



Historic Farmsteads

Preliminary Character Statement: West Midlands Region



ENGLISH HERITAGE



The Countryside Agency
**Landscape
Access
Recreation**

Acknowledgements

The text of this document was prepared by Jeremy Lake and Bob Edwards with contributions to the national and regional sections from Susanna Wade Martins and additional assistance by Peter Gaskell and Julie Ryan. It was designed by Steve Dent and edited by Nicki Marshall of BiscuitBox Ltd. The research project was commissioned by English Heritage and the Countryside Agency and managed by Peter Gaskell of the University of Gloucestershire. The assistance of the following people is gratefully acknowledged: Freya Edwards and the many farmers and owners of buildings who gave their time to discuss their farm buildings and allowed access for photography.

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.

English Heritage is the Government's adviser on the historic environment. Central to the role of English Heritage is the advice it gives to local planning authorities, government departments and others on the conservation of historic buildings, sites and areas, archaeology on land and underwater, designed landscapes and the historic aspects of the landscape as a whole. English Heritage also has a duty to enhance people's understanding and enjoyment of their heritage and, as part of this, it manages an estate of over 400 historic properties open to the public.

The Countryside Agency is the statutory body working to conserve and enhance England's countryside. The aim of the Countryside Agency's Landscape, Access and Recreation division is to help everyone respect, protect and enjoy the countryside, protect natural landscapes, and encourage access to, enjoyment of and sustainable management and use of the countryside.

In accordance with the Natural Environment and Rural Communities Act 2006, English Nature, the Rural Development Service and the Countryside Agency's Landscape, Access and Recreation division are working towards integration as a single body: Natural England. It will work for people, places and nature with responsibility for enhancing biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas, promoting access, recreation and public well-being, and contributing to the way natural resources are managed so that they can be enjoyed now and for future generations.

The document should be cited as:

Historic Farmsteads. Preliminary Character Statement: West Midlands Region.

Published in August 2006 by the University of Gloucestershire in association with English Heritage and the Countryside Agency.

Copyright 2006 Authors, University of Gloucestershire, English Heritage and the Countryside Agency

The text in this document may be reproduced free of charge in any format or medium without specific permission, subject to the material not being used in a derogatory way. The copyright holders must be acknowledged, and the title of the publication must be included in any published reference.

All photographs and illustrations are individually credited.

Countryside and Community Research Unit
Dunholme Villa
The Park
Cheltenham
Gloucestershire
GL50 2RF

Contents

SUMMARY	6		
1.0 INTRODUCTION	10	4.1.5 1940 to the present	29
2.0 UNDERSTANDING CONTEXT AND CHARACTER	12	4.2 FARMING IN THE WEST MIDLANDS	30
2.1 LANDSCAPE CHARACTER AND CHARACTERISATION	12	4.2.1 Staffordshire Peak District	31
2.2 THE CHARACTER OF THE WEST MIDLANDS REGION: AN INTRODUCTION	12	4.2.2 Cheshire, Shropshire and Staffordshire Plain	31
2.3 THE CHARACTER OF RURAL SETTLEMENT	14	4.2.3 Oswestry Uplands	31
2.3.1 National Framework	14	4.2.4 Potteries and Churnet Valley	31
2.3.2 Rural Settlement in the West Midlands	16	4.2.5 Shropshire Hills	32
3.0 BUILDING MATERIALS	18	4.2.6 Mid Severn Sandstone Plateau	33
3.1 NATIONAL OVERVIEW	18	4.2.7 Cannock Chase and Cank Wood	34
3.1.1 Walling	19	4.2.8 Needwood Forest and South Derbyshire Claylands and Trent Valley Washlands	34
3.1.1.1 Temporary structures	19	4.2.9 Mease/Sence Lowlands	34
3.1.1.2 Mass walling	19	4.2.10 Dunsmore and Feldon	34
3.1.1.3 Timber frame	19	4.2.11 Arden	34
3.1.1.4 Timber cladding	20	4.2.12 Clun and North West Herefordshire Hills	35
3.1.1.5 Corrugated iron	20	4.2.13 Black Mountains and Golden Valley	36
3.1.2 Roofing	20	4.2.14 Herefordshire and Worcestershire Lowlands and Valleys	36
3.1.2.1 Thatch	20	4.2.15 Malvern Hills	36
3.1.2.2 Plain clay tiles and stone slates	20	4.2.16 South Herefordshire and Over Severn	37
3.1.2.3 Corrugated iron and other prefabricated modern materials	20	4.2.17 Severn and Avon Vales	38
3.2 Building Materials in the West Midlands	21	5.0 FARMSTEAD TYPES	39
3.2.1 Walling	21	5.1 NATIONAL OVERVIEW	39
3.2.1.1 Stone	21	5.1.1 Linear plans	41
3.2.1.2 Earth	21	5.1.2 Parallel plans and L-shaped plans	41
3.2.1.3 Timber	21	5.1.3 Dispersed plans	41
3.2.1.4 Brick	21	5.1.4 Loose courtyard plans	41
3.2.2 Roofing	24	5.1.5 Regular courtyard plans	42
3.2.2.1 Thatch	24	5.2 FACTORS INFLUENCING FARMSTEAD CHARACTER	42
3.2.2.2 Slate	24	5.2.1 Farm size	42
3.2.2.3 Tiles	24	5.2.2 Estate policy	44
4.0 AGRICULTURAL HISTORY AND FARM BUILDINGS	25	5.2.3 Local variation of farming systems	44
4.1 AN INTRODUCTION TO ENGLISH AGRICULTURAL HISTORY AND FARM BUILDINGS: THEIR DEVELOPMENT, SURVIVAL AND SIGNIFICANCE	25	5.2.4 Internal workings of the farmyard	44
4.1.1 Up to 1550	25	5.2.5 Development of farming systems	44
4.1.1.1 Survival and value	25	5.3 FARMSTEAD PLANS IN THE WEST MIDLANDS	44
4.1.2 1550 to 1750	25	6.0 KEY BUILDING TYPES: CROP STORAGE AND PROCESSING	46
4.1.2.1 Survival and value	26	6.1 BARNs	46
4.1.3 1750 to 1880	26	6.1.1 National Overview	46
4.1.3.1 Survival and value	27	6.1.1.1 Plan form	46
4.1.4 1880 to 1940	28	6.1.1.2 Size	47
4.1.4.1 Survival and value	29	6.1.1.3 Combination barns	47
		6.1.1.4 Evidence for mechanisation	47
		6.1.1.5 Evidence for reuse and adaptation	47
		6.1.2 Barns in the West Midlands	47
		6.1.2.1 Threshing Barns	47
		6.1.2.2 Combination Barns	49
		6.1.2.3 Mechanisation	50

