure, which left little room for the wholesale general enclosure seen elsewhere in the East Midlands. Later enclosure did however prompt the amalgamation of farms and the development of some new red brick farmsteads set out in the fields for the wealthier graziers and larger arable concerns.

4.2.14 Melbourne Parklands (JCA 70)

This area, located between the Trent Valley to the north and the Charnwood Valley to the south, is dominated by the influence of its large estates and by large-scale and regular enclosure of the 18th and 19th centuries, although there are extensive areas of earlier enclosure. Mixed farming was predominant.

4.2.15 Leicestershire and South Derbyshire Coalfield (JCA 71)

The area was predominantly common grazing land in the medieval period with limited arrangements of arable open fields surrounding the scattered medieval villages. The open fields were mainly enclosed before the end of the 16th century, fostering the rearrangement of farmsteads within the villages. The enclosure of the wider heath lands and commons, underway from the 17th century, reached completion in the late 18th and 19th centuries under Parliamentary Acts and led to the establishment of some isolated farms. The pre-18th-century rural economy included some small-scale mining, stone cutting, lime burning and other minor industries alongside farming. However, industry and agriculture became increasingly specialised and separate as the scale of the coal and related industries grew and their workforces provided a ready market for agricultural produce.

4.2.16 Mease/Sence Lowlands (JCA 72)

A history of mixed farming, biased toward livestock, led to some early enclosure, especially within the developing estates of the 16th and 17th centuries, but much of the area remained either under communal open fields or as common pasture well into the 18th century.

Widespread enclosure swept the area in the late 18th and early 19th centuries, taking in heath and commons as well as the old township fields, and replacing many of the village farm buildings with new red brick farmsteads.

4.2.17 Charnwood (JCA 73)

The agricultural history of Charnwood is principally pastoral and, until the mid-18th century, based around the movement of stock between narrow village pastures and extensive areas of unenclosed upland grazing and wood pasture. The nucleated villages operated variations on open-field arable, although the growing market value of dairying and cheese manufacture saw many areas of ridge and furrow cultivation laid to grass and enclosed from the 15th century onwards (Thirsk 1967, pp.94–5). The upland heaths and the high ground of the sandy forests were largely enclosed for the first time in the later 18th and early 19th centuries to support the expansion of livestock and dairy farming, a practice reflected in the regular rectilinear fieldscapes and the presence of isolated farmsteads.

4.2.18 Leicestershire and Nottinghamshire Wolds (JCA 74)

In the south of the Region the chalk has been washed away to bring clay and sandstone to the surface to form the clay Wolds. These lands extend across south Nottinghamshire, east Leicestershire and north-west Northamptonshire, and here grazing was more important than arable before 1750. On the hilltops woodland survived and sheep were kept, often in flocks of up to 100. At night the sheep would be driven down onto the arable fallows where barley was the most important crop (Mingay 1984, p.103). Enclosure resulted in the open-field arable being converted almost entirely to pasture.

Sheep grazing overtook large parts of the Wolds and the Wreake Valley from the 15th century onwards, but in many areas, especially along the Wreake Valley and fringes of the upper Wolds, open-field agriculture continued well into the 18th century.

The upper wolds are dominated by regular patterns of medium- to large-scale general enclosure developed in the late 18th and 19th centuries. This pattern also characterises much of the Wreake Valley. Older patterns of enclosure remain unaltered along the steeper slopes and narrow river valleys.

4.2.19 Kesteven Uplands (JCA 75)

Enclosure came early to many parts of the area as a consequence of the burgeoning late medieval wool and sheep/corn economy. This is also reflected in the number of 16th- and 17th-century manor houses and country estates, and deserted medieval settlements. Large-scale and regular enclosure, especially across the uplands to the south and west and within the wider vales, took place in the late 18th and early 19th centuries.

4.2.20 Northamptonshire Vales (JCA 89)

A history of mixed farming, rather biased toward

livestock, led to some early enclosure, especially in combination with the wool industry (Thirsk 1967, p.92) and within the developing estates of the 16th and 17th centuries, but much of the area remained either under communal open fields or as common pasture well into the 18th century. The greater part of the area is dominated by the patterns of general enclosures brought about in the late 18th and early 19th centuries.

4.2.21 Rockingham Forest (JCA 92)

The landscape of mixed assarted woodland, open-field cultivation, waste and commons persisted up to the late 18th century despite sporadic early enclosures of the open fields and forest clearances – much linked to the conversion of arable into pasture. Large areas of the Forest were felled or enclosed from open fields after 1750, linked to the enlargement of farming estates. Larger arable farms developed on the limestone plateau

and the more permeable soils of the valleys (Foard, Hall & Partida 2005).

4.2.22 Northamptonshire Uplands (JCA 95)

Parts of the Northamptonshire Uplands present a similar picture to the other Wolds landscapes of this Region, with nucleated villages being subject to depopulation and the open-field agriculture subject to enclosure and replacement by grazing lands for sheep from the 15th century. The hard-worn and fragile fertility of these upland soils required much effort to keep in good heart and, following the demographic shifts of the late 14th century, arable farming was gradually yet widely replaced by sheep farming. Tenant and freehold graziers of this period tended to maintain or improve village farmsteads. The 18th and 19th centuries saw the remainder of the land enclosed and the creation of large arable farms such as those of the Duke of Grafton.

5.0 Farmstead Types

5.1 NATIONAL OVERVIEW

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

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

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

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

Local tradition and status were the principal reasons for whether the house was accessed through the yard and buildings were attached, or whether the house

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

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

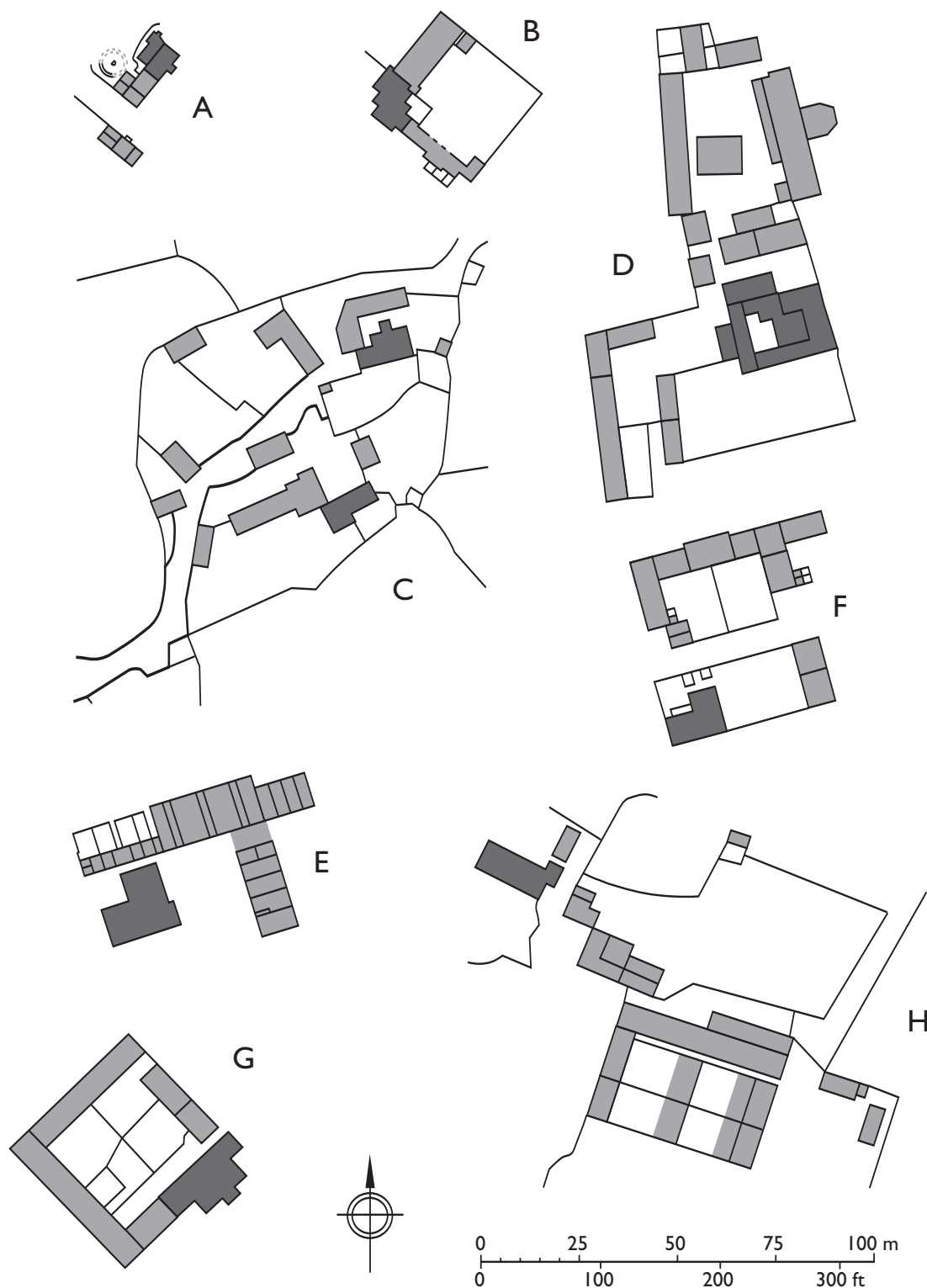
16 Farmstead plan types (Farmhouses are shaded darker)

- A Linear plan. House and farm building attached and in line. This is the plan form of the medieval longhouse but in upland areas of the country in particular it was used on small farmsteads up to the 19th century.
- B L-plan including the farmhouse. Such plans are usually either a development from a linear plan or resemble a small regular courtyard plan (see E–G, below).
- C Dispersed plan. Within this small hamlet the farm buildings of the two farmsteads are intermixed, with no evidence of planning in their layout or relationship to the farmhouses. Dispersed plans are also found on single farmsteads where the farm buildings are haphazardly arranged around the farmhouse.
- D Loose courtyard. Detached buildings arranged around a yard. In this example the yard is enclosed by agricultural buildings on all four sides with the farmhouse set to one side. On smaller farms the farmhouse

may form one side of the yard, which may have agricultural buildings to only one or two of the remaining sides.

- E Regular courtyard L-plan. Two attached ranges form a regular L-shape. The farmhouse is detached from the agricultural buildings.
- F Regular courtyard U-plan. The yard, in this example divided into two parts, is framed by three connected ranges. Again, the farmhouse is detached.
- G Full regular courtyard. The yard is enclosed on all sides by buildings including, in this example, the farmhouse. Other examples are formed by agricultural buildings on all sides with the farmhouse built to one side.
- H Regular courtyard E-plan. This plan form (and variations of it with additional ranges) may be found on some of the larger planned farmsteads where livestock were a major part of the agricultural system. Cattle were housed in the arms of E, the 'back' of which provided space for fodder storage and processing.

Drawn by Stephen Dent © English Heritage



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

5.1.1 LINEAR PLANS

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

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

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

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

5.1.2 PARALLEL PLANS AND L-SHAPED PLANS

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

5.1.3 DISPERSED PLANS

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

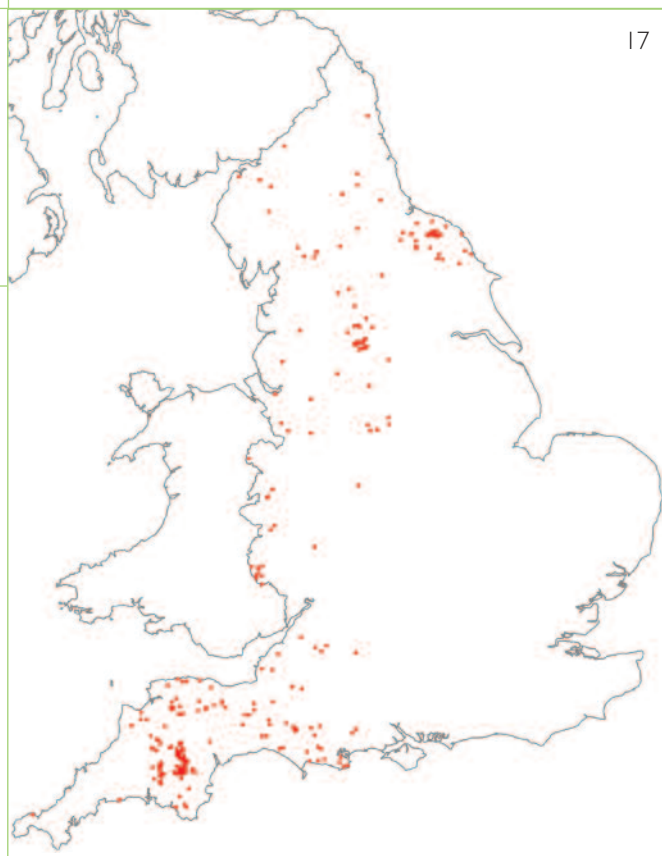
5.1.4 LOOSE COURTYARD PLANS

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

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

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

5.1.5 REGULAR COURTYARD PLANS

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

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

5.2 FACTORS INFLUENCING FARMSTEAD CHARACTER

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

5.2.1 FARM SIZE

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

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

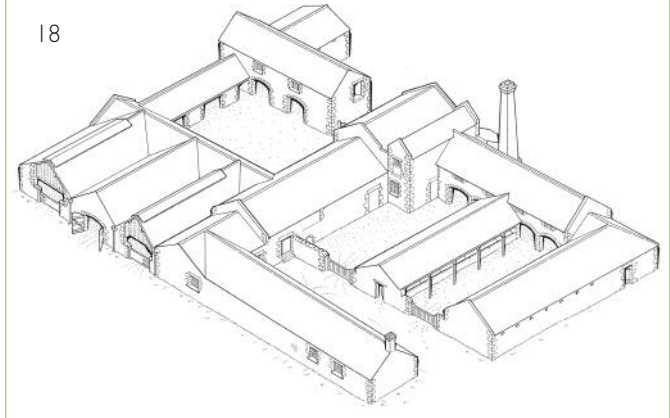
5.2.2 ESTATE POLICY

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

5.2.3 LOCAL VARIATION OF FARMING SYSTEMS

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

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



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

5.2.4 INTERNAL WORKINGS OF THE FARMYARD

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

5.2.5 DEVELOPMENT OF FARMING SYSTEMS

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

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

5.3 FARMSTEAD PLANS IN THE EAST MIDLANDS

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

5.3.1 LINEAR PLANS

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

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

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

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

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

5.3.2 L-PLANS, PARALLEL AND DISPERSED PLANS

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

5.3.3 COURTYARD PLANS

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

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

6.0 Key Building Types: Crop Storage and Processing

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

6.1 BARNs

6.1.1 NATIONAL OVERVIEW

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

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

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

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

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

Major variations were in the five following areas.