6.2	GRANARIES	50	7.4	PIG HOUSING	66
6.2.1	National Overview	50	7.4.1	National Overview	66
6.2.2	Granaries in the West Midlands	53	7.4.2	Pig housing in the West Midlands	66
6.3	CART SHEDS AND IMPLEMENT SHEDS	53	7.5	SHEEP HOUSING	67
6.3.1	National Overview	53	7.5.1	National Overview	67
6.3.2	Cart sheds in the West Midlands	53	7.5.2	Sheep housing in the West Midlands	67
6.4	HOP KILNS	54	7.6	DOVES AND POULTRY	67
6.4.1	National Overview	54	7.6.1	National Overview	67
6.4.2	Hop Kilns in the West Midlands	56	7.6.2	Doves and poultry in the West Midlands	68
6.5	HAY BARNs AND OTHER CROP-RELATED BUILDINGS	56	7.6.2.1	Dovecotes	68
6.5.1	National Overview	56	7.6.2.2	Poultry yards	70
6.5.2	Hay barns and other cider houses in the West Midlands	57			
7.0	KEY BUILDING TYPES: ANIMALS AND ANIMAL PRODUCTS	58	8.0	KEY BUILDING TYPES: OTHER FARM BUILDINGS	71
7.1	CATTLE HOUSING	58	8.1	OUTFARMS AND FIELD BARNs	71
7.1.1	National Overview	58	6.1.1	National Overview	71
7.1.1.1	Longhouses	58	6.1.2	Outfarms and field barns in the West Midlands	72
7.1.1.2	Ox houses	58			
7.1.1.3	Combination barns	58	8.2	MINOR AND MISCELLANEOUS BUILDINGS	72
7.1.1.4	Open-fronted sheds	58	6.2.1	National Overview	72
7.1.1.5	Lean-tos (outshots)	59	6.2.2	Minor and miscellaneous buildings in the West Midlands	72
7.1.1.6	Free-standing cow houses	59			
7.1.1.7	Looseboxes for fatstock	60	9.0	GLOSSARY	73
7.1.1.8	Covered yards	60			
7.1.2	Cattle housing in the West Midlands	60	10.0	SOURCES	77
7.2	DAIRIES	63	10.1	GENERAL SOURCES	77
7.2.1	National Overview	63	10.2	NATIONAL BIBLIOGRAPHY	78
7.2.2	Dairies in the West Midlands	64	10.3	REGIONAL BIBLIOGRAPHY	82
7.3	STABLES	64			
7.3.1	National Overview	64	11.0	JOINT CHARACTER AREA DESCRIPTIONS: URLS FOR PDF DOCUMENTS	84
7.3.2	Stables in the West Midlands	65			

Illustrations

Figure 1	Geology & landscape character in the West Midlands	13–14	Figure 18	Isometric view of a large, regular courtyard farmstead in Northumberland and a L-plan dairy farm on the Cheshire Plain	43
Figure 2	Rural settlement in the West Midlands	15	Figure 19	Power in barns: national examples	48
Figure 3	Distribution of cruck-framed and aisled barns	18	Figure 20	Barns in the West Midlands	49
Figure 4	Cruck and aisled barns	19	Figure 21	Interior of a granary showing grain bins and example of a louvered vent	50
Figure 5	Distribution of listed earth-walled agricultural buildings in England	19	Figure 22	Isometric drawings of a free-standing granary on saddle stones and a granary at first floor level as part of a range of buildings	51
Figure 6	Distribution of listed timber-framed barns in England	20	Figure 23	Granaries and cart sheds in the West Midlands	52
Figure 7	Distribution of listed thatched agricultural buildings in England	21	Figure 24	Distribution of listed hop kilns/oast houses in England	53
Figure 8	Examples of walling materials in the West Midlands	22	Figure 25	Hop kilns in the West Midlands	54
Figure 9	Examples of roofing materials in the West Midlands	23	Figure 26	Hay barns: national examples	55
Figure 10	Distributions of listed farmhouses in England pre-1550 and 1550–1750	26	Figure 27	Distribution of listed cider houses in England	56
Figure 11	Distributions of listed barns in England pre-1550 and 1550–1750	28	Figure 28	Cider-making related buildings and structures in the West Midlands	56
Figure 12	Farmsteads in the landscape: Whixhall, Shropshire (Shropshire, Cheshire and Staffordshire Plain)	35	Figure 29	Principal forms of cattle housing: some national examples	59
Figure 13	Farmsteads in the landscape: Hopton Wafers, Shropshire (Shropshire Hills)	37	Figure 30	Distribution of listed lincages in England	60
Figure 14	Farmsteads in the landscape: Radway, Warwickshire (Dunsmore and Feldon)	32	Figure 31	Isometric drawings of cow sheds	61
Figure 15	Farmsteads in the landscape: King's Caple, Herefordshire (South Herefordshire and Over Severn)	33	Figure 32	Cattle housing in the West Midlands	62–3
Figure 16	Farmstead plan types	40	Figure 33	Interior of a stable	64
Figure 17	Distribution of listed longhouses in England	42	Figure 34	Stables in the West Midlands	65
			Figure 35	Pigsties: national examples	66
			Figure 36	Distribution of listed dovecotes in England	68
			Figure 37	Accommodation for birds: national examples	68–9
			Figure 38	Outfarms and field barns in the West Midlands	71

Summary: West 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

Broadly, the West Midlands Region is an area of dispersed settlement, except where nucleated settlement predominates in the eastern fringe from Worcestershire east of the Severn to the Trent and other river valleys in Staffordshire. Much of the Region was enclosed by 1750, smaller farms often being concentrated in areas

characterised by early isolated farmsteads. The small hamlets and farmsteads set in the anciently enclosed landscapes of south Shropshire, Herefordshire and Worcestershire are amongst the most intact old landscapes in the country. In many areas, such as the Black Country and common-edge parts of Shropshire, an intensively settled landscape developed with chains of small hamlets associated with industrial activities, such as mining, furnaces and transport. Some remaining areas of heaths, forests and mosses were brought into agricultural use in the late 18th to mid-19th century. Later, regular enclosures are also found on areas of higher ground, such as the upland parts of the Shropshire and Herefordshire Hills.

There was already a strong degree of diversity within the Region by the 15th century: large flocks of sheep in the Peak District and on the Shropshire and Herefordshire Hills, the concentration of dairying and cattle breeding in the north, of beef production in Warwickshire and of mixed arable-based husbandry in other lowland areas such as the Herefordshire plain. In the same century there was a large-scale decline in arable cultivation, and an acceleration in the abandonment and shrinkage of settlements and the amalgamation and growth of holdings. Only in the extreme south of the Region, in Herefordshire, did arable farming continue as a major element of the agricultural economy. There were some strong local distinctions, for example between the Feldon and Arden areas of Warwickshire, the former being an open-field landscape transformed by enclosure by the early 19th century and the latter an ancient wood-pasture landscape of dispersed settlement and comparatively small farmsteads, with the exception of the river valleys where larger arable farms developed.

By the 17th century industry was providing alternative employment and enabling small-scale farming to be combined with other sources of income; for example, in the Shropshire and Herefordshire Hills farming was combined with industrial activities such as quarrying and coal and lead mining. In these areas smallholdings and squatter's cottages could be found fringing and encroaching onto the moorland, which provided common grazing, whilst small fields provided hay meadows.

Except for areas of sheep grazing on the Peaks to the north, cattle were the most important animals kept, mainly for dairying. This was especially the case in north Shropshire and Staffordshire, which effectively comprised a continuation of the Cheshire plain.

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 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

Across parts of the Region there is a great availability and diversity of stone for building, from the red sandstones of north and east Shropshire and Staffordshire, and the millstone grit of the South West Peak, to the limestones and siltstones found across central Shropshire and into Herefordshire and the red, pink and grey sandstones found across much of Herefordshire.

Red ironstone and Cotswold limestone is found in the south-east corner of Warwickshire, close to the Cotswolds and Northamptonshire Uplands.

Earth-walled buildings, locally known as mud, are found in eastern Warwickshire (mostly in the Dunsmore and Feldon area) using the yellow-brown Liassic subsoil.

This Region, and the adjacent border area of Wales, is especially rich in timber framing, particularly in Herefordshire and Shropshire. Square panel framing is a distinctive regional tradition that extends into the adjacent parts of the North West and South West, as also is the application of weatherboarding as a common form of cladding in combination with tall, stone plinths and gable walls. A similar combination of weatherboarded framing (often in softwood) and brick walls is associated with barns of late 18th- to early 19th-century date. Timber-framed buildings continued to be erected in Herefordshire into the 19th century.

By the 17th century brick was replacing timber framing in many parts of the Region, and is now the typical building material in many areas.

Split sandstone slates are found in the east of the Region, especially in Shropshire and Herefordshire. Welsh slates and clay tiles, the latter manufactured in the predominant brick areas of north Shropshire and Staffordshire, were used from an early date but from the

late 18th century replaced locally produced roofing materials (including thatch) in many areas.

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

Linear plans are distributed across the Region but are most predominant in the north and west. Farmsteads were more commonly planned around yards in a variety of ways. **Loose courtyard** arrangements are associated with large arable-based farmsteads, which would have had two or more barns, most notably on larger high-status steadings and the corn lands and vales of Herefordshire and Worcestershire. Formal courtyard farms were most common on the great estates, particularly in Staffordshire and Shropshire, where they often made major architectural statements. **Regular U- and E-plan yards** are concentrated in the lowland and vale landscapes and in areas where new farms were built on newly enclosed land. By the mid-19th century most farmsteads had informal yards defined by their buildings

that usually comprised an earlier barn, often extended as grain output increased at the end of the 18th century (in arable areas there was possibly a second barn), a granary above a cart shed and a separate cow house and stable block. **L- and T-shaped plans**, with hay barns projecting from the main range, are concentrated in dairying areas, particularly the Shropshire and Staffordshire Plain. Small-scale clusters of buildings are characteristic of small farms in the rural-industrial areas of the Region.

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

The most common type of barn has a central threshing floor; the usual five-bay length being exceeded on larger steadings and in arable-based areas such as the Herefordshire Lowlands and Plateau. Up until the 1840s,

barns of this form continued to be built on new and earlier holdings alike, although increasingly of stone and brick. The requirement for more housing for cattle from the later 18th century, and the increase in the use of mechanisation during the 19th century resulted in barns throughout the Region developing as multi-functional buildings. Wheel houses for horse-powered machinery are found throughout the Region, and are a feature particularly of the larger farms on the Staffordshire and Shropshire Plain, the Mid Severn Plateau and the Shropshire Hills, the high expense of labour in this part of the Region resulting from the availability of employment in the growing industrial centres around Stoke and the Black Country.

Combination barns, with cattle occupying all or part of the ground floor, are found in the western hills and the northern dairying areas. Examples, initially of a high status, date from the later 16th century in the dairying areas of the Shropshire and Staffordshire plain.

There are some very early free-standing timber-framed granaries and stables, dating from the 17th century, in the west of the Region.

Hop kilns are a highly characteristic feature of the landscape of the Teme Valley, lowlands and plateau in Herefordshire, south Shropshire and west Worcestershire. This is the second major concentration of such structures outside the South East (where they are known as oast houses).

Growing of apples for cider was important in Herefordshire and parts of Worcestershire from the medieval period, becoming large-scale from the mid-17th century, and cider houses are a feature of many farms.

The Region has some very early and important examples of accommodation for cattle. In the Welsh borders area a number of former longhouses survive, some now serving only an agricultural function. The longhouse tradition appears to have continued into the 18th century in this area. In some cases cattle housing formed part of other buildings, particularly multi-functional combination barns which are concentrated in the Peaks area and in the west of the Region from the Shropshire and Staffordshire Plain to south Herefordshire. Single-storey lofted cow houses, dating from the 17th century, are also found. These buildings are equivalent in date to the combination barns of the Pennines area and of the wood-pasture landscapes in the South East and East of England. The great majority of cattle housing is of 19th-century date, and on the Staffordshire and Shropshire Plain includes large-scale examples similar to that found across the border in Cheshire.

Pigsties are most strongly associated with the dairying areas of Shropshire and Staffordshire and in the cider-producing area south of the Region..

In the former open-field areas of Warwickshire and Herefordshire isolated threshing barns dating from the 17th and 18th centuries are found outside the nucleated cores of settlements. Outfarms in areas of parliamentary enclosure and on large estate-managed farms are typically of mid-19th-century date, so these examples are amongst the earliest surviving in the country. Field barns are found in the pastoral areas of the Peak District, where small stone buildings providing haylofts above and livestock accommodation below are to be found in the corners of many fields. Most date from the late 18th and 19th centuries.

I.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 West 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 West 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 West 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 WEST MIDLANDS REGION: AN INTRODUCTION

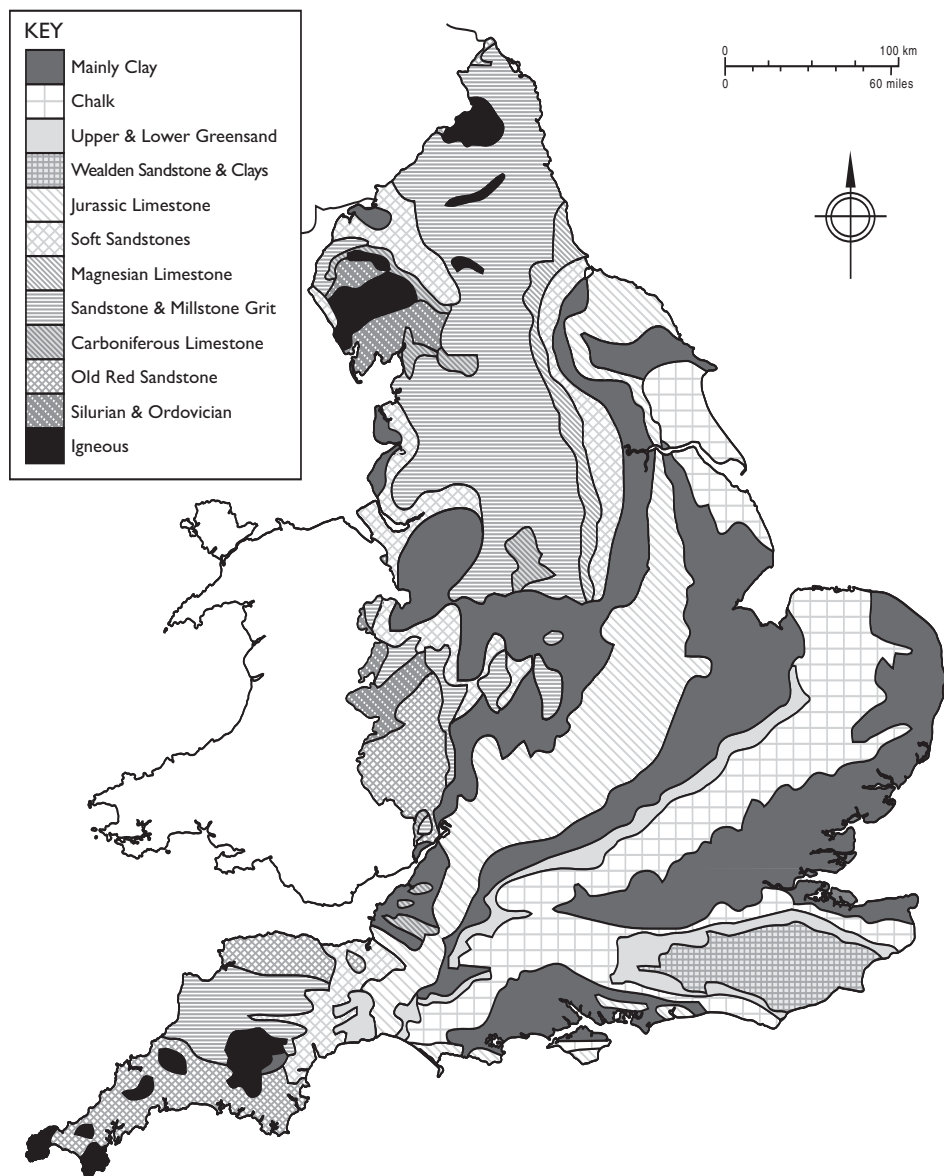
The West Midlands Region comprises the counties of Shropshire, Staffordshire, Herefordshire, Worcestershire and Warwickshire and the Unitary Authority areas of Stoke on Trent, Wrekin, Dudley and the West Midlands Metropolitan County. The Region covers much of what has been described as 'the Midlands Triangle' – a large central plain that is undulating rather than flat – and is surrounded by areas of upland. To the west are the Shropshire and Herefordshire hills and Welsh borderlands, to the north are the moorlands of the Pennines, and to the south-east the limestone scarp of the Cotswolds.