6.1.1.1 Plan form

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

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

19 Power in barns: national examples

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



19A



19B



19C



19D



19E

6.1.1.2 Size

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

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

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

6.1.1.3 Combination Barns

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

6.1.1.4 Evidence for mechanisation

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

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

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

6.1.1.5 Evidence for reuse and adaptation

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

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

6.1.2 BARNs IN THE EAST MIDLANDS (Figure 20)

6.1.2.1 Threshing Barns

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

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

20 Barns in the East Midlands Region

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

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



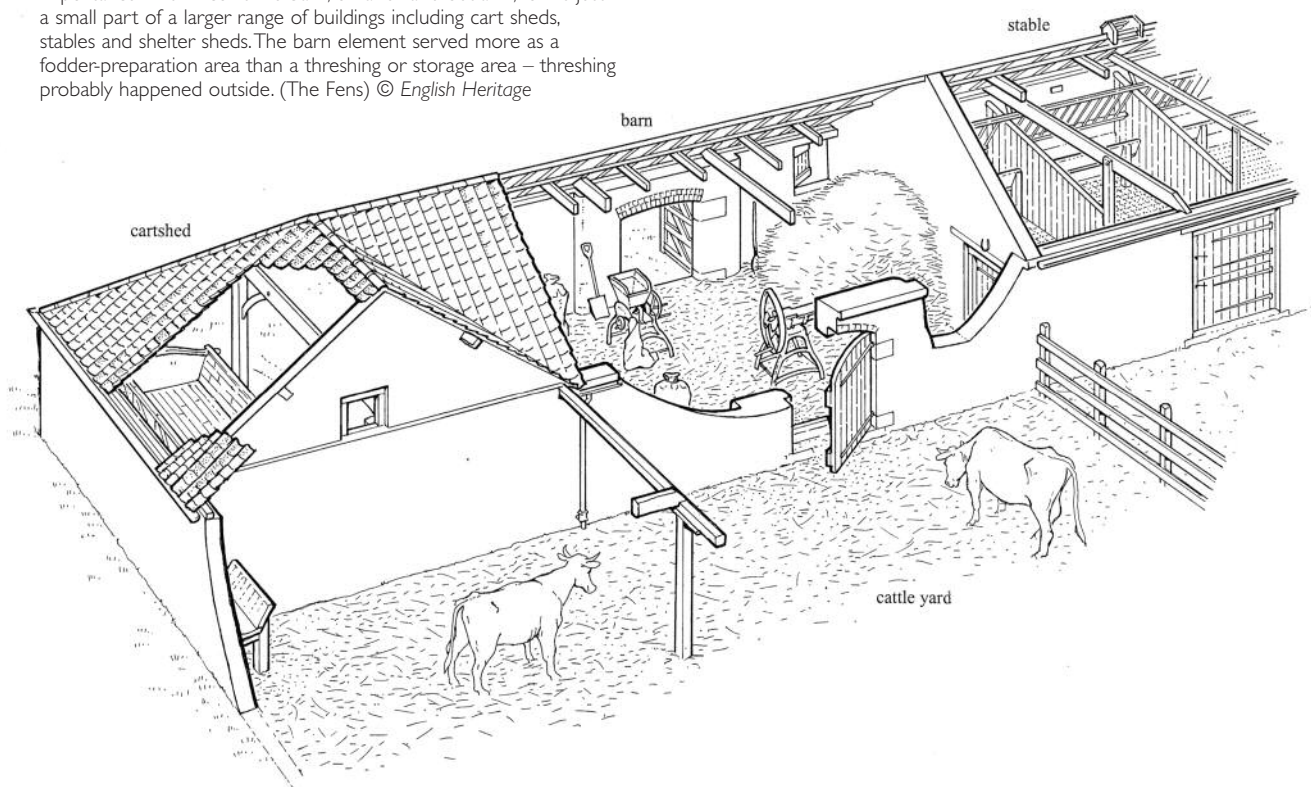
the areas where there was no good building stone (Mingay 1984, p.123). In open-field areas there is documentary and archaeological evidence for 'rick places' – raised platforms sited in the fields for storing the unthreshed crop (Hall 1995, p.28). By the 18th century, it was standard practice in much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

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

6.1.2.2 Combination barns

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

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



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

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

6.1.2.3 Mechanisation

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

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

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

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

6.2 GRANARIES

6.2.1 NATIONAL OVERVIEW (Figures 22 & 23)

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

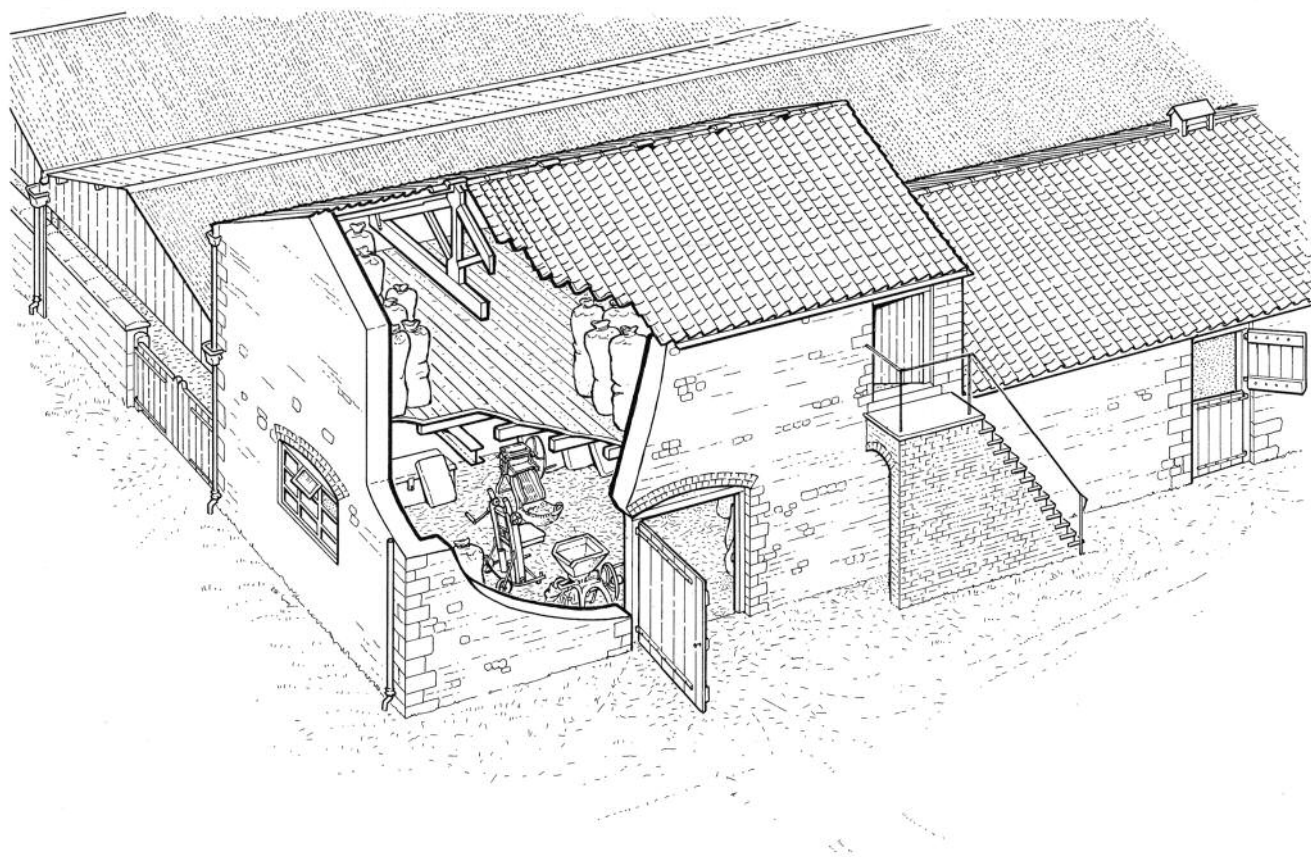
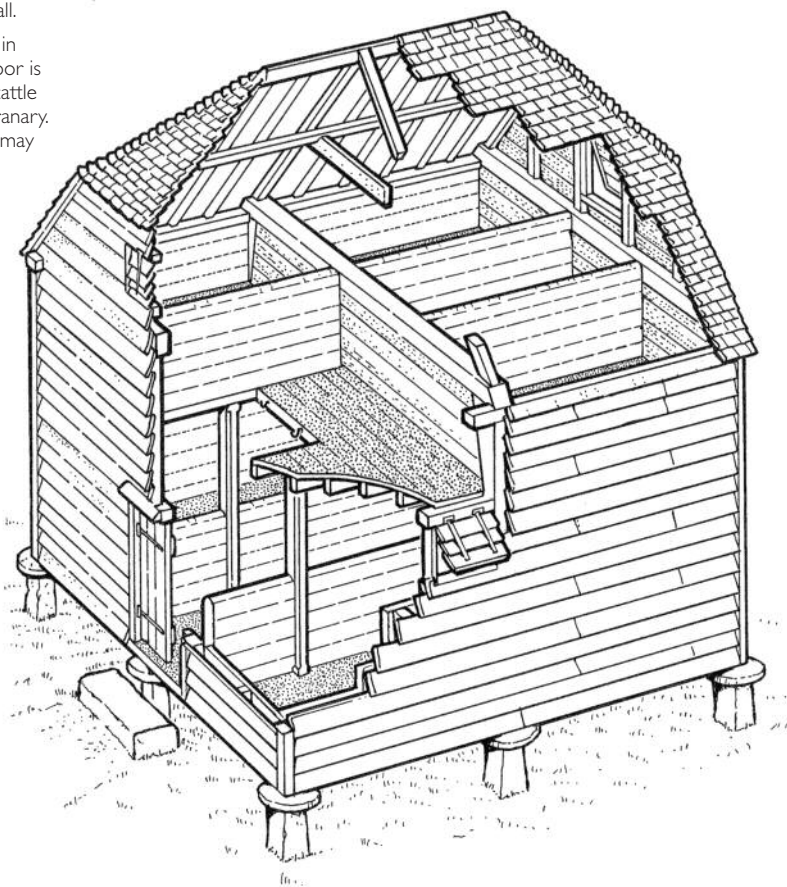
Internally granary walls were usually close-boarded or plastered and limewashed, and the floor made of tight-fitting lapped boards to prevent loss of grain. Grain bins, or the slots in vertical timbers for horizontal planking used to make them, are another characteristic feature: close-boarded partitions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

22 Granaries

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

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

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

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

Grain was typically accommodated in:

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

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



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

6.2.2 GRANARIES IN THE EAST MIDLANDS (Figure 24)

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

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

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

24A



24B



24C



24D



24E



24F



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

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

6.3 CART SHEDS AND IMPLEMENT SHEDS

6.3.1 NATIONAL OVERVIEW

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

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

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

6.3.2 CART SHEDS IN THE EAST MIDLANDS (Figure 24)

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

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

6.4 HAY BARNs AND OTHER CROP-RELATED BUILDINGS

6.4.1 NATIONAL OVERVIEW (Figure 25)

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

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

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

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

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

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

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

25 Hay barns: national examples

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

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

25A



25B



25C



25D



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

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

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

7.0 Key Building Types: Animals and Animal Products

7.1 CATTLE HOUSING

7.1.1 NATIONAL OVERVIEW (Figure 26)

There are great regional differences in the management of cattle and the buildings that house them. This extends to how they are described in different parts of the country: for example, 'shippon' in much of the South West; 'byre' in northern England; 'hovel' in central England. Stalls, drains and muck passages have also been given their own local vocabulary.

Evidence for cattle housing is very rare before the 18th century, and in many areas uncommon before the 19th century. The agricultural improvements of the 18th century emphasised the importance of farmyard manure in maintaining the fertility of the soil. It was also recognised that cattle fattened better and were more productive in milk if housed in strawed-down yards and buildings, and fed with carefully measured quantities of nutritious turnips and imported feed. There is hardly a farmstead without 19th-century adaptations for increased livestock accommodation.

The introduction of hygiene regulations early in the 20th century for the production of milk resulted in new floors, windows and stall arrangements being inserted. Animal welfare standards are also important; cows on farms seeking Soil Association assurance require more than double (at 6 square metres) the space of tethered beasts in traditional cow houses. Some, particularly under split-level barns, are too low for modern usage and so have been preserved by abandonment or occasional use by sheep.

Characteristic features of cattle housing include:

- Externally, lower and wider doorways than stabling, with wall ventilation slits (adjustable sliding ventilators from the early 19th century) and holes in gable ends or side walls for the throwing out of muck (especially in areas with limited straw for bedding, where cattle were wintered indoors).
- Internally, ceilings were typically low and there was very little light. Hay was stored above in lofts, and in some examples (such as the Pennines) on either side in 'sink mows', increasing the warmth and airlessness. It was not until the later 19th century that the importance of a well-ventilated cow house became fully appreciated. The size of the haylofts increased as more cows were kept and the production of hay rose; their ceilings were higher and air ducts went from the cow house up on to the roof above the hay barn.

- Interior stalling and feeding arrangements. Cows were usually tethered in pairs with low partitions of wood, stone, slate and, later, cast iron between them. As the breeding of stock improved and cows became larger, the space for the animals in the older buildings became limited and an indication of the date of a cow house can be the length of the stalls or the width of the building. Feeding arrangements can survive in the form of hayracks, water bowls and mangers for feed.
- Variations in internal planning, cattle being stalled along or across the main axis of the building and facing a wall or partition. They were fed either from behind or from a feeding passage, these often being connected to fodder rooms from the late 18th century.

In the following descriptions of buildings for cattle the wide variety in the means of providing accommodation for cattle, both over time and regionally, can be seen.

7.1.1.1 Longhouses

In this type of building the family and animals used a common entrance and the cattle (typically prized dairy cattle) were stalled at one end, usually the end down-slope. Examples (often high status in terms of their size, detail and construction) survive in parts of the north and west of England and are usually the only evidence for cattle housing before the 17th century. They were more widespread in the medieval period (see 5.1.1 and Figure 17).

7.1.1.2 Ox houses

Oxen were the favoured animals for draught work on the farm in the medieval period, although in some parts of the country horses were already replacing them. They survived in some areas into the 19th and even 20th centuries. Ox houses can be very difficult to identify, the most distinguishing feature being wide doorways and wider-than-average stalling (see 7.3.2).

7.1.1.3 Combination barns

See 6.1.2. These were used for cattle accommodation from the 17th century, and in northern aisled barns from at least that period.