Geologically the oldest, hardest rocks occur as isolated outliers in the South Shropshire and Malvern Hills, whilst Herefordshire is dominated by the Red Devonian Sandstones and Marls that produce the characteristic red Herefordshire soils. To the north, into Shropshire, limestones and shales give rise to ridge and valley scenery. Warwickshire, central Staffordshire and Worcestershire are dominated by clays whilst the carboniferous rocks of the centre of the Region provided the coal and iron on which the Region's previous prosperity was based (MAFF 2000, pp.5–9).

The Region contains a rich variety of landscapes, from the lowland fruit-growing areas of the Vale of Evesham along the Avon valley and the fertile arable lands of

IA The geology of England
 England displays a huge diversity in geology, with a greater variety in small areas than anywhere else in Europe. The West Midlands Region has a very varied geology offering a wide range of building stones available for walling and roofing make a major contribution to local distinctiveness in parts of the Region.

*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*



central Herefordshire, to the barren uplands of the north-east Staffordshire Moorlands and the Shropshire hills and the urban and industrial areas of the Black Country and the West Midlands.

Along the western fringe of the area are a number of upland character areas, including the Oswestry Uplands, the Clun and North-West Herefordshire Hills and the Black Mountains, which mark the transition between England and Wales and upland and lowland landscapes. Welsh place-names, scattered farmsteads and small, irregular fields on the lower slopes with large regular enclosures of 18th- and 19th-century date on the higher ground are typical features of this border country where poor-quality Grade 4 land and a cold, wet climate are significant limiting factors to agriculture.

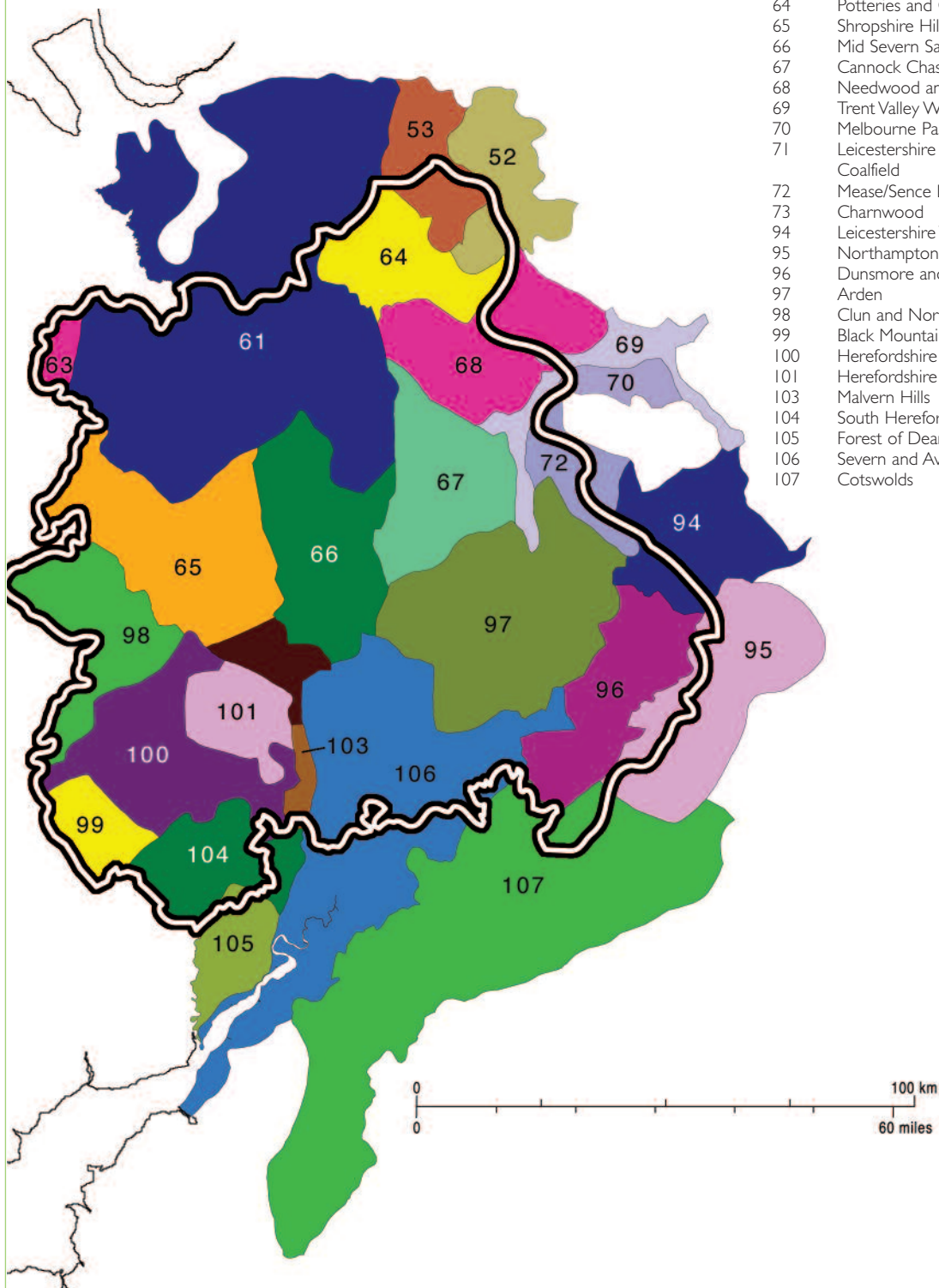
To the east of the border areas the landscape is broadly one of rolling, gentle undulations divided by hills and plateaux, much of which is Grade 2 land. In the north of the Region the Shropshire, Cheshire and Staffordshire Plain is an extensive, predominantly dairying area with

increasing arable to the south-east interrupted by red sandstone ridges and marked by mosses and meres. Cannock Chase and Cank Wood represent an area with strong contrasts between densely populated urban areas and the heavily wooded heathland of Cannock Chase itself. The north-eastern corner of the Region extends into the South West Peak character area which covers the southern part of the Pennines, where the upland landscape of moorland, isolated farmsteads and dry-stone walls of millstone grit are characteristic of the higher areas. Here poor-quality Grade 4 and 5 land predominates, and stock rearing and, in the foothills, dairying form the main elements of the agriculture of the area.