7.1.1.4 Open-fronted sheds

The earliest of these were the two-storey linhays of the South West, with cattle accommodated below a hayloft. Shelter sheds, facing on to yards and either with haylofts above or simply single-storey, were increasingly built from the mid-18th century. Cattle yards with open-fronted sheds were typical of mixed farming areas where cattle

26 Cattle housing

- A & B Wooden cow stalls and slate cow stalls, the latter as found throughout the northern uplands. (A Durham Coalfield Pennine Fringe; B Yorkshire Dales)
- C Cow houses needed to be well ventilated, by either slits in the wall or windows. Horizontal sliding hit-and-miss ventilators, as here, achieved wide popularity in the mid- to late 19th century. (Vale of York)

- D A range of looseboxes, easily distinguishable by its rows of doors providing access to individual cubicles for fattening. (North Northumbrian Coastal Plain)
- E The interior of a covered yard, on a home farm of the mid-19th century. (Shropshire, Cheshire and Staffordshire Plain)

A, B & C © Jen Deadman; D & E © English Heritage / Michael Williams



26A



26B



26C



26E



26D

were housed on the steading as fatstock and for their manure. Common internal fittings were mangers and hayracks, and sometimes stalls.

7.1.1.5 Lean-tos (outshots)

These were attached to other buildings (particularly barns) and farmyard walls, either as part of the initial

phase of build or (particularly if the barn is pre-1750 in date) a later addition. These could be either open-fronted or closed with doorways to individual cow houses or looseboxes.

7.1.1.6 Free-standing cow houses

These comprised either single-storey ranges, or two-

storey ranges with haylofts. Pre-19th-century examples of the former include the neathouses of the claylands of Suffolk and examples of both types are found in the West Midlands. In cattle-rearing areas calf houses have also been found; typically they are smaller in scale and often sited close to the house.

7.1.1.7 Looseboxes (Figure 31D)

Mostly dating from the 1850s, these served as accommodation for sick or calving beasts, bulls or most commonly fatstock. They comprised individual boxes or more usually a row of boxes with a central or rear feeding passage. The latter were usually distinguished externally by continuous rows of doors. There was often a feeding passage along behind them, with a feed store at one end. If used for fatstock, the floor of the boxes was sunken and the manure would build up in them during the winter. They reflected a realisation that warm and dry conditions would promote weight gain (through minimising heat loss) and retain the quality of the manure. Double rows would have a central feeding passage and were to be found on many farms by 1860.

7.1.1.8 Covered yards

By the 1850s it had been proved by agricultural chemists that the nutritional value of manure would be better preserved if it were under cover, and as costly feeds produced richer manures, the incentive to protect them was great. The problem was that it could be difficult to provide enough ventilation, but this could be overcome by complex systems of louvers and shutters. Some continued to be built as the depression in grain prices focused attention on livestock production. The best-known examples of covered yards are on the most expensively designed model farms of the mid-to late 19th century, almost all of them being estate-owned. The introduction of roofs to existing yards became general in fatstock areas from the late 19th century and especially after 1940. Dairy cattle are now typically housed in portal-framed sheds erected in the post-war period.

7.1.2 CATTLE HOUSING IN THE EAST MIDLANDS (Figure 27)

A small number of longhouses have been tentatively identified in Derbyshire but in all the examples recorded it appeared that the byre end of the house had been rebuilt, removing the evidence that would positively identify the building as a longhouse (Hutton 1991, pp.8–9).

In common with most regions, examples of cattle housing built before the 18th century are extremely rare, making those that are identified all the more significant. The earliest examples of cattle housing

found in the East Midlands, dating from the 17th century, usually form part of a combination barn. It is probable that, as in the East of England and West Midlands Regions, there were pre-18th-century cattle yards bordered by barns and stables.

There are very few surviving separate buildings for livestock accommodation dating from before 1840. They were probably either temporary in form or simply not provided. Seventeenth-century Northamptonshire inventories, for example, show that barns were accompanied by smaller animal housing/storage buildings called 'hovels' (RCHME 1984, p.lxvii). Pusey, writing of Lincolnshire in 1843, stated that, 'though the farm buildings of Lincolnshire are generally excellent, I was sorry in some of the yards to see numerous cattle standing shelterless in the midst of a snow storm. These yards should at once be furnished with sheds, for the beast's and his master's comfort' (Pusey 1843, p.305).

Where cattle accommodation was provided it usually took the form of enclosed cow houses in the northern and dairying parts of the Region. Many cow houses in the dairying areas were rebuilt in brick during the 19th century and were important features of many farmsteads. Cow houses formed an important element of all farmsteads in the grazing areas. Brick cow sheds with ventilated hay lofts above were typical of the Humberhead Levels around Misson as well as the Trent Valley.

In the south and east of the Region particularly, cattle housing often consisted of single-storey, open-fronted brick and pantile shelter sheds frequently associated with cattle yards or 'crew yards' divided up so that groups of cattle could be managed individually. The addition of shelter sheds around yards became increasingly common in the early to mid-19th century; for example, on many of the Lincolnshire farms surveyed as part of the RCHME survey shelter sheds were added after 1850 (Barnwell & Giles 1997, p.46).

In the clay vales of the Midland Plain the shift away from arable after the enclosure of the open fields is reflected in the buildings. Whilst sheep farming leaves little in the way of built evidence, dairy farming does, and 19th-century brick cow houses – often with haylofts above – survive on many farms.

Covered yards are also mostly found on estate farms such as the Dysart estate farms at Little Ponton, Hanby and North Witham, in Lincolnshire, all built in 1883 (Barnwell & Giles 1997, p.58) although they are occasionally found away from estate-owned farms.

27 Cattle housing in the East Midlands Region

- A Single-storey open-fronted shelter shed facing into a fold yard. (Needwood and South Derbyshire Claylands)
- B Enclosed cow houses in Derbyshire. (Derbyshire Peak Fringe and Lower Derwent)
- C A hemmel with a walled yard. (Northamptonshire Uplands)
- D, E & F On many farmsteads in the 19th century cattle fattening

increased in importance and farmsteads were provided with ranges of looseboxes (D Lincolnshire Wolds; E Northamptonshire Uplands) or a fully covered yard, which, in this example, also has looseboxes where sick or calving beasts could be isolated. (F Kesteven Uplands)

A Bob Edwards; B © Susanna Wade Martins;
C–F © English Heritage / Michael Williams



27A



27B



27C



27D



27E



27F

7.2 DAIRIES

7.2.1 NATIONAL OVERVIEW

The dairy, where milk was stored and turned into butter or cheese, was usually located within the farmhouse (at its service end or in a rear room) or located in a lean-to at the rear of the house. Some dairies were separate buildings but, as the women of the household usually managed the dairy, they were normally situated close to

the house. Within the dairy, which was commonly cool and damp, milk was poured into large shallow pans and the cream left to rise to the top before it was skimmed off and churned (usually with a plunger) in order to make butter. New types of churn appeared in the mid-19th century, the most important invention being the centrifugal separator in 1890. On some estates, the individual dairy building could be ornate in design; they were often circular, with a tall conical roof and plenty of

ventilation, cool tiled floors and a low marble, slate or tiled shelf running almost all the way around inside.

Cheeses were made from the preservation and treatment of the curd, the solid mass that separates from the thin whey: harder cheeses were made from skimmed milk, softer cheese such as Cheshire from whole milk. After pressing, it needed space for storage. In areas where cheese making was important the dairies often had a room above called a cheese loft, where cheese was stored while maturing, or there would be a separate cheese house, the equivalent of the arable farmer's granary. In the 19th century more ornate dairy buildings were built on some of the larger farms, often located within the garden of the farmhouse rather than in the working farmyard.

Dairying for urban markets was already a specialised enterprise by the 1750s, and winter feeding and the ousting of less-productive breeds by the Dairy Shorthorn (after 1820) boosted yields. By the 1850s, butter production for the market was concentrated around towns, and the first small dairy factories started production around 1870. Cheese making in East Anglia gave way to cereal farming and fattening after 1800 (Holderness in Mingay 1989, pp.160, 158). Commercial cheese making and foreign imports (from the colonies) made inroads from the 1860s, and by around 1914 farmhouse butter was being sold only in Devon and Cornwall, and cheese made only in Cheshire, Leicestershire and the vales of Dorset and Somerset (Whetham 1978, pp.11, 15). Changes in hygiene regulations and the centralisation of production through the 20th century had a major impact on dairies, with the majority becoming redundant to their original use. Changes in use may have resulted in the removal of fixtures such as slate or stone shelves for cooling the milk.

The sale of liquid milk had become massively important in many areas by the early 20th century (Whetham 1978, pp.9–10). The stand for milk churns, often built at the farm gate to save the milk cart or lorry from having to come to the farmstead, and the abandonment of all but a handful of farmhouse dairies and cheese rooms for new milk-production plants were the other visible consequences of these developments.

The industrialisation of much of the dairy industry meant that the majority of farm dairies were redundant by the mid-20th century. Where the dairy was part of the farmhouse it is usual to find that it has been brought into domestic use, typically resulting in the removal of any



fittings associated with butter or cheese making. Any survivals of dairy equipment in situ are rare. Detached dairy buildings may also have been brought into an alternative use, again usually resulting in the removal of associated fittings. Surviving historic dairies are both rare and highly vulnerable. Cheese rooms are now especially rare and hard to identify.

7.2.2 DAIRIES IN THE EAST MIDLANDS

The principal surviving examples of dairies are within farmhouses rather than as detached outbuildings (see, for example, Barley 1961, pp.158–60; Hey 1984, p.133; Mingay 1984, p.142).

7.3 STABLES

7.3.1 NATIONAL OVERVIEW

After the barn, the stable is often the oldest building on the farmstead. The high value of horses to the running of the farm meant stables were well built and often placed near the house, with easy access to the fields, and given a certain level of architectural and decorative treatment. A few stables dating to before 1700 have been identified in local surveys, while many more date from the 18th century. One of the reasons for this rise in number was the decline in the use of oxen.

The size of stabling was, like granaries and cart sheds, loosely linked to the arable acreage of the farm. The number of horses needed to work a farm changed little until the arrival of the tractor, with one horse for every 20 acres being the frequently quoted figure. Smaller farms still needed a team of horses, so even a 50-acre farm might well have four horses. Most farms still kept a few working horses until the 1950s, and they were finally replaced by tractors during the 1960s. Farmsteads, and the farmyards attached to manor and gentry houses, often had stables for riding and coach horses, the upper floors commonly being used as accommodation for stable hands. These were usually well appointed and in some cases were used as displays of wealth and status, incorporating architectural detailing not found on most other farm buildings.

29 Stables in the East Midlands Region

Stables are typically lofted buildings, either separate structures (A Needwood and South Derbyshire Claylands) or forming part of a range of buildings around a courtyard (B Derbyshire Peak Fringe and Lower Derwent). Later 19th-century stables are often single storey buildings with roof vents to provide improved ventilation for the horses.
A © Bob Edwards; B © English Heritage / Michael Williams

Stable interiors are characterised by:

- Horses commonly stalled in pairs with wooden stall divisions between them to stop them kicking each other (Figure 28). Cast-iron stable fittings often replaced wooden ones. More elaborate stalls and mangers were usually confined to the riding-horse rather than carthorse stable, but on many small farms the riding horse would have been kept alongside the working animals. In early (pre-1750) examples, the stalls are across the end walls while in later examples the stalls are along the side walls, allowing more scope for lengthening the building and thus housing more horses.
- A manger and hayrack, the latter often accessed from a drop from the hayloft above. Other types of fodder, such as crushed oats and bean straw, became more general after the mid-19th century.
- Floors, cobbled and from the mid-19th century of engineering brick, sloping to a drainage channel.
- A ladder to the loft.
- The harness was usually kept in a separate room and chaff boxes were built in to the structure for storing feed. Small cubby-holes for keeping grooming brushes, medicines or lanterns were often built into the walls.

Stable exteriors are characterised by being:

- Usually two-storey, with pitching openings and ventilation to the first-floor loft and an external staircase. The upper floor sometimes provided accommodation for farm labourers or stable lads. Despite textbook advice on the tainting of the hay, the practice of housing horses below haylofts persisted, partly because of the perceived need to protect horses from chills and draughts. Single-storey stables, commonly with cast-iron ridge vents, were built from the later 19th century.
- Well lit, with windows ideally opening to the east to catch the early morning light. The door was wider and higher than that in the cow house.

As stables were usually well-lit buildings they tend to be less vulnerable to changes that affect their character externally. Carthorse stables are far less likely to retain floor surfaces, internal stalls and fitments (such as saddle hooks) than riding-horse stables. Many stables, particularly those located within ranges that included cow houses, were converted into dairies when modern electrically powered milking and cooling machinery was introduced from the 1950s.



29A



29B

7.3.2 STABLES IN THE EAST MIDLANDS (Figure 29)

The move from arable farming to predominantly pastoral farming probably resulted in a lesser requirement for stabling, as fewer working horses would have been necessary on a rearing or fattening farm. Although some free-standing stables of the 16th and 17th centuries survive in the Region, many of these examples are probably domestic rather than agricultural. More are to be found dating from after 1700, and survey evidence in Northamptonshire suggests that stables there were mostly square with a storeroom above (RCHME 1984, p.lxviii).

Across the northern part of the Region stables typically form part of a combination barn, occupying one or two bays to the side of the threshing floor and with a hayloft above.

Horse rearing was important in parts of the Region but it is not yet clear whether farmsteads in these areas incorporated higher numbers of buildings such as stables or hay barns.

7.4 PIG HOUSING

7.4.1 NATIONAL OVERVIEW (Figure 30)

One or two pigs were kept on most farms, although the pigs often ran with other livestock in the fields, or roamed about the yard, rather than having their own

30A



30B



30 Pigsties: national examples

Pigsties have few regionally distinct features other than their building materials (A North Yorkshire Moors and Cleveland Hills). Most have a small yard attached to the shelter (B Arden) and they may have hatches and chutes for feeding, whilst some form part of a larger range of buildings. Some pigsties are combined with poultry housing (C South East Northumberland Coastal Plain). Generally these buildings are extremely vulnerable to neglect as they offer little opportunity for other uses.

A © Jen Deadman; B © Peter Gaskell;

C © English Heritage / Michael Williams

30C



dedicated housing. Pigs were most commonly kept in dairying areas or market-gardening areas, such as the Fens, where whey or potatoes were available for feed. The only requirements for special accommodation were for farrowing, final fattening and accommodation of the boar. On most farms only a few pigs were kept for domestic use and here they were normally fed on kitchen scraps or whey (a by-product of dairying) and so sties were often placed near the kitchen or dairy. Sometimes they were also integrated into the planning of the farmyard, commonly on larger farms where commercial fattening was practised. Any pre-19th-century examples are of great rarity.

Characteristic features of pigsties are:

- Single-storey structures, with a gable entry to a first-floor hen house where lofts occur.
- Low entrances.
- Individual yards in some regions.
- Their construction in rows of three or more small and unlit boxes, often with a chute through the front wall into the feeding trough down which the swill could be thrown.
- A small chimneystack, marking the position of a boiler house for boiling swill for pig feed. These are most commonly found where pigs were kept on a commercial scale.

Imported feed sustained the growth of the pig industry

in the inter-war period, more specialist producers taking the Danish or Scandinavian system as a model for the industrial housing of pigs. The American battery system of housing poultry was used for pigs from the late 1920s.

7.4.2 PIG HOUSING IN THE EAST MIDLANDS

Pigs were not kept on a commercial scale except in dairying or market-gardening areas such as the fens, where whey or potatoes were available for feed. The parish crop returns show that a substantial number of pigs were kept in the Lincolnshire parishes studied by the RCHME, but little accommodation was provided for them and that there was mostly dated from the late 19th century. They were probably kept in the fields or with the cattle in the yards. The only requirements for purpose-built accommodation were for farrowing and for the piglets, for the boar and for the final fattening. The Lincolnshire examples of pigsties often formed parts of ranges around the cattle yard, with the pigs having direct access from the cattle yard to their own small yard attached. Some examples were associated with housing for fowl (Barnwell & Giles 1997, p.62). On most farms the sties were placed near the house or beside the dairy.

7.5 SHEEP HOUSING

7.5.1 NATIONAL OVERVIEW

The great importance of sheep farming to many areas of the country is not reflected in surviving farm buildings. In

medieval times it was common practice to provide sheep houses, or berceries, even in the south of England. Apart from possible medieval timber-framed sheepcotes in Hampshire (Lewis et al 1988, p.113–15) there is only earthwork evidence for these buildings, but documentary sources show that in Gloucestershire at least they ranged from between eight and eighteen bays (Dyer 1995, p.149). Barns, when empty, were sometimes used for shearing and sorting the wool.

In Cumbria and elsewhere in northern England a building similar in appearance to a field barn was provided for the hoggs or yearling sheep to give them protection over their first winter. Low floor-to-ceiling heights and upper-floor haylofts are characteristic features of these buildings. The low ceiling to the ground floor below a hayloft is the characteristic feature of hogg houses. Sheep housing in other areas is associated with outfarms, such as on the southern downlands.

Before the adoption of enclosures of rough grazing in upland areas sheep were kept on both the low-lying commons and high moors to which nearly all farmers had access. The only times of year when all the sheep would be gathered together was for shearing and salving and dipping. Salving involved the boiling of Stockholm tar and tallow to make a mixture that was smeared all over the coat to protect against lice and scab as well as keep the fleece waterproof through the harsh winter. The practice of salving was carried out until the introduction of compulsory dipping as protection from scab in the early 20th century and very few of the sheds used for salving survive. As well as salving, sheep were also washed or dipped. Sheep washing was often carried out in ponds or streams where the watercourse might be artificially deepened or walled or, more unusually, sheep were dipped in specially constructed tanks. Enclosures funnelled towards the water's edge have been found. In areas where watermeadows were a feature of the landscape sheep dips are sometimes found built in to the system of leats and sluices.

7.5.2 SHEEP HOUSING IN THE EAST MIDLANDS

As is typical for much of southern and central England, sheep were rarely provided with buildings, even in the Pennine upland areas of the Region, in contrast to the Regions to the north where isolated hogg houses were built in the fields. Although there are few identified sheep houses in the East Midlands Region it is likely that most are associated with outfarms or field barns.

7.6 DOVES AND POULTRY

7.6.1 NATIONAL OVERVIEW (Figures 31 & 32)

The construction of a dovecote indicated the status of the owner; as in the medieval period the keeping of doves or pigeons was usually restricted as a manorial

right. The birds provided fresh meat and eggs as a supplement to the already varied diets of wealthier people, while the manure was also valued (see McCann 1991). As a consequence, dovecotes were often the object of considerable display and decoration, and commonly associated with gentrified or manorial farms.

Dovecotes are usually square or circular towers with pyramidal or conical roofs, but a number of varying forms have been found, including tun-bellied dovecotes (where the walls bulge outward slightly before tapering upward) and beehive dovecotes with corbelled stone roofs. There are also lectern dovecotes, which are square or rectangular with a mono-pitch roof, and a small number of octagonal dovecotes that are usually of 18th- or 19th-century date. Externally, perching or sunning ledges formed either in stone, brick or timber have been found. Later dovecotes often incorporated other functions such as granaries or stables. As the keeping of pigeons became more widespread, nesting boxes were incorporated into other farmyard buildings, for example the gable ends of barns.

Internally the walls were lined with nest boxes. In the earliest examples the nest boxes were sometimes formed in the thickness of the wall but usually they were in stone, brick or wood. Dovecote doorways were low to discourage the birds from flying out and often a potence, a central pivoted post with arms supporting a revolving ladder, provided access to the nest boxes for collection of the squabs and eggs. Surviving internal fittings are of great rarity, notably potencies and nest boxes (especially the removable wooden types).

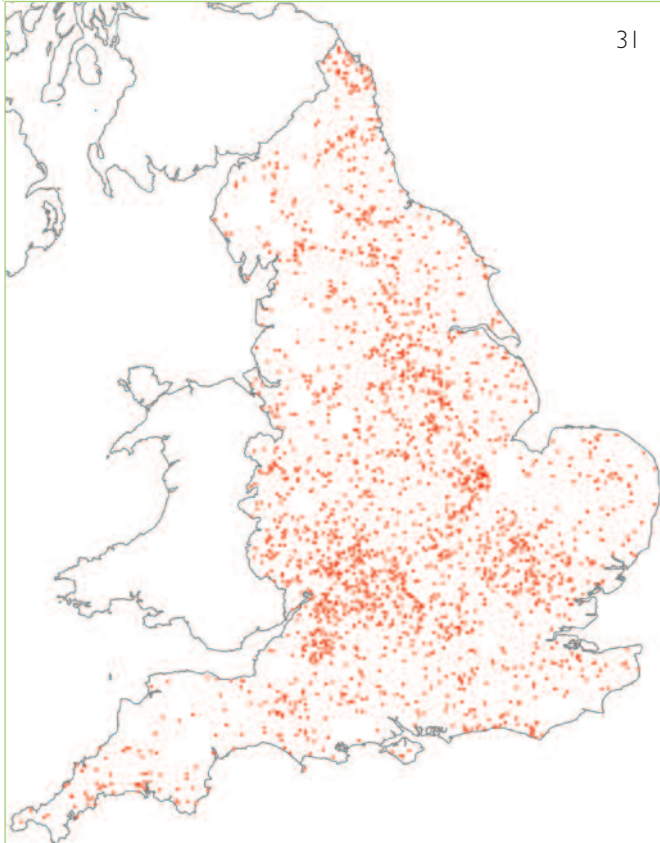
Studies have shown that the distribution of dovecotes may in part be affected by the robustness of the building material. For example, a study of Gloucestershire dovecotes suggests that the brick or timber-framed dovecotes typical of the Vale of Gloucester have fared less well than the stone-built examples of the Cotswolds. At the time of the Gloucestershire survey the author noted that the surviving dovecotes of the Vale were in noticeably poorer condition (Ariss 1992, p.14).

During the 17th and early 18th centuries the restrictions on keeping doves were lifted and small-scale accommodation for doves can be found built into other farm buildings. However, as cereal prices rose and improved methods of farming were adopted the popularity of pigeons declined. Investigation of a farmstead should include a search for small groups of nest boxes, which may be tucked away at the top of a gable or over a gateway.

Poultry keeping was usually the preserve of the farmer's wife and so the hen house was usually close to the farmhouse. This location was also chosen because

31 Distribution of listed dovecotes in England. This distribution includes both free-standing dovecotes and dovecotes that are incorporated into other buildings. Although dovecotes are found in all Regions, their concentration within Roberts and Wrathmell's Central Province, from Gloucestershire to Northumberland and extending into north Oxfordshire, is notable. Within this area manorial control was strongest and the higher numbers of dovecotes may reflect this. There is a concentration of dovecotes in Nottinghamshire.

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31

32 Buildings for birds in England

A A The corbelled stone roof of this beehive dovecote is a distinctive method of construction that is only found in the south-west and north-east parts of England. (Cornish Killas)

B Medieval circular dovecote. Note the low doorway. (Dorset Downs and Cranborne Chase)

A © Eric Berry; B © Bob Edwards

(continued overleaf)



32A



32B

poultry were often fed on kitchen scraps and looked after from the farmhouse. 'Accommodation for poultry is a modest, though necessary adjunct to all farm homesteads. The busy farmer himself pays little attention as a rule to the feathered tribe, but a thrifty wife knows too well the profit attached to them,' (Clarke 1899, p.172). Geese could be housed in free-standing pens or alcoves in farmyard walls. Hens usually ran freely about a farmyard, but were encouraged to nest safely away from predators and so that the eggs could be collected. Hen houses usually included a small pop hole for the hens as well as a full-sized door for human access for feeding and egg-collection. The walls were lined with nest boxes. As is still the case, hen houses were usually relatively short-lived buildings and there are few survivals that can be described as historic. Where historic examples do survive they usually form part of another building, such as a pig house: it was thought the chickens would keep the pigs warm and the pigs would frighten foxes away. The combination of a hen house located above a pig house was described as a pouliggery in some areas (for example in North Shropshire and Northumberland). These could be associated with a boiler house with a chimney for feed preparation.

7.6.2 DOVES AND POULTRY IN THE EAST MIDLANDS (Figure 32)

Dovecotes are found in all Regions of the country but their distribution is not even. Within the East Midlands Region concentrations of listed dovecotes are found in south-west Lincolnshire, north-east Leicestershire and in Nottinghamshire. The dovecotes of the Region include medieval examples and those built in the 19th century often as a decorative feature in a planned range, and usually form part of another

32C



32D



32E



32 Buildings for birds in England (continued)

- C Square brick-built dovecote with the date 1715 formed by bricks of a contrasting colour: (Leicestershire Vales)
 - D Seventeenth-century timber-framed dovecote. Internally the nest boxes of this building are made from stone rubble, but wooden nest boxes and, in the East of England Region, clay bats forming the nest boxes are also found. (Herefordshire Lowlands)
 - E Octagonal brick dovecote dating from the 18th century. (Herefordshire Lowlands)
 - F Nest boxes incorporated into the gable end of a barn. The construction of nest boxes into the walls of other buildings was commonplace during the 18th and 19th centuries. (Cotswolds)
 - G Hen house built over a pigsty. Probably late 19th century. (Vale of York)
 - H Goose pen built against a farmyard boundary wall. (Herefordshire Plateau)
- C © Susanna Wade Martins; D 149817 Taken as part of the Images of England project © Mr Chris Tresise; E, F & H © Bob Edwards; F & G © Jen Deadman

32F



32G



32H



building such as a stable or granary (Wade Martins 2002, p.143). Generally, their construction and style do not differ from the national picture, although in Nottinghamshire a rare mud-built dovecote survives (Severn 1986, p.10).

Historic hen houses are relatively rare survivals. At Moat Farm, Newton, Lincolnshire, the hen house was above the piggery (known as a poultiggery). The hens entered through a small hole and there was also a full-sized door for feeding and egg-collection. Inside, the walls were lined with nest boxes (Barnwell & Giles 1997, pp.62, 64).

8.0 Key Building Types: Other Farmstead Buildings

8.1 OUTFARMS AND FIELD BARNES

8.1.1 NATIONAL OVERVIEW

Field barns and outfarms, sometimes with a cottage beside them, can be prominent landscape features. Outfarms were usually created on larger farms or in areas where the farmsteads remained in the villages after enclosure, resulting in some fields being distant from the main farmstead. These complexes usually took the form of a yard that was often fully or partly enclosed by buildings. The outfarm saved on labour in that the harvested crop from the surrounding fields did not have to be carried back to the farmstead, and its straw turned into manure which, in turn, did not have to be carted back out to the distant fields.

Field barns were built in areas where farmsteads and fields were sited at a long distance from each other or where fields were interspersed with the land of other farms. Isolated field barns, cow houses and sheep houses are documented from the medieval period in upland areas (Le Patourel in Miller 1991, p.865). In some cases, such as the Craven Dales of Yorkshire or in the South Hams of Devon, they could be multi-functional buildings

for cattle, corn and hay. The small and numerous field barns of the North Yorkshire Dales were built for a specialist dairy industry. In arable areas they were often simply threshing barns, which after 1770 were a typical part of outfarm groups.

Field barns and outfarms have always been vulnerable to dereliction once redundant. The widespread introduction of artificial fertilisers, bale silage production and the centralisation of farming activities are key factors in the abandonment and dereliction of field barns and outfarms.

8.1.2 OUTFARMS AND FIELD BARNES IN THE EAST MIDLANDS (Figure 33)

Outfarms are found throughout the Region, and are particularly common in areas of large-scale post-1750 enclosure – such as the Lincolnshire Wolds, the Kesteven Uplands and the Northamptonshire Uplands.

Field barns were found in the Peak District and other Pennine upland and fringe areas where small stone buildings providing haylofts above and livestock accommodation below were to be found in the corners

33 Outfarms and field barns in the East Midlands Region
Outfarms and field barns were once commonplace in parts of the Region. In the upland areas of Derbyshire small field barns provided accommodation for cattle with a hayloft over (A Dark Peak; B Derbyshire Peak Fringe and Lower Derwent). In arable areas where farmsteads remained in the villages after enclosure, outfarms with a threshing barn and a stockyard were built within the new enclosures away from the village in the later 18th and 19th centuries. (Northamptonshire Vales)
A © Susanna Wade Martins; B 393535 Taken as part of the Images of England project © Mr Jim Charlton; C 233704 Taken as part of the Images of England project © Mr Roger Ashley



33A



33B



33C

of many fields. Unlike the field barns within the northern part of the Pennines, Derbyshire field barns were typically set on a flat site rather than built into a slope (Brunskill 1987, p.156). They date from the late 18th and 19th centuries, and in the White Peak are clustered in areas of intensive lead mining, such as around Winster and Bonstall, and around the market centres of Bakewell and Alstonefield (Barnatt & Smith 2004, pp.99–100).

8.2 MINOR AND MISCELLANEOUS BUILDINGS

8.2.1 NATIONAL OVERVIEW

A range of other, smaller, buildings have also been found in a farmstead. Every farmyard would have had a water supply, either a pond, a nearby stream or a well, which could be enclosed in a well house. Fast-flowing water would also be used (see 6.0) to process grain into flour and wool into textiles, although evidence for mills or

loom shops is very rare on surviving farms. Fuel for heating, in the form of timber or turf, would also be kept close to the house; specialist houses for peat, such as in Eskdale (Cumbria) are very rare. Some farmyards had recesses in the walls called bee boles to house a straw skep beehive. Occasionally a farm had its own slaughterhouse but many of these buildings do not have any characteristic external features, although internal features often included a higher ceiling and possibly a wheel to raise carcasses. Detached structures or rooms with chimneystacks served a diversity of functions: boil houses for animal (usually pig) feed; smithies (most frequently found on large farms, and located close to cart sheds); or washhouses. Farm dogs were often accommodated beneath the flights of steps that led up to lofts. Kennels for hunting dogs are found in hunting areas and are typically low, single-storey buildings similar to pigsties, with attached individual yards enclosed by metal railings.