Some of the best quality agricultural land is to be found across Herefordshire and Worcestershire in the Herefordshire Plateau and Teme Valley, the Herefordshire Lowlands, South Herefordshire and Over Severn, and in the Severn and Avon Vales character areas. The majority of the Grade 1 and 2 land in the Region is concentrated in these areas, where intensive

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

JCA number	JCA name
52	White Peak
53	South West Peak
61	Shropshire, Cheshire and Staffordshire Plain
63	Oswestry Uplands
64	Potteries and Churnet Valley
65	Shropshire Hills
66	Mid Severn Sandstone Plateau
67	Cannock Chase and Cank Wood
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
94	Leicestershire Vales
95	Northamptonshire Uplands
96	Dunsmore and Feldon
97	Arden
98	Clun and North West Herefordshire Hills
99	Black Mountains and Golden Valley
100	Herefordshire Lowlands
101	Herefordshire Plateau
103	Malvern Hills
104	South Herefordshire and Over Severn
105	Forest of Dean and Lower Wye
106	Severn and Avon Vales
107	Cotswolds



arable production is typical, although rich meadowland is found along some of the valleys. Across Herefordshire, and extending into the adjacent parts of Shropshire and Worcestershire, orchards and hop fields are characteristic. The Vale of Evesham and the upper Avon and Leadon valleys are important horticultural areas. The southernmost part of the Region includes the edge of the Cotswolds with its characteristic steep wooded slopes and open expanses of dry-stone-wall

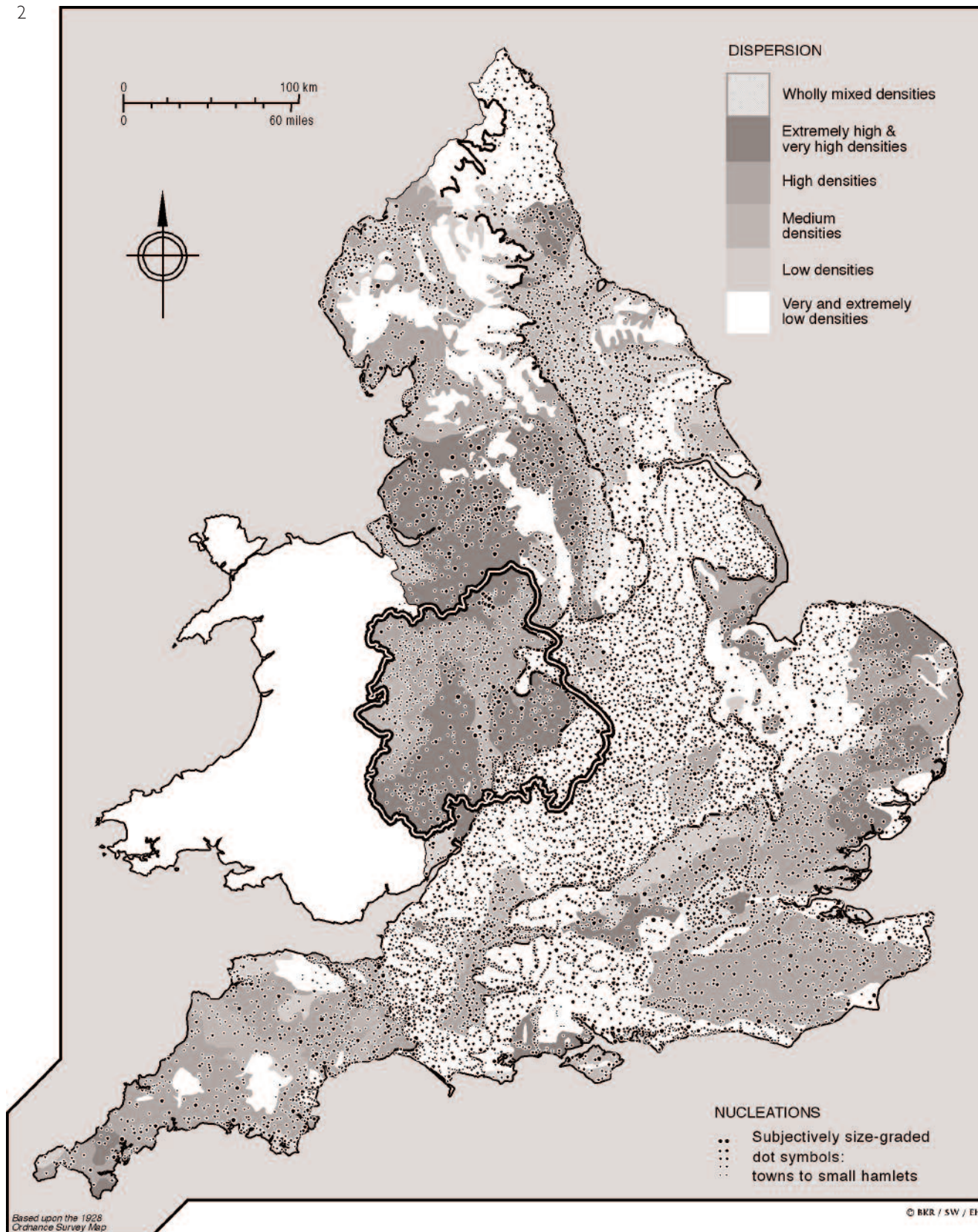
enclosed fields and limestone-built houses and farmsteads.

Across eastern Worcestershire and Gloucestershire, where the climate is warmer and drier than the upland parts of the Region, the majority of the land is Grade 3, of good to moderate quality, and is used for cereals and grassland. Where there are lighter soils a more varied range of crops is grown.

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 majority of the area of the West Midlands Region lies in the Northern and Western Province with high levels of dispersed settlement. Only small areas of east Staffordshire and south-east Warwickshire extend into the village-dominated Central Province. Based upon 'England: Rural Settlement in the mid-19th century'. Source: *An Atlas of Rural Settlement in England* (2000) ©English Heritage/Roberts, B.K. and Wrathmell, S.

2



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.

2.4.2 RURAL SETTLEMENT IN THE WEST MIDLANDS

The eastern fringe of the Region, running from the area to the east of the Severn (in the Severn and Avon Vale character area) and into the valleys of the Trent and other rivers to the north-east of Birmingham, lies within the Central Province. Here nucleated settlement predominates, the formerly extensive common arable fields having been subject to piecemeal enclosure at varying rates from the 14th century.

Most of the Region, however, lies within Roberts and Wrathmell's Northern and Western Province where dispersed settlement and small nucleations prevail (Roberts 1987, p.171; Roberts & Wrathmell 2000). Within this general pattern of settlement there are areas that have a greater density of dispersed settlement.

Across Herefordshire and Worcestershire there are numerous small hamlets and farmsteads set in an anciently enclosed landscape, possibly 'the least damaged set of old landscapes in the country' (Roberts & Wrathmell 2000, p.56). Very high densities of dispersed settlement are also found in the Shropshire and Staffordshire Plain and north-west Warwickshire, particularly in the Forest of Arden where many moated sites and 'green' place-names testify to colonisation from earlier settlement cores in the period 1000 to 1300. The patterns of enclosure are extremely complex, and range from small-scale and irregular fields enclosed from woodland before the 14th century, enclosures relating to

isolated farmsteads and hamlets within which were communally farmed strips, to – especially around larger nucleated settlements in the river valleys – open fields which remained unenclosed until the 19th century (Roberts and Wrathmell 2002, pp. 129-131, 164-9).

One of the areas of highest dispersion in the 19th century was the Black Country, where a largely rural area characterised by largely dispersed settlements in the 18th century developed into an intensively settled landscape with chains of small hamlets associated with industrial activities such as mining, furnaces and transport (Roberts & Wrathmell 2000, pp.55–6).

3.0 Building Materials

3.1 NATIONAL OVERVIEW

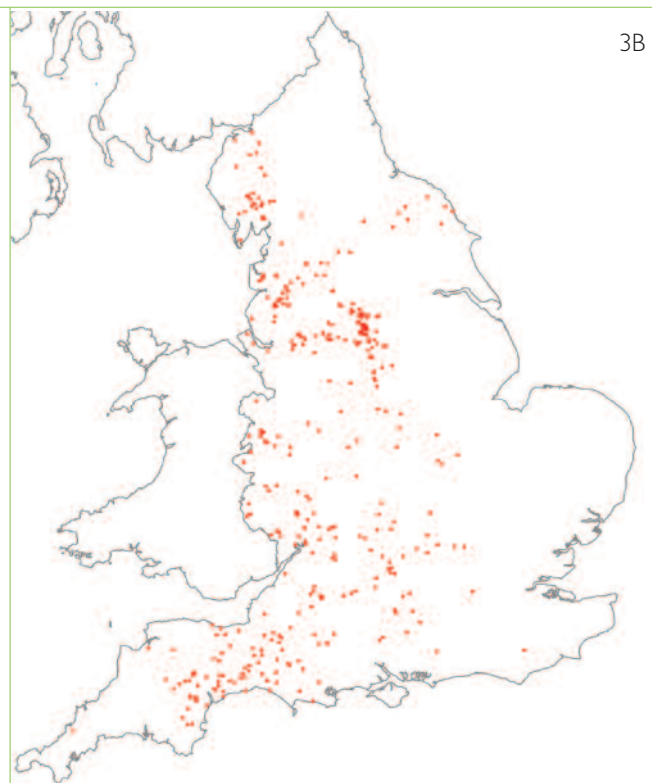
Farm buildings were frequently altered and re-roofed, and survivals can display evidence for successive phases of rebuilding, marked by straight joints in masonry or indications of mortise holes and joints in timberwork.

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

- 3 The distribution of 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. Cruck construction is entirely absent from the East of England Region.
- © Crown copyright. All rights reserved. English Heritage 100019088. 2005



4 A Aisled barn, Cressing Temple, Essex. One of the earliest surviving barns in England on an estate of the Knights Hospitaller erected with timber felled between 1259 and 1280. (South Suffolk and North Essex Claylands) © *English Heritage / Michael Williams*

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) © *Jen Deadman*

5 Listed earth-walled agricultural buildings in England. This map shows the concentration of earth-walled agricultural buildings in the South West Region, with small areas across the Midlands (including a number in Warwickshire) and the North where earth-walled buildings survive. Earth was once more widely used but in areas such as the East Midlands most of these buildings were swept away in the 19th century. Additionally, smaller earth-walled buildings are less likely to be listed; this map serves to demonstrate the main areas of earth-walling and not absolute numbers.

© Crown copyright. All rights reserved. *English Heritage 100019088. 2005*



construction. Metal roofs were used from the 1850s for covered yards and other buildings on expensive planned 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.

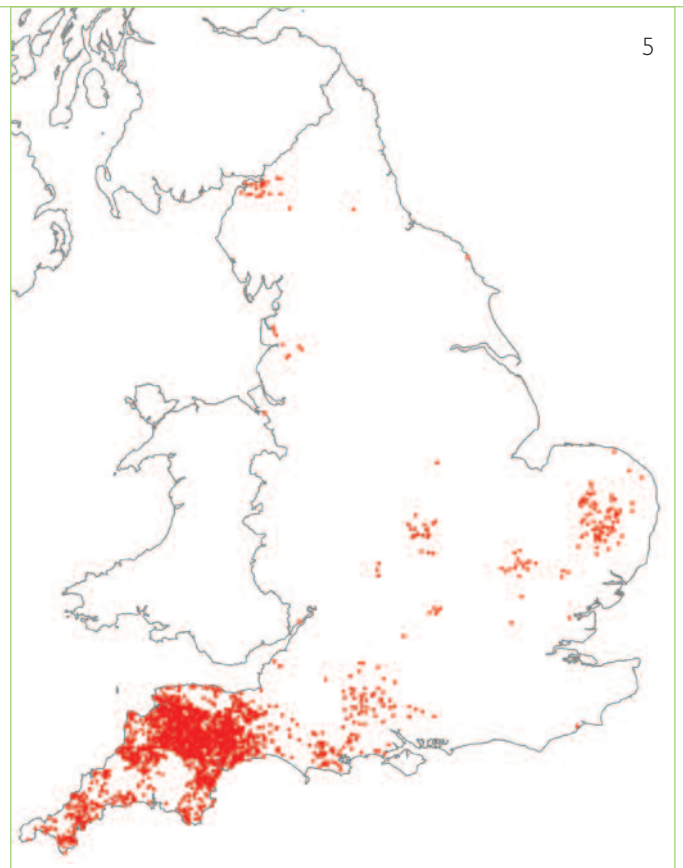
3.1.1 WALLING

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



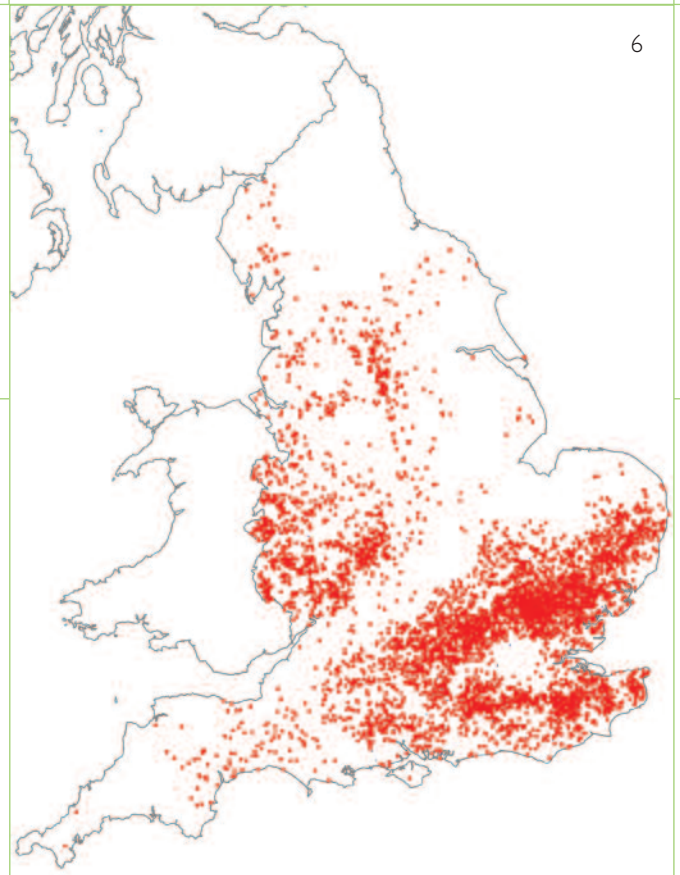
on some farms, for example for silage clamps, but did not achieve general use until after the 1950s.