9.0 Glossary

Aisled barn A barn in which increased width was obtained through the use of aisles – narrow extensions along one or more sides or ends of the barn. A series of posts stand in the place where the walls of an unaisled building would run. The roof is carried on beyond the line of the aisle posts so the height of the walls is reduced and the visual mass of the roof increased.

Allotment An area of land allotted to a farmer, often at the time of enclosure. The word changes meaning in the later 19th century to mean 'land allotted to villagers for growing their own fruit and vegetables'.

Arable Land cultivated for the growth of crops.

Bank barn A combination barn of usually two storeys. Through constructing the barn against a bank, both floors can be entered from ground level. Typically bank barns have a threshing barn, sometimes with a granary and hayloft, and over housing for cattle. The ground floor may be open-fronted or enclosed. Bank barns are characteristic of the Lakeland area of the North West Region and parts of Devon, Somerset and Cornwall in the South West Region. They could be placed across the slope or along the slope, the latter having the lower floor often accessed from doors close to or in one gable end.

Barn A building for the storage and processing of grain crops, and for housing straw. See also Combination barn.

Berceries (sheep houses) Medieval name for sheep houses – shelters provided for sheep usually in areas of grazing away from the farmstead.

Byre (see **shippon** and **hovel**) Dialect term for cow house, commonly used in Yorkshire and the North East.

Cart shed A building for housing carts and farm implements. Cart sheds are usually open-fronted buildings sited close to a road or track into the farmstead. One bay of a cart shed may be portioned off and provided with doors to create a secure storage area for smaller implements. In many areas cart sheds are combined with first-floor granaries.

Catch meadow system Similar to watermeadows. A system of drains cut along a hillside and made to overflow on to the pasture below in winter, encouraging the early growth of grass. Also known as field gutter systems.

Chaff box/chaff house Storage for the chaff, or outer husks of crops, a typical by-product of threshing. Chaff was used as fodder for horses.

Cider house A building for the milling and pressing of cider, found in the South West and the West Midlands. It usually forms part of a combination range, and is marked by a wide doorway.

Cob A term used for earth-walled buildings in the south and west of England. Cob buildings are heavily concentrated in Devon and Dorset and are also found in Wiltshire.

Combed wheat reed A method of thatching in which all the straw is laid in the same direction with butts down. The stems of the straw are not bruised or crushed as with longstraw. The finished roof resembles reed thatch rather than longstraw.

Combination barn A barn that also housed cattle or horses, and sometimes other functions such as cart sheds and granaries. Combination barns can be two-storey or single-storey buildings. They include bank barns.

Convertible husbandry A system whereby some fields were brought into arable cultivation for a short period – usually until the soil was exhausted – and then returned to pasture for a number of years. This system was commonly found in upland areas of the country.

Coping Usually flat stones but sometimes bricks laid on the top of a wall to prevent water getting into the core of the wall: for example, on the top of a gable wall of a building where the roofing material abuts the gable wall rather than covers it.

Covered yard A cattle yard that is fully covered by a roof – the aims of which were to protect the nutrients in the manure collecting in the yard from being washed away by the rain and to provide an environment where cattle would fatten more quickly.

Cow house An enclosed building for cattle in which the animals are normally tethered in stalls.

Cruck, Raised cruck, jointed cruck A pair of curved timbers, usually halved from the same tree trunk, that form an A-frame extending from the ground to the apex of the roof. A raised cruck has the feet of the crucks raised off the ground, usually embedded in a masonry wall. Jointed crucks are individual cruck blades formed by two timbers joined together.

Dairy A building, or more often a room within the farmhouse, where milk was processed to make cheese and butter.

Daub A mixture of clay and straw applied to wattle infill of timber-framing to make a wall.

Demesne farm A manorial farm managed directly as opposed to land within the manor farmed by tenants.

Dipping The washing of sheep by immersing them in water.

Dispersed settlement Settlement consisting of scattered, isolated farmsteads and small hamlets. Dispersed settlement is the predominant settlement form over much of western parts of England, and an area extending from East Anglia to the South East.

Dovecote A building, or part of a building, providing nest boxes for pigeons or doves.

Downland The higher land of the chalk areas of the country. These areas typically had a poor, thin soil and were the preserve of sheep which grazed on the extensive, unenclosed areas. This form of management suppressed the growth of scrub and allowed a rich flora to establish.

Dutch barn Now used to describe an iron-framed, open-fronted building for the shelter of hay or corn. They typically date from the late 19th to the mid-20th centuries.

Enclosure Enclosed land. Enclosure of land may have occurred at an early date – possibly medieval and in a few rare cases in the prehistoric period. In other areas open fields or common land was enclosed either by agreement or, in the 18th and 19th centuries, by act of parliament.

Fallow land Land left uncultivated, allowing it to rest. In a 3-field open field system one field was left fallow by rotation each year.

Farmstead The homestead of a farm where the farmhouse and some or all of the farm buildings are located.

Fatstock Farm animals reared for meat.

Field Barn A building set within the fields away from the main farmstead, typically in areas where farmsteads and fields were sited at a long distance from each other. Field barns are often combination buildings providing storage for hay or straw and shelter for animals.

Flail An implement comprising two linked wooden sticks used to beat grain from the ear (see Thrashing).

Granary A building for storing grain before it has been milled. Granaries are usually at first-floor level to prevent rodents and damp damaging the grain. They could be free-standing structures or be an enclosed upper floor above a cart shed or stable.

Grange A farmstead belonging to and run by a monastic house.

Grazier A person who farms grazing animals, typically for meat or wool.

Half-hipped roof A roof in which the gable wall rises above the height of the eaves but does not extend to the apex. The upper part of the gable has a short sloping roof with rafters lying axially (in the same line of the orientation of the building). In a fully hipped roof, axial rafters are of the same length as the rafters of the main roof slopes.

Hay barn A structure to shelter but ensure the adequate ventilation of hay. They are typically open-sided structures with roofs supported on high brick, stone, timber or iron piers.

Hay loft Storage for hay above cart shed or stables.

Hayrack A rack made of wood and from the later 19th century often made in iron, in which hay could be placed to be eaten by cattle, horses or sheep.

Hemmels Small open-fronted cattle shelters with their own yards, mostly found in the North East.

Hipped roof A roof with slopes at the gable ends of equal or similar length to the side slopes. The gable walls do not rise up to the apex but are of similar height to the side walls. The top ends of the rafters that do not extend to the ridge are carried on a hip rafter.

Hit-and-miss timber boarding (also called **Yorkshire boarding**) Usually vertical boarding forming a wall to animal housing which has gaps between the boards to provide ventilation for the animals.

Holding A farm.

Hovel A dialect term for cow house, formerly common in parts of the Midlands and central southern England.

Hurdle work Hurdles, usually made from hazel or another pliable wood woven to form fence panels, were arranged to form temporary enclosure for animals, especially sheep.

Husbandry Farming, the management of the production of crops and animals.

Infield-outfield system A type of agriculture practised in pastoral (usually upland) areas, where the fields closest to the farmstead or settlement were the most intensively cropped and animals were only permitted to graze after the hay or corn crop was cut. Beyond was rough grazing for sheep and cattle, which was occasionally ploughed for corn.

Kneeler A stone, often shaped, which supports the stone coping to the gable end.

Laithe house A linear range of one construction comprising a farmhouse with attached barn and usually a stable. There is no internal link between the house and the agricultural element of the range. Laithe houses are usually associated with small part-time farmers who were often involved in the textile industries of the Pennines.

Lean-to A building, usually a later addition, which is constructed against the side of a larger building. Lean-tos typically have a mono-pitch roof.

Lias A form of limestone, typically split into thin pieces.

Linear farmstead A farmstead where the farmhouse and agricultural buildings are ranged in a line, usually attached to each other.

Linhay Two-storeyed building with open-fronted cattle shelter with an open-fronted hay loft or tallet above characteristic of Devon and south Somerset. The tallet may be constructed as a conventional floor or simply created from poles. Historically the term linhay was used to refer to a wider range of buildings including field barns.

Loosebox An individual cubicle for housing fatstock, found in the form of lean-tos attached to barns or other buildings, or as continuous ranges with an optional central or rear feeding passage.

Longhouse A building that housed humans and cattle under one roof and in which there was direct access from the accommodation into the byre. The byre was always built down-slope from the accommodation.

- Originally animals and humans used the same entrance but as living standards changed the animals were often provided with separate access.
- Longstraw** Term used to describe a thatching method where the ears and butts of the straw are mixed. The stems of the straw are bruised and crushed and the result is a generally looser coat than combed wheat reed or water reed. The appearance of the roof is quite different from combed wheat reed and water reed, with a much thicker covering of straw.
- Manger** An open trough in a stable or cowshed from which horses or cattle could eat.
- Mass-walled building** Buildings where the walls are constructed of solid materials such as stone, earth or brick as opposed to timber-framed walling.
- Meadow** A field maintained for providing grass for grazing and for making hay.
- Midstrey** Term used in southern England and East Anglia for the projecting porch to a threshing barn.
- Nucleated settlement** Settlement pattern consisting mainly of villages with relatively few isolated farmsteads or hamlets.
- Oast house** A building in which hops are dried.
- Oolite** An easily worked form of limestone from the Jurassic period.
- Open-field system** A system in which farmland was held in common with the strips of individual farmers intermixed across several fields. Open-field systems rarely had hedges between strips or fields. Over time the strips were usually consolidated and eventually enclosed. Enclosure of open fields results in characteristic field patterns where the boundaries form an elongated reversed 'S'.
- Outfarm** A barn with animal accommodation either within the barn or separately, located away from the main farmstead, which avoided transporting straw and manure to and from distant fields.
- Outshot** See Lean-to.
- Pantiles** Clay roofing tiles with a wavy profile. Originated in Holland and became popular along the north-east coast. Also made in Somerset.
- Pastoral farming** Farming system based predominantly on the rearing or fattening of stock. Pastoral areas are usually predominantly grassland but in some areas arable cultivation was also important, providing fodder crops for the animals as well as corn crops for domestic use.
- Pasture/pasturage** Grazing land.
- Piecemeal enclosure** The enclosure of areas of land field by field, possibly through assarting, as opposed to the wholesale enclosure of large tracts of land and the creation of large field systems.
- Pigsty** A small building for housing pigs. Typically built as individual boxes, individually or in rows and with external feeding chutes. They were often built with their own individual yards.
- Pilaster** An ornamental rectangular column projecting from a wall.
- Portal-framed shed** Mass-produced iron-framed shed usually clad in metal sheeting.
- Poultiggery** A building combining a pigsty at ground level with a poultry house in a loft above.
- Processing room** A room in a farmstead where fodder for animals would be prepared, usually with the aid of machinery such as chaff cutters, cake breakers and root crushers.
- Quoin** The stones or brickwork set at the corner of a building. Where poor-quality building stone was used it was difficult to form corners to a building so the quoins would be made out of bricks or a better quality stone that could be worked square.
- Rickyard** A yard, usually sited close to the barn, in which the harvested corn crops could be stored in ricks to await threshing. The ricks would be built on raised platforms to protect the grain from rodents and thatched to protect from rain.
- Ridge and furrow** Long, parallel ridges of soil separated by linear depressions, caused by repeated ploughing using a heavy plough.
- Ring-fenced** A term to describe a farm in which all the fields are held in a compact block as opposed to being intermixed with the fields of other farmers.
- Root and fodder stores** Room often located close to or incorporated within the cattle housing.
- Salving** The rubbing of a tar-based mix into sheep, in order to guard against ticks, etc.
- Shelter sheds** Open-fronted structures for cattle facing on to cattle yards.
- Shippon** A dialect term for cow house, commonly used in the North West and the South West peninsula.
- Silage clamp** An airtight container for the storage of freshly cut grass.
- Stable** A building for housing horses or working oxen.
- Staddle barn** Threshing barn, usually timber framed and raised on staddle stones. Staddle barns date from the later 18th and early 19th centuries and may be an attempt to counter the greater predation of the brown rat.
- Staddle stone** Staddle stones usually comprise two stones: an upright column that is capped by a circular stone of larger diameter, typically with a rounded top, together forming a mushroom shape. Staddle stones prevented rodents climbing up into granaries, ricks and staddle barns.
- Stall** A standing for a cow or horse within a byre or stable. Stalls are usually divided by wooden or stone partitions to prevent animals biting and kicking each other.
- Thrashing (or Threshing)** The removal of grain from the ears of corn crops. Threshing by hand involved hitting the ears with a flail.
- Threshing barn** See barn.
- Tillage** The tending of land to prepare it for a crop.

Tithe A payment of a tenth of crops and produce paid to the Rector of the church for his maintenance. Payment in kind was generally changed to a cash payment in the mid-19th century although this occurred earlier in some parishes.

Topography The features of the landscape; its hills, rivers, roads, woods and settlement.

Vaccary A stock farm for cattle. Most vaccaries are of 12th- or 13th-century origin, and were built for ecclesiastical or lay lords. They are concentrated in the Pennines.

Watermeadow A valley-floor meadow that was subject to controlled flooding using a system of drains and sluices to encourage early grass growth, providing spring food for sheep. The flooding brought nutrients on to the land, improving hay crops. Watermeadows

were first developed in the West Midlands but became a characteristic feature of the chalk river valleys of Wessex.

Wattle An interwoven panel usually made from hazel used to infill timber framing. Wattle could be covered in daub or left uncovered if more ventilation was required.

Wheel house A structure which housed a horse-engine for powering threshing machinery, and typically found projecting from barns. Also known as a gin gang in northern England.

Winnowing The separation of grain from the chaff, usually achieved by throwing the grain into the air and using the wind to blow the lighter chaff away from the grain.

Yorkshire boarding See Hit-and-miss boarding.

10.0 Sources

10.1 GENERAL SOURCES

The great barns of the medieval period were the first farm buildings to attract the attention of artists and antiquarians, from the 18th century. In the early 20th century this interest broadened out to studies of other iconic building types, such as Arthur Cooke's *A Book of Dovecotes* (1920), and their inclusion in the famous regional landscape studies published by Batsford (*The Face of Britain*). A milestone in the serious academic study of the subject was the publication of a regional study by J.E.C. Peters (1969), which was followed a year later by Nigel Harvey's inspirational general history of the subject (1970, 2nd edition 1984). Peters has usefully summarised his work in a booklet (1981, 2nd edition 2003) and studies examining farm buildings in their broader national and regional contexts have been taken forward by Brunskill (1982, revised 1987), Darley (1981), Lake (1989) and Wade Martins (1991). Individual studies

have been published in the journal of *The Historic Farm Buildings Group*, founded in 1985. A major project by the Royal Commission for Historical Monuments in England, which targeted sample areas for recording, was published in 1997 (Barnwell & Giles 1997). There are a small number of county-wide studies, for example in Kent (Wade in Giles & Wade Martins 1994, pp.26–27) and Surrey (Gray 1998).