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

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 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

6



availability of timber and, together with cultural factors, have influenced the distribution, appearance of distinct traditions in timber framing and the framing of roof 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 the East of 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

- 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, 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.
© Crown copyright. All rights reserved. English Heritage 100019088. 2005

was also used for the walling of model farmsteads built to a budget (Wade Martins 2002, p.175) 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 WEST MIDLANDS

3.2.1 WALLING (Figure 8)

3.2.1.1 Stone

Across parts of the Region there is a great availability and diversity of stone for building, from the red sandstones of the Shropshire and Staffordshire Plain and the millstone grit of the South West Peak, to the limestones and siltstones found across central Shropshire and into Herefordshire. Although not of sufficient quality for ashlar work, these limestones were widely used for vernacular buildings (Scard 1990, p.75). Across much of Herefordshire the red, pink and grey sandstones were regularly used for building purposes.

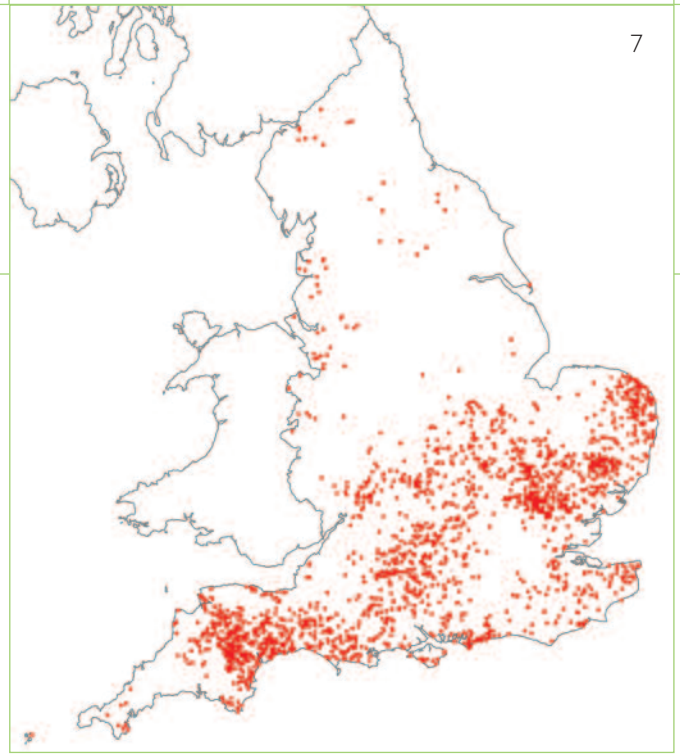
In the south-east corner of Warwickshire and southern Worcestershire, close to the limestone outcrops of the Northamptonshire Uplands and the Cotswolds, the landscape character is heavily influenced by the available building stone. As the clay vales spread out below the limestone ridge of Edgehill, both the creamier limestones and red ironstone dominate, whilst the Cotswold limestone gives a highly distinctive appearance to settlements and buildings in southern Worcestershire.

3.2.1.2 Earth

Earth-walled buildings, locally known as mud, are found in eastern Warwickshire (survival being concentrated in the Dunsmore and Feldon area) using the yellow-brown Liassic subsoil. Farm buildings with mud walls were usually left unrendered (McCann 2004, pp.31–2).

3.2.1.3 Timber

This Region, and the adjacent border area of Wales, is especially rich in timber framing, particularly in Herefordshire and Shropshire. Square panel framing, a distinctive regional tradition extending from southern Lancashire to north Gloucestershire, was commonly



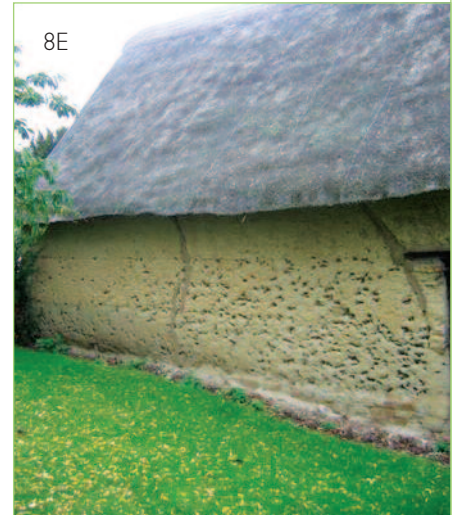
adopted where walls were left exposed. Originally a wattle frame of hazel (unfinished for ventilation or daubed with clay) were used to infill. There are instances in the north and west of the Region of panels infilled by horizontally set boards (Barson & Bond 1999, p.20) a feature concentrated almost wholly in this part of the country.

From the 18th century onwards bricks were often used as a replacement infilling. Weatherboarding is a common form of cladding for timber-framed buildings, and in the western part of the Region is often associated with tall, stone plinths and gable walls. A similar combination of weatherboarded framing (often in softwood) and brick walls is associated with barns of late 18th- to early 19th-century date. By the 18th century, timber framing had been reduced to a very minor role over much of Staffordshire (Peters 1969, pp.2–3), although timber-framed buildings continued to be erected in Herefordshire into the 19th century.

The distribution of crucks is particularly dense in the West Midlands Region, and examples in houses have been dated through dendrochronology from the late 13th to the 17th centuries. They are frequently found in farm buildings, and examples extend from very small-scale barns to the 14th-century Leigh Court near Worcester, the largest full cruck frame in the country. Cruck building was general throughout the Region until the 16th century, until its gradual replacement by post-and-truss buildings.

3.2.1.4 Brick

By the 17th century brick was replacing timber framing throughout the Region. Farm buildings, unless they were of a particularly high status, were not generally affected



8 Examples of walling materials in the West Midlands Region
 A–D Stone. Sandstone as used across the Region displays a wide range of colours and texture. (A Herefordshire Lowlands; B Herefordshire Plateau; C & D Shropshire, Cheshire and Staffordshire Plain)
 E Earth. Earth was not widely used across the Region but in the south-east (particularly the Dunsmore and Feldon area) earth-walled agricultural buildings survive. As with many agricultural buildings and boundary walls, the earth has been left unrendered.
 F & G Timber frame. Timber framing is characteristic of much of the Region. The panels of framing could be infilled with brick (F Herefordshire Lowlands) or wattle and daub. In some barns wattle that provided ventilation filled the upper panels whilst weatherboarding covered the lower part of the frame (G Black Mountains and Golden Valley).
 H Brick. Locally made bricks can give a distinctive character to farm buildings as can the use of details such as the use of ventilation slits and dentilled eaves. (Teme Valley)
 A, B, F and G © Bob Edwards; C, D and E © Jeremy Lake;
 H © Peter Gaskell

9 Examples of roofing materials in the West Midlands Region

- A Thatch. Thatch is not a highly characteristic feature of the farm buildings of the West Midlands but some examples of straw thatch survive. Water reed was not widely used in the Region. (Dunsmore and Feldon)
- B & C Stone capable of being slit into thin sheets for making roofing slates is found in Herefordshire (sandstone, B Black Mountains and Golden Valley) and in the Cotswolds (limestone, C Cotswolds) each having its own character, both in terms of the colour of stone and the size of the slates produced.
- D Clay tiles. Clay for brick and tile making was available in many parts of the Region, offering an alternative to thatch, and is predominant in the

north of the Region. (Shropshire, Cheshire and Staffordshire Plain)

- E Corrugated iron. As elsewhere in the country, corrugated iron as a replacement or (as here) applied over thatch has prolonged the life of many farm buildings. (Shropshire Hills)
- F Welsh slate. Although the proximity of the north-west part of the Region to Wales meant easier and earlier access to Welsh slate, across most of the Region the use of Welsh slate increased as the railways made transportation easier and cheaper. Slate allowed a lower roof pitch to be used, characterising many farm buildings of the period from earlier thatched or tiled buildings. (Herefordshire Lowlands)

A, C, D & E © Jeremy Lake; B & F © Bob Edwards



9A



9B



9C



9D



9E



9F

until the later 18th century onwards. In those parts of the Region where there was extensive rebuilding of farmsteads in the 18th and 19th centuries and clay was readily available, brick is the typical building material.