Despite an increasing level of interest in historic farm buildings, some of the smaller, less impressive building types have not been subject to the level of study and research that buildings such as barns have received. Therefore there is a limited understanding of the regional variations that may be encountered. As a consequence, the National Overview texts provided in this document for farmstead and building types are sometimes longer than their regional summaries.

There are a number of sources that provide a good overview of agricultural history and the development of farm buildings including:

The Board of Agriculture *General View of the County of...*, published from 1795 to 1814 describe the state of agriculture in individual counties at the time. They often include a map of agricultural regions and a section of farm buildings. They are inevitably biased towards the large, publicity-conscious and 'improving' farmers and estates. County *Directories* from the second half of the 19th century often include essays on different aspects of the county, such as agriculture.

The British Association for the Advancement of Science published regional studies to coincide with the venues of their annual meetings in the 1950s and '60s. Many contain useful chapters on geology and agriculture.

The various volumes of *The Agrarian History of England and Wales* (Collins, Hallam, Thirsk, Miller, Mingay, Whetham) include essays by leading scholars.

James Caird (1852) *English Agriculture in 1851–2* is a collection of county essays written for *The Times*.

Haggard R. (1902) *Rural England* describes English agriculture county by county.

Hall, A.D. (1913) *A Pilgrimage of British Farming* describes farming in various counties in 1913.

The *Journal of the Royal Agricultural Society* has prize and regional essays on farming and farm buildings, especially useful for the mid- and late 19th century.

The *Victoria County Histories* are of variable use. The more recent volumes contain chapters on agricultural history and buildings.

The *Vernacular Architecture Group* has produced, besides its journal, a comprehensive national and regional bibliography (see Hall, Michelmores and Pattison for reference).

Barnwell, P.S. & Giles, C. (1997) *English Farmsteads 1750–1914* contains a short general introduction, a general concluding chapter and regional studies from west Berkshire, south Lincolnshire, north Northumberland, east Cornwall and central Cheshire.

Brunskill, R.W. (1982) *Traditional Farm Buildings of Britain* gives a very useful farming and building overview.

Darley, G. (1981) *The National Trust Book of the Farm* contains a general introduction followed by regional studies.

The revised Pevsner's *Buildings of England*, published county by county, often have useful introductions on landscape regions and building types.

Many county archaeological and historical journals include relevant articles. National journals of particular interest include those of the following societies:

British Agricultural History Society
Historic Farm Buildings Group
Local Historian

Society for Medieval Archaeology
Society for Post-Medieval Archaeology
Rural History
Society of Architectural Historians
Society for Landscape Studies
Vernacular Architecture Group

10.2 NATIONAL BIBLIOGRAPHY

- Airs, M. (1983) 'Hovels or Helms; some further evidence from the 17th century', *Vernacular Architecture* **14**: pp.50–51
- Aitkens, P. & Wade-Martins, S. (1999) 'The farmsteads of Suffolk', *Journal of the Historic Farm Buildings Group* **13**: pp.1–17
- Alcock, N.W. (1981) *Cruck Construction*, CBA Research Report **42**: Council for British Archaeology, York
- Alcock, N.W. (2003) *Documenting the History of Houses*, British Records Association, London
- Alcock, N.W., M.W. Barley, P.W. Dixon, & R.A. Meeson (1996) *Recording Timber-framed Buildings: an illustrated Glossary*, CBA, York
- Allen, R.C. (1991) 'The two Agricultural Revolutions, 1459–1850', in Campbell, B. & M. Overton, *Land, Labour & Livestock*, Manchester University Press, Manchester
- Andrews, G.H. (1852) *Agricultural Engineering 1: Buildings*, John Weale, London
- Barley, M.W. (1961) *The English Farmhouse and Cottage*, Routledge, London
- Barnwell, P.S. (1992) 'The National Farm Survey, 1941–1943', *Journal of the Historic Farm Buildings Group* **7**: pp.12–19
- Barnwell, P.S. & Giles, C. (1997) *English Farmsteads 1750–1914*, RCHME, Swindon
- Bateman, J. (1883) *The Great Landowners of Great Britain & Ireland*, Harrison, London
- Beacham, P. [Ed] (1990) *Devon Building. An introduction to local traditions*, Devon Books, Exeter
- Beckett, J.V. (1990) *The Agricultural Revolution*, Basil Blackwell, Oxford
- Belhaven, Lord (1699) *The Country-men's Rudiment, or An Advice to the Farmers of East Lothian on how to Labour and Improve their Ground*, Heirs of A. Anderson, Edinburgh
- Benoy, W.G. (1956) *Farm Buildings. Conversions and Improvements*, Ministry of Agriculture, London
- Betty, J.H. (1993) *Know the Landscape: Estates and the English Countryside*, B.T. Batsford, London
- Beresford, M. & J. Hurst (1971) *Deserted Medieval Villages*, Lutterworth, Cambridge
- Brigden, R. (1986) *Victorian Farms*, Crowood, London
- Brigden, R. (1992) 'Bucking the Trend: New Farms between the Wars', *Journal of the Historic Farm Buildings Group* **6**: pp.35–48
- Browick, T. (1862) 'On the management of a Home Farm', *Journal of the Royal Agricultural Society of England (JRASE)* **23**: pp.247–269
- Brown, J. (1987) *Agriculture in England, A Survey of Farming 1870–1947*, Manchester University Press, Manchester
- Brunskill, R.W. (1982) *Traditional Farm Buildings of Britain*, Gollancz, London
- Caffyn, L. (1983) 'A Study of Farm Buildings in Selected Parishes of East Sussex', *Sussex Archaeological Collections* **121**: pp.149–71
- Caird, J. (1852) *English Agriculture in 1850–51*, Longmans, London
- Caird, J. (1878) *The Landed Interest and the Supply of Food*, Cassell & Co, London
- Chambers, J.D. & G.E. Mingay (1966) *The Agricultural Revolution*, B.T. Batsford, London
- Clark, J., J. Darlington & G. Fairclough (2004) *Using Historic Landscape Characterisation*, English Heritage and Lancashire County Council
- Clarke, D.W. (1972) 'Pennine Aisled Barns', *Vernacular Architecture* **4**: pp.25–7
- Clarke, D.W. (1974) 'Aisled timber barns in the Pennines', *Brigantian* **3**: pp.18–20
- Clay, C. (1985) 'Landlords and Estate Management in England', in Thirsk, J. [Ed] *Agrarian History of England and Wales* **7**, Cambridge University Press, Cambridge: pp.119–251
- Cobbett, W. [Cole Ed.] (1930) *Rural Rides*, Peter Davies, London
- Collins, E.J.T., A.K. Giles & J.G. Malleson (1989) *Ernest Edward Cook and his country estates*, University of Reading, Reading
- Collins, E.J.T. (2000) *The Agrarian History of England and Wales*, Volume VII, 1850–1914, Cambridge University Press, Cambridge
- Colvin, H. (1978, 1995, 3rd ed) *Biographical Dictionary of British Architects, 1600–1840*, Yale University Press, Newhaven and London

- Colvin, H. & J. Newman [Eds.] (1981) *Of Buildings: Roger North's Writings on Architecture*, Oxford University Press, Oxford
- Copland, S. (1866) *Agriculture, Ancient and Modern*, James Virtue, London
- Curwen, J.C. (1809) *General Hints on Agricultural Subjects*, J. Johnson, London
- Darley, G. (1981) *The National Trust Book of the Farm*, Weidenfeld & Nicholson, London
- Dean, G.A. (1844) *On the Construction of Farm Buildings*, Charles Henry Knight, Worthing
- Dean, G.A. (1850) 'On the Cost of Farm Buildings', *JRASE* **11**: pp.558–73
- Dean, G.A. (1851) *The Land Steward*, Atchley & Co., London
- Dean, G.A. (1867) *Selected Designs for Country Residences, Entrance Lodges, Farm Offices, Cottages, etc*, Charles Henry Knight, Worthing
- Dean, P. (1999) *Sir John Soane and the Country Estate*, Ashgate, Aldershot
- Denton, J.B. (1864) *The Farm Homesteads of England. A collection of plans of English homesteads existing in different parts of the country*, Chapman & Hall, London
- Denton, J.B. (1879) 'Report of the judges of the farm plans sent in for competition at the London International Exhibition, 1879', *JRASE* 2nd ser. **15**: pp.774–81
- Dyer, C. (1984) 'Evidence for Helms in Gloucestershire', *Vernacular Architecture* **15**: pp.42–5
- Dyer, C. (1986) 'English peasant building in the later Middle Ages', *Medieval Archaeology* **30**: pp.19–43
- Dyer, C. (1995) 'Sheepcotes: Evidence for Medieval Sheepfarming', *Medieval Archaeology* **39**: pp.136–64
- Dyer, C. (1997) 'History and Vernacular Architecture', *Vernacular Architecture* **28**: pp.1–8
- Edwards, B. (2005) *Farmsteads and Landscape Character in Hampshire – Pilot Project*, Unpublished report for English Heritage Forum Heritage Services
- English Heritage (1998) *Conservation-led Regeneration: the Work of English Heritage*, English Heritage, London
- English Heritage (2000) *Thatch and Thatching, a Guidance Note*, English Heritage, London
- Fox, C. (1952) *The Personality of Britain*, National Museum of Wales, Cardiff
- Fletcher, T.W. (1960–61) 'The Great Depression of English Agriculture, 1873–1896', *Economic History Review* 2nd ser. **13**: pp.417–32
- Gardiner, M. (2000) 'Vernacular Buildings and the Development of the Later Medieval Domestic Plan in England', *Medieval Archaeology* **44**: pp.159–79
- Giles, C. & S. Wade Martins [Eds.] (1994) *Recording Farm Buildings*, Historic Farm Buildings Group, Norwich
- Gray, P. (1998) *Farmsteads and Farm Buildings in Surrey*, Surrey County Council
- Grey, J. (1843) 'On Farm Buildings', *Journal of the Royal Agricultural Society of England* **4**: pp.12–13
- Hallam, H.E. (1988) *The Agrarian History of England and Wales, Volume II, 1042–1350*, Cambridge University Press, Cambridge
- Hall, A.D. (1913) *A Pilgrimage of British Farming*, John Murray, London
- Hall, L. (1983) *The Rural Houses of North Avon and South Gloucestershire*, City of Bristol Museum and Art Gallery, Bristol
- Hall, R de Z. (1972) *A Bibliography of Vernacular Architecture*, David and Charles, Newton Abbot
- Hansell, P. & J. Hansell (2001) *Dovecotes*, Shire Publications, Princes Risborough
- Harris, R. (1978) *Discovering Timber-Framed Buildings*, Shire Publications, Aylesbury
- Harvey, N. (1984) *A History of Farm Buildings in England and Wales*, 2nd ed, David and Charles, Newton Abbot
- Harvey, N. (1985) *Historic Farm Building Study, Sources of Information*, ADAS, MAFF
- Hobbs, S. (ed) (2000) *Wiltshire Glebe Terriers, 1588–1827*, Wiltshire Record Society **56**
- Hooke, D. [Ed] (1985) *The Medieval Village*, Oxford University Committee for Archaeology, Oxford
- Howkins, A. (1994) 'Peasants, servants and labourers: the marginal workforce in English agriculture', *Agricultural History Review* **42**: pp.49–62
- Hudson, J. (1850) 'On the construction of farm buildings', *JRASE* **11**: pp.280–82
- Hunt, G. (1874) 'On concrete as a building material for Farm Buildings and Cottages', *JRASE* 2nd ser. **10**: pp.211–32
- Hunt, R. (1797) 'Essay on the design of farms, farm buildings, etc', *Communications to the Board of Agriculture*, Board of Agriculture, London
- Hutton, K. (1976) 'The distribution of wheel houses in the British Isles', *Agricultural History Review* **24**: pp.30–35
- Jones, E.L. (1968) *The Development of English Agriculture 1815–1873*, Macmillan, London

- Kennedy, A.T. (1988) 'The influence of wind on the orientation of threshing barns', *Vernacular Architecture* **19**: pp.19–23
- Kent, N. (1775) *Hints to Gentlemen of Landed Property*, J. Dodsley, London
- Kerridge, E. (1967) *The Agricultural Revolution*, George Allen & Unwin, London
- Lake, J. (1989) *Historic Farm Buildings*, Blandford Press, London
- Lake, J. & P. Gaskell (2002) 'Historic Farm Buildings: Audit and Evaluation'. *Conservation Bulletin* **42** (March 2002): pp.28–9
- Lake, J. & B. Edwards (2006) 'Farmsteads and Landscapes: Towards an Integrated View', *Landscapes*, **7**: pp.1–36
- Laurence, E. (1727) *The Duty of a Steward to his Lord*, John Shuckburgh, London
- Lawrence, J. (1801) *The Modern Land Steward*, Symonds, London
- Lawson, W. (1874) *Ten years of Gentleman Farming at Blennerhasset*, Longmans, London
- Loch, J. *An Account of the Improvements on the Estates of the Marquess of Stafford*, Longmans, London
- Loudon, J.C. (1831) *Encyclopedia of Agriculture*, 2nd ed, Longman Press, London
- Lucas, R. (1997) 'When Did Norfolk Cross 'The Brick Threshold'', *Vernacular Architecture* **28**: pp.68–80
- McCann, J. (1991) 'Enquiry into the Design and Use of Dovecotes', *Transactions of the Ancient Monuments Society* **35**: pp.88–162
- McCann, J. (1996) 'The Influence of Rodents on the Design and Construction of Farm Buildings in Britain to the mid-19th Century', *Journal of the Historic Farm Buildings Group* **10**: pp.1–28
- McCann, J. (2004) *Clay and Cob Buildings*, Princes Risborough, Shire Publications
- MacDonald, S. (1975) 'The progress of the early threshing machine', *Agricultural History Review* **24**: pp.63–77
- MacDonald, S. (1981) 'Model Farms' in Mingay, G.E. [Ed] *The Victorian Countryside* I, Routledge & Kegan Paul, London: pp.214–26
- Mercer, E. 'The unfulfilled wider implications of vernacular architecture studies', *Vernacular Architecture* **28**: pp.9–12
- Miller, E. (1991) *The Agrarian History of England and Wales, Volume III 1350–1500*, Cambridge University Press, Cambridge
- Mingay, G.E. (1989) *The Agrarian History of England and Wales, Volume VI 1750–1850*, Cambridge University Press, Cambridge
- Michelmores, D.J.H. (1979) *A Current Bibliography of Vernacular Architecture*, Vernacular Architecture Group
- Moir, J. (1997) 'Vernacular Architecture: Open Air Museums and the Ecological Framework', *Vernacular Architecture* **28**: pp.20–24
- Moir, J. & J. Letts (1999) *Thatch Thatching in England 1790–1940*, English Heritage Research Transactions **5**, James and James, London
- Morton, J.C. (1842) *On the Nature and Property of Soils*, 4th ed., J. Ridgeway, London
- Morton, J.C. (1855) *Cyclopedia of Agriculture*, Blackie & Sons, Glasgow
- Morton, J.C. (1863) *The Prince Consort's Farms*, Longmans, London
- Morton, J.C. (1868) 'Town Milk' in *JRASE* 2nd ser. **5**: pp.69–98
- Moscrop, W.J. (1865) 'Covered cattle yards' in *JRASE* 2nd ser. **1**: pp.88–99
- Moscrop, W.J. (1872) 'On the housing of fattening cattle', *Transactions of the Highland and Agricultural Society of Scotland* 4th ser. **4**: pp.156–165
- Moscrop, W.J. (1890) 'Covered Cattle Yards' in *JRASE* 3rd ser. **1**: pp.473–90
- Needham, S. (1984) 'Helms, hovels and belfreys: more evidence from probate inventories', *Vernacular Architecture* **15**: pp.45–6
- Ojala, E.M. (1952) *Agriculture and Economic Progress*, Oxford University Press, Oxford
- Orwin, C.S. & E.H. Wretham (1971) *History of British Agriculture, 1846–1914*, David and Charles, Newton Abbot
- Overton, M. (1996) *Agricultural Revolution in England 1500–1850*, Cambridge University Press, Cambridge
- OAU (1995) *Dovecotes, Monuments Protection Programme Step 1 Report*, Oxford Archaeological Unit for English Heritage
- Pattison, I.R., D.S. Pattison & N.W. Alcock (1992) *A Bibliography of Vernacular Architecture, Vol III, 1977–1989*, Vernacular Architecture Group
- Pattison, I.R., D.S. Pattison & N.W. Alcock. (1999) *A Bibliography of Vernacular Architecture, Vol III, 1990–1994*, Vernacular Architecture Group
- Perren, R. (1970) 'Landlords and Agricultural Transformation, 1870–1900', *Agricultural History Review* **18**: pp.36–51

- Perren, R. (1973) 'The Landlord and Agricultural Transformation 1870–1900' in Perry, P.J., [Ed.] *British Agriculture 1875–1914*, Methuen, London: pp.109–28
- Perry, P.J. (1974) *British Farming in the Great Depression, 1870–1914: An historical geography*, David and Charles, Newton Abbot
- Perry, P.J. (1981) 'High Farming in Victorian Britain', *Agricultural History* **55**: pp.156–65
- Peters, J.E.C. (1969) *The Development of Farm Buildings in West Lowland Staffordshire up to 1880*, Manchester University Press, Manchester
- Peters, J.E.C. (1981) *Discovering Farm Buildings*, Shire Publications, Aylesbury
- Platt, C. (1969) *The Monastic Grange in Medieval England: a reassessment*, Macmillan, London
- Rackham, O. (1972) 'Grundle House: on the quantities of timber in certain East Anglian buildings in relation to local supplies', *Vernacular Architecture* **3**: pp.3–8
- Rigold, S. (1973) 'The distribution of aisled timber barns', *Vernacular Architecture* **2**: pp.20–22
- Rippon, S., with Clark, J. (2004) *Historic Landscape Analysis: Deciphering the Countryside*, Council for British Archaeology, York.
- Roberts, B.K. (1977) *Rural Settlement in Britain*, Hutchinson University Press, London.
- Roberts, B.K. *The Making of the English Village*, Batsford, London
- Roberts, B.K. (1996) *Landscapes of Settlement. Prehistory to the Present*, Routledge, London.
- Roberts, B.K. & S. Wrathmell (2000) *An Atlas of Rural Settlement in England*, English Heritage, London
- Roberts, B.K. & S. Wrathmell (2002) *Region and Place A study of English rural settlement*, English Heritage, London
- Robinson, J.M. (1983) *Georgian Model Farms*, Oxford University Press, Oxford
- Robinson, J.M. (1988) *The English Country Estate*, National Trust/Century, London
- Ryan, C. (1988) 'An Introduction to the Recording of Farm Buildings', *Journal of the Historic Farm Buildings Group* **2**: pp.56–9
- Scott, J. (1885) *Text Book of Farm Engineering: Part 4, Buildings*, Crosby Lockwood & Co., London
- Shaw, J. (1990) 'Pastures in the Sky: Scottish Tower Silos 1918–1939', *Journal of the Historic Farm Buildings Group* **4**: pp.73–91
- Sheldon, J.P. (1879) *Dairy Farming*, Cassell, London
- Sheldon, J.P. (1908) *British Dairying*, 3rd ed, Crosby Lockwood, London
- Smith, J.T. (1965) 'Timber Framed Building in England – its development and regional differences', *Archaeological Journal* **122**: pp.133–58
- Smith, P. (1975) *Houses of the Welsh Countryside*. London, HMSO
- Smith, P. (1980) 'The Architectural Personality of the British Isles' *Archaeologia Cambrensis*: pp.1–36
- Spooner, W.C. & J. Elliott (1850) 'On the Construction of Farm Buildings', *JRASE* **9**: pp.270–82
- Stamp, L.D. [Ed.] (1937–44) *The Land of Britain*, Royal Geographical Society, London
- Stephens, H. (1844) *Book of the Farm*, 4th ed, W. Blackwood, London
- Sturgess, T. (1850) 'Farm Buildings', *JRASE* **11**: pp.288–99
- Taylor, C.C. (1983) *Village and Farmstead: A History of Rural Settlement in England*, George Philip, London
- Tancred, T. (1850) 'On the Construction of Farm Buildings', *JRASE* **11**: pp.192–214
- Thirsk, J. [Ed.] (1967) *The Agrarian History of England and Wales, Volume IV, 1500–1640*, Cambridge University Press, Cambridge
- Thirsk, J. [Ed.] (1984) *The Agrarian History of England and Wales, Volume Vi, 1640–1750 (Regional Farming Systems)*, Cambridge University Press, Cambridge
- Thirsk, J. [Ed.] (1985) *The Agrarian History of England and Wales, Volume Vii, 1640–1750 (Agrarian Change)*, Cambridge University Press, Cambridge
- Thirsk, J. [Ed.] (2000) *The English Rural Landscape*, Oxford University Press, Oxford
- Thirsk, J. (1987) *England's Agricultural Regions and Agricultural History, 1500–1750*, Macmillan, London
- Thompson, F.M.L. (1959) 'Agriculture since 1870', *Victoria History of the Counties of England: A History of Wiltshire* **4**, University of London, London
- Thompson, F.M.L. (1963) *English Landed Society in the 19th Century*, Routledge & Kegan Paul, London
- Turner, M. (1980) *English Parliamentary Enclosure*, Dawson, Folkestone
- Walton, J.R. (1973) *A Study in the Diffusion of Agricultural Machinery in the 19th Century*, Oxford School of Geography Research Paper No. 5
- Wade Martins, S. (1980) *A Great Estate at Work*, Cambridge University Press, Cambridge

- Wade Martins, S. (1991) *Historic Farm Buildings*, B.T.Batsford, London
- Wade Martins, S. (1995) *Farms and Fields*, B.T.Batsford, London
- Wade Martins, S. (2002) *The English Model Farm*, Windgather Press, Macclesfield
- Wade Martins, S. & T. Williamson (1999) 'The Roots of Change', *Agricultural History Review Monograph*, British Agricultural History Society, Exeter
- Waistell, C. (1827) *Designs for Agricultural Buildings*, Longmans, London
- Warren, J.W. [Ed] (1990) *Wealden Buildings*, Wealden Buildings Study Group Coach Publications, Horsham
- Whetham, E. (1978) *The Agrarian History of England and Wales, Volume VIII, 1914–1939*, Cambridge University Press, Cambridge
- Wiliam, E. (1986) *The Historical Farm Buildings of Wales*, John Donald, Edinburgh
- Wiliam, E. (1987) 'The use of barns', *Journal of the Historic Farm Buildings Group* **1**: pp.16–24
- Young, A. (1764) 'Common farmers vindicated from the charges of being universally ignorant', *Museum Rusticanum* **3**
- Young, A. (1770) *A Farmer's Guide to the Hiring and Stocking of Farms*, W. Strachan, London
- Young, A. (1771) *A Farmer's Tour through the North of England*, 4 vols, W. Strachan, London
- Young, A. (1784) 'A Minute of the Husbandry at Holkham by Thomas William Coke', *Annals of Agriculture* **11**: p.382
- Young, A. (1793) *General View of the Agriculture of Yorkshire*, Board of Agriculture, London
- Young, A. (1804) *General View of the Agriculture of Norfolk*, Board of Agriculture, London
- Young, A. (1808) *General View of the Agriculture of Sussex*, Board of Agriculture, London
- Young, A. (1809) *General View of the Agriculture of Oxfordshire*, Board of Agriculture, London
- Young, A. (1813) *General View of the Agriculture of Suffolk*, Board of Agriculture, London

10.3 REGIONAL BIBLIOGRAPHY

- Barnatt, J. & K. Smith (2004) *The Peak District*, Windgather Press, Macclesfield
- Bearn, W. (1852) 'The farming of Northamptonshire', *JRASE* **13**: pp.44–113
- Beastall, T. (1978) *The Agricultural Revolution in Lincolnshire.*, History of Lincolnshire Committee for the Society of Lincolnshire History and Archaeology, Lincoln
- Bennett, S. & N. Bennett [Eds] (1993) *An Historical Atlas of Lincolnshire*, University of Hull Press, Hull
- Corringham, R.W. (1845) 'The farming of Nottinghamshire', *JRASE* **6**: pp.1–44
- Dury, G. (1963) *The East Midlands and the Peak*, Thomas Nelson & Sons, London
- ERDP (2002) *East Midlands Regional Chapter* www.defra.gov.uk/erdp/docs/emchapter
- Fuller, H.A. (1976) 'Landownership and the Lindsey estate', *Annals of the Association of American Geographers* **66**, **1**: pp.14–24
- Foard, G., D.Hall & T.Partida (2005) 'Rockingham Forest, Northamptonshire: The Evolution of a Landscape', *Landscapes* **6.2**: pp.1–29
- Hall, D. (1995) *The Open Fields of Northamptonshire*, Northamptonshire Record Society, Northampton
- Hey, D. (1984) 'North-west Midlands' in Thirsk, J. [Ed] *Agrarian History of England and Wales VI*: pp.129–58
- Honeybone, A. (1987) *The Vale of Belvoir*, Barracuda Books, Buckingham
- Hutton, B. (1991) *Historic Farmhouses around Derby*, Scarthin Books, Cromford
- Johnson, S.A. (1963) 'Enclosure and Changing Agricultural Landscapes in Lindsey', *Agricultural History Review* **11.2**: pp.95–102
- King, E. (1991) 'The East Midlands', in Miller (Ed) (1991): pp.67–76
- Lowe, R. (1798) *General View of the Agriculture of Nottinghamshire*, Board of Agriculture, London
- MAFF (2000) *England Rural Development Programme Appendix A4*, East Midland Region
- Mills, D. R. (1959) 'Enclosure in Kesteven', *Agricultural History Review* **7.2**: 82-97
- Millward, R. (1972) 'Leicestershire 1100–1800' in Pye, N. [Ed] *Leicester and its Region*: pp.235–263
- Mingay, G.E. (1984) 'The East Midlands' in Thirsk, J. [Ed] *Agrarian History of England and Wales VI*: pp.89–128

- Parkinson, R. (1813) *General View of the Agriculture of Rutland*, Board of Agriculture, London
- Pevsner, N. & E. Williamson (1978) *Buildings of England Derbyshire*, 2nd Edition, Penguin, Harmondsworth
- Pevsner, N. & E. Williamson (1979) *Buildings of England Nottinghamshire*, 2nd Edition, Penguin, Harmondsworth
- Pevsner, N., E. Williamson & G.K. Brandwood (1984) *Buildings of England Leicestershire and Rutland*, 2nd Edition, Penguin, Harmondsworth
- Pevsner, N. & J. Harris (1989) *Buildings of England Lincolnshire*, 2nd Edition, Penguin, Harmondsworth
- Pitt, W. (1813) *General View of the Agriculture of Leicestershire*, Board of Agriculture, London
- Pitt, W. (1813) *General View of the Agriculture of Northamptonshire*, Board of Agriculture, London
- Pusey, P. (1843) 'On agricultural improvement in Lincolnshire', *JRASE* **14**: pp.287–316
- Pye, N. [Ed] (1972) *Leicester and its Region*, Leicester University Press, Leicester
- Rawding, C. (2001) *The Lincolnshire Wolds in the nineteenth century*, History of Lincolnshire Committee, Lincoln
- RCHME (1984) *An Inventory of Architectural Monuments in North Northamptonshire*, HMSO, London
- Richardson, R.C. (1984) 'The Home Counties' in Thirsk, J. [Ed] *Agrarian History of England and Wales* Vi: pp.239–69
- Robinson, D. (1993) 'Drainage and Reclamation' in Bennett, S. & N. Bennett [Eds] *An Historical Atlas of Lincolnshire*, University of Hull Press, Hull
- Rowley, J. (1853) 'The farming of Derbyshire', *JRASE* **14**: pp.17–67
- Russell, L. & Russell, J. (1983) *Making New Landscapes in Lincolnshire* Lincolnshire History Series 5, Lincolnshire Recreational Services County Library Dept, Lincoln
- Severn, J. (1986) *Dovecotes of Nottinghamshire*, Cromwell Press, Newark
- Sturgess, R.W. (1966) 'The Agricultural Revolution on the English Clays', *Agricultural History Review* **14.2**: pp.104–21
- Walton, J.R. 'The Midlands' in *Agrarian History of England Wales 1850–1914*, **7**: p.ii Cambridge University Press, Cambridge
- Williamson, T. (2002) *The Transformation of Rural England*, Exeter University Press, Exeter
- Young, A. (1813) *General View of the Agriculture of Lincolnshire*, Board of Agriculture, London

11.0 Joint Character Area Descriptions: URLs for PDF Documents

1	North Northumberland Coastal Plain	www.countryside.gov.uk/Images/JCA01_tcm2-21114.pdf
2	Northumberland Sandstone Hills	www.countryside.gov.uk/Images/JCA02_tcm2-21115.pdf
3	Cheviot Fringe	www.countryside.gov.uk/Images/JCA03_tcm2-21116.pdf
4	Cheviots	www.countryside.gov.uk/Images/JCA04_tcm2-21117.pdf
5	Border Moors and Forests	www.countryside.gov.uk/Images/JCA5_tcm2-21066.pdf
6	Solway Basin	www.countryside.gov.uk/Images/JCA6_tcm2-21068.pdf
7	West Cumbria Coastal Plain	www.countryside.gov.uk/Images/JCA7_tcm2-21069.pdf
8	Cumbria High Fells	www.countryside.gov.uk/Images/JCA8_tcm2-21070.pdf
9	Eden Valley	www.countryside.gov.uk/Images/JCA9_tcm2-21071.pdf
10	North Pennines	www.countryside.gov.uk/Images/JCA10_tcm2-21072.pdf
11	Tyne Gap and Hadrian's Wall	www.countryside.gov.uk/Images/JCA11_tcm2-21073.pdf
12	Mid Northumberland	www.countryside.gov.uk/Images/JCA12_tcm2-21120.pdf
13	South East Northumberland Coastal Plain	www.countryside.gov.uk/Images/JCA13_tcm2-21121.pdf
14	Tyne and Wear Lowlands	www.countryside.gov.uk/Images/JCA14_tcm2-21122.pdf
15	Durham Magnesian Limestone Plateau	www.countryside.gov.uk/Images/JCA15_tcm2-21123.pdf
16	Durham Coalfield	www.countryside.gov.uk/Images/JCA16_tcm2-21124.pdf
17	Orton Fells	www.countryside.gov.uk/Images/JCA17_tcm2-21074.pdf
18	Howgill Fells	www.countryside.gov.uk/Images/JCA18_tcm2-21075.pdf
19	South Cumbria Low Fells	www.countryside.gov.uk/Images/JCA19_tcm2-21077.pdf
20	Morecambe Bay Limestones	www.countryside.gov.uk/Images/JCA20_tcm2-21078.pdf
21	Yorkshire Dales	www.countryside.gov.uk/Images/JCA21_tcm2-21079.pdf
22	Pennine Dales Fringe	www.countryside.gov.uk/Images/JCA22_tcm2-21125.pdf
23	Tees Lowlands	www.countryside.gov.uk/Images/JCA23_tcm2-21126.pdf
24	Vale of Mowbray	www.countryside.gov.uk/Images/JCA24_tcm2-21128.pdf
25	North Yorkshire Moors and Cleveland Hills	www.countryside.gov.uk/Images/JCA25_tcm2-21129.pdf
26	Vale of Pickering	www.countryside.gov.uk/Images/JCA26_tcm2-21131.pdf
27	Yorkshire Wolds	www.countryside.gov.uk/Images/JCA27_tcm2-21132.pdf
28	Vale of York	www.countryside.gov.uk/Images/JCA28_tcm2-21133.pdf
29	Howardian Hills	www.countryside.gov.uk/Images/JCA29_tcm2-21134.pdf
30	Southern Magnesian Limestone	www.countryside.gov.uk/Images/JCA30_tcm2-21135.pdf
31	Morecambe Bay and Lune Estuary	www.countryside.gov.uk/Images/JCA31_tcm2-21080.pdf
32	Lancashire and Amounderness Plain	www.countryside.gov.uk/Images/JCA32_tcm2-21082.pdf
33	Bowland Fringe and Pendle Hill	www.countryside.gov.uk/Images/JCA33_tcm2-21083.pdf
34	Bowland Fells	www.countryside.gov.uk/Images/JCA34_tcm2-21084.pdf
35	Lancashire Valleys	www.countryside.gov.uk/Images/JCA35_tcm2-21085.pdf
36	Southern Pennines	www.countryside.gov.uk/Images/JCA36_tcm2-21086.pdf
37	Yorkshire Southern Pennine Fringe	www.countryside.gov.uk/Images/JCA37_tcm2-21136.pdf
38	Nottinghamshire Derbyshire and Yorkshire Coalfield	www.countryside.gov.uk/Images/JCA38_tcm2-21137.pdf
39	Humberhead Levels	www.countryside.gov.uk/Images/JCA39_tcm2-21138.pdf
40	Holderness	www.countryside.gov.uk/Images/JCA40_tcm2-21139.pdf
41	Humber Estuary	www.countryside.gov.uk/Images/JCA41_tcm2-21140.pdf
42	Lincolnshire Coast and Marshes	www.countryside.gov.uk/Images/JCA42_tcm2-21141.pdf
43	Lincolnshire Wolds	www.countryside.gov.uk/Images/JCA43_tcm2-21142.pdf
44	Central Lincolnshire Vale	www.countryside.gov.uk/Images/JCA44_tcm2-21143.pdf
45	Northern Lincolnshire Edge With Coversands	www.countryside.gov.uk/Images/JCA45+47_tcm2-21144.pdf
46	The Fens	www.countryside.gov.uk/Images/JCA46_tcm2-21145.pdf
47	Southern Lincolnshire Edge	www.countryside.gov.uk/Images/JCA45+47_tcm2-21144.pdf
48	Trent and Belvoir Vales	www.countryside.gov.uk/Images/JCA48_tcm2-21146.pdf
49	Sherwood	www.countryside.gov.uk/Images/JCA49_tcm2-21147.pdf
50	Derby Peak Fringe	www.countryside.gov.uk/Images/JCA50_tcm2-21148.pdf
51	Dark Peak	www.countryside.gov.uk/Images/JCA51_tcm2-21087.pdf

- 52 **White Peak** www.countryside.gov.uk/Images/JCA52_tcm2-21149.pdf
- 53 **South West Peak** www.countryside.gov.uk/Images/JCA53_tcm2-21088.pdf
- 54 **Manchester Pennine Fringe** www.countryside.gov.uk/Images/JCA54_tcm2-21089.pdf
- 55 **Manchester Conurbation** www.countryside.gov.uk/Images/JCA55_tcm2-21090.pdf
- 56 **Lancashire Coal Measures** www.countryside.gov.uk/Images/JCA56_tcm2-21091.pdf
- 57 **Sefton Coast** www.countryside.gov.uk/Images/JCA57_tcm2-21095.pdf
- 58 **Merseyside Conurbation** www.countryside.gov.uk/Images/JCA58_tcm2-21096.pdf
- 59 **Wirral** www.countryside.gov.uk/Images/JCA59_tcm2-21097.pdf
- 60 **Mersey Valley** www.countryside.gov.uk/Images/JCA60_tcm2-21098.pdf
- 61 **Shropshire Cheshire and Staffordshire Plain** www.countryside.gov.uk/Images/JCA61+62_tcm2-21100.pdf
- 62 **Cheshire Sandstone Ridge** www.countryside.gov.uk/Images/JCA61+62_tcm2-21100.pdf
- 63 **Oswestry Uplands** www.countryside.gov.uk/Images/JCA063%20-%20Oswestry%20Uplands_tcm2-21174.pdf
- 64 **Potteries and Churnet Valley** www.countryside.gov.uk/Images/JCA064%20-%20Potteries%20and%20Churnet%20Valley_tcm2-21175.pdf
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- 66 **Mid Severn Sandstone Plateau** www.countryside.gov.uk/Images/JCA066%20-%20Mid%20Severn%20Sandstone%20Plateau_tcm2-21177.pdf
- 67 **Cannock Chase and Cank Wood** www.countryside.gov.uk/Images/JCA067%20-%20Cannock%20Chase%20and%20Cank%20Wood_tcm2-21178.pdf
- 68 **Needwood and South Derbyshire Claylands** www.countryside.gov.uk/Images/JCA68_tcm2-21150.pdf
- 69 **Trent Valley Washlands** www.countryside.gov.uk/Images/JCA69_tcm2-21151.pdf
- 70 **Melbourne Parklands** www.countryside.gov.uk/Images/JCA70_tcm2-21152.pdf
- 71 **Leicestershire and South Derbyshire Coalfield** www.countryside.gov.uk/Images/JCA71_tcm2-21153.pdf
- 72 **Mease/Sence Lowlands** www.countryside.gov.uk/Images/JCA72_tcm2-21154.pdf
- 73 **Charnwood** www.countryside.gov.uk/Images/JCA73_tcm2-21155.pdf
- 74 **Leicestershire and Nottinghamshire Wolds** www.countryside.gov.uk/Images/JCA74_tcm2-21156.pdf
- 75 **Kesteven Uplands** www.countryside.gov.uk/Images/JCA75_tcm2-21157.pdf
- 76 **North West Norfolk** www.countryside.gov.uk/Images/JCA076%20-%20North%20West%20Norfolk_tcm2-21179.pdf
- 77 **North Norfolk Coast** www.countryside.gov.uk/Images/JCA077%20-%20North%20Norfolk%20Coast_tcm2-21180.pdf
- 78 **Central North Norfolk** www.countryside.gov.uk/Images/JCA078+084%20-%20Central%20North%20Norfolk%20+%20Mid%20Norfolk_tcm2-21181.pdf
- 79 **North East Norfolk and Flegg** www.countryside.gov.uk/Images/JCA079%20-%20North%20East%20Norfolk%20and%20Flegg_tcm2-21182.pdf
- 80 **The Broads** www.countryside.gov.uk/Images/JCA080%20-%20The%20Broads_tcm2-21183.pdf
- 81 **Greater Thames Estuary** www.countryside.gov.uk/Images/JCA081%20-%20Greater%20Thames%20Estuary_tcm2-21184.pdf
- 82 **Suffolk Coast and Heaths** www.countryside.gov.uk/Images/JCA082%20-%20Suffolk%20Coasts%20and%20Heaths_tcm2-21185.pdf
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- 84 **Mid Norfolk** www.countryside.gov.uk/Images/JCA078+084%20-%20Central%20North%20Norfolk%20+%20Mid%20Norfolk_tcm2-21181.pdf
- 85 **Breckland** www.countryside.gov.uk/Images/JCA085_tcm2-21187.pdf
- 86 **South Suffolk and North Essex Clayland** www.countryside.gov.uk/Images/JCA086%20-%20South%20Suffolk%20and%20North%20Essex%20Clayland_tcm2-21188.pdf
- 87 **East Anglia Chalk** www.countryside.gov.uk/Images/JCA087%20-%20East%20Anglian%20Chalk_tcm2-21189.pdf
- 88 **Bedfordshire and Cambridgeshire Claylands** www.countryside.gov.uk/Images/JCA88_tcm2-21158.pdf
- 89 **Northamptonshire Vales** www.countryside.gov.uk/Images/JCA89+94_tcm2-21159.pdf
- 90 **Bedfordshire Greensand Ridge** www.countryside.gov.uk/Images/JCA090_tcm2-21190.pdf
- 91 **Yardly-Whittlewood Ridge** www.countryside.gov.uk/Images/JCA91_tcm2-21160.pdf
- 92 **Rockingham Forest** www.countryside.gov.uk/Images/JCA92_tcm2-21161.pdf
- 93 **High Leicestershire** www.countryside.gov.uk/Images/JCA93_tcm2-21162.pdf
- 94 **Leicestershire Vales** www.countryside.gov.uk/Images/JCA89+94_tcm2-21159.pdf
- 95 **Northamptonshire Uplands** www.countryside.gov.uk/Images/JCA95_tcm2-21163.pdf

- 96 **Dunsmore and Feldon** www.countryside.gov.uk/Images/JCA96_tcm2-21164.pdf
- 97 **Arden** www.countryside.gov.uk/Images/JCA097%20-%20%20Arden_tcm2-21191.pdf
- 98 **Clun and North West Herefordshire Hills** www.countryside.gov.uk/Images/JCA098%20-%20Clun%20and%20North%20West%20Herefordshire%20Hills_tcm2-21192.pdf
- 99 **Black Mountains and Golden Valley** www.countryside.gov.uk/Images/JCA099%20-%20Black%20Mountains%20and%20Golden%20Valley_tcm2-21193.pdf
- 100 **Herefordshire Lowlands** www.countryside.gov.uk/Images/JCA100%20-%20Herefordshire%20Lowlands_tcm2-21194.pdf
- 101 **Herefordshire Plateau** www.countryside.gov.uk/Images/JCA101+102%20-%20Herefordshire%20Plateau%20+%20Teme%20Valley_tcm2-21195.pdf
- 102 **Teme Valley** www.countryside.gov.uk/Images/JCA101+102%20-%20Herefordshire%20Plateau%20+%20Teme%20Valley_tcm2-21195.pdf
- 103 **Malvern Hills** www.countryside.gov.uk/Images/JCA103%20-%20Malvern%20Hills_tcm2-21196.pdf
- 104 **South Herefordshire & Over Severn** www.countryside.gov.uk/Images/JCA104%20-%20South%20Herefordshire%20and%20Over%20Severn_tcm2-21197.pdf
- 105 **Forest of Dean and Lower Wye** www.countryside.gov.uk/Images/JCA105%20-%20Forest%20of%20Dean%20and%20Lower%20Wye_tcm2-21198.pdf
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- 108 **Upper Thames Clay Vales** www.countryside.gov.uk/Images/JCA108%20-%20Upper%20Thames%20Clay%20Vales_tcm2-21201.pdf
- 109 **Midvale Ridge** www.countryside.gov.uk/Images/JCA109%20-%20Midvale%20Ridge_tcm2-21202.pdf
- 110 **The Chilterns** www.countryside.gov.uk/Images/JCA110%20-%20Chilterns_tcm2-21203.pdf
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- 120 **Wealden Greensand** www.countryside.gov.uk/Images/JCA120_tcm2-21552.pdf
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- 130 **Hampshire Downs** www.countryside.gov.uk/Images/JCA130%20-%20Hampshire%20Downs_tcm2-21209.pdf
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- 132 **Salisbury Plain and West Wiltshire Downs** www.countryside.gov.uk/Images/JCA132%20-%20Salisbury%20Plain%20and%20West%20Wiltshire%20Downs_tcm2-21211.pdf
- 133 **Blackmoor Vale and Vale of Wardour** www.countryside.gov.uk/Images/JCA133%20-%20Blackmoor%20Vale%20and%20Vale%20of%20Wardour_tcm2-21212.pdf
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- 137 **Isle of Portland** www.countryside.gov.uk/Images/JCA137+138%20-%20Isle%20of%20Portland%20%20+%20Weymouth%20Lowlands_tcm2-21216.pdf

- 138 **Weymouth Lowlands** www.countryside.gov.uk/Images/JCA137+138%20-%20Isle%20of%20Portland%20%20+%20Weymouth%20Lowlands_tcm2-21216.pdf
- 139 **Marshwood and Powerstock Vales** www.countryside.gov.uk/Images/JCA139%20-%20Marshwood%20and%20Powerstock%20Vales_tcm2-21217.pdf
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- 143 **Mid Somerset Hills** www.countryside.gov.uk/Images/JCA142+143%20-%20Somerset%20Levels%20and%20Moors%20+%20Mid%20Somerset%20Hills_tcm2-21220.pdf
- 144 **Quantock Hills** www.countryside.gov.uk/Images/JCA144%20-%20Quantock%20Hills_tcm2-21221.pdf
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- 146 **Vale of Taunton and Quantock Fringe** www.countryside.gov.uk/Images/JCA146%20-%20Vale%20of%20Taunton%20and%20Quantock%20Fringes_tcm2-21223.pdf
- 147 **Blackdowns** www.countryside.gov.uk/Images/JCA147%20-%20Blackdowns_tcm2-21224.pdf
- 148 **Devon Redlands** www.countryside.gov.uk/Images/JCA148%20-%20Devon%20Redlands_tcm2-21225.pdf
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