3.2.2 ROOFING (Figure 9)

3.2.2.1 Thatch

Straw thatch was undoubtedly one of the earliest roofing materials used over most of the Region, even in areas with a historical predominance of pastoral farming. Further declines in the extent of arable and the availability of alternative roofing materials led to a rapid decline in the use of thatch, particularly in the late 19th and early 20th centuries (Moir & Letts 1999, p.15).

3.2.2.2 Slate

There was some limited availability of stone for slates in Herefordshire, Shropshire and along the Oxfordshire

and Northamptonshire border. Along the Welsh border, slate from Wales was imported into the Region and stone slates were being brought into Staffordshire from Westmorland by the early 19th century (Moir & Letts 1999, p.17). Oak shingles were used in west Staffordshire (Peters 1969, p.5). Improved transportation from the later 18th century, firstly through the development of canals and then the railways, meant that Welsh slates could be more widely distributed and they replaced locally produced roofing materials in many areas.

3.2.2.3 Tiles

By the 18th century, clay tiles were widely used, particularly in the predominant brick areas of north Shropshire and Staffordshire, two of the leading tile-manufacturing counties in England (Peters 1969, p.5). They are now common, and away from upland areas the predominant form of roofing.

4.0 Agricultural History and Farm Buildings

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

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

4.1.1 UP TO 1550 (Figures 10 & 11)

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

4.1.1.1 Survival and Value

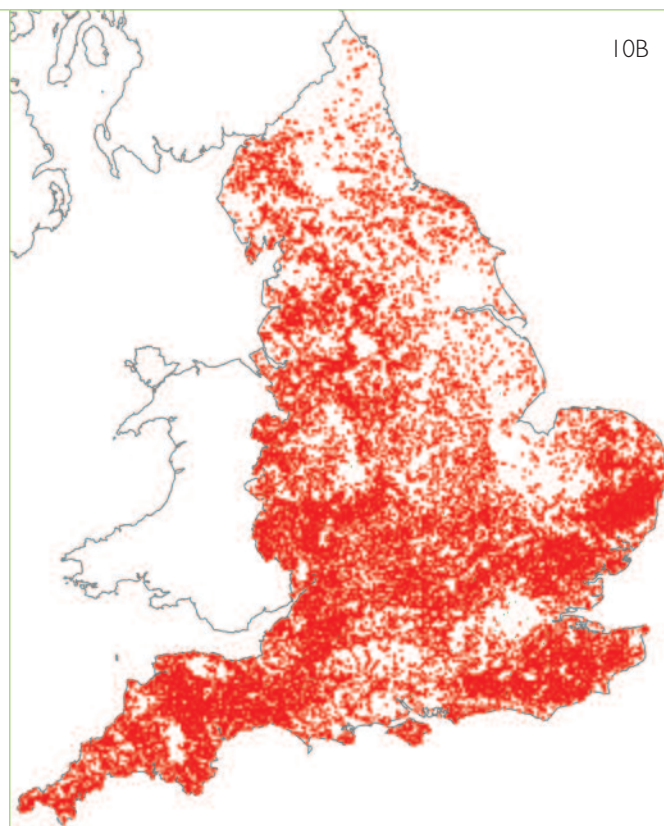
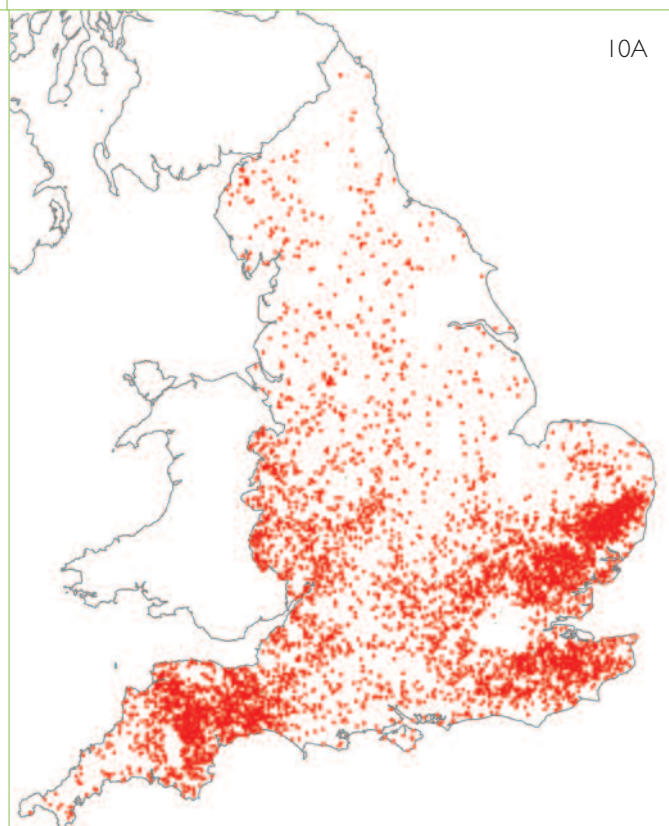
All survivals of this period are of great rarity and significance. The best-known survivals are the great barns of secular and especially ecclesiastical estates. These

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

4.1.2 1550 TO 1750 (Figures 10 & 11)

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

10 Distribution of listed farmhouses in England, pre-1550 and 1550–1750. There is an obvious danger in making sweeping generalisations from such maps, but they do present valid questions for future analysis and research. Wealth derived from arable farming, including the proximity to the London market, dairying and fattening, wool and cloth production are obvious from the pre-1550 map. Here the distribution is thinnest for large parts of northern England, where rebuilding in stone – particularly from the late 17th century – had made its mark by 1750. Notable by their continuing thin distributions are the Lincolnshire and Yorkshire Wolds and Northumberland, where agricultural improvements and the re-planning of landscapes resulted in extensive rebuilding and re-siting of farmsteads after 1750. © 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 included in J Bailey Denton's *Farm Homesteads of England* (1863). The shows and publications of agricultural societies, from farmers' clubs to the Royal Agricultural Society of England (RASE) founded in 1837, were important. 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 many thousands of existing steadings with cattle yards and buildings, and the replacement of the traditional threshing barn by the multi-functional and much smaller mixing barn (see Figure 22, bottom). In some areas, regional differences were beginning to disappear: for example, the removal of floors and walls for livestock and lofts in the combination barns in the wood pasture areas of Suffolk and the eastern Weald attest to the fact that they were becoming part of eastern England's arable region, as recognised by James Caird who conducted a survey of British agriculture for *The Times* in 1850–51 (Caird 1852).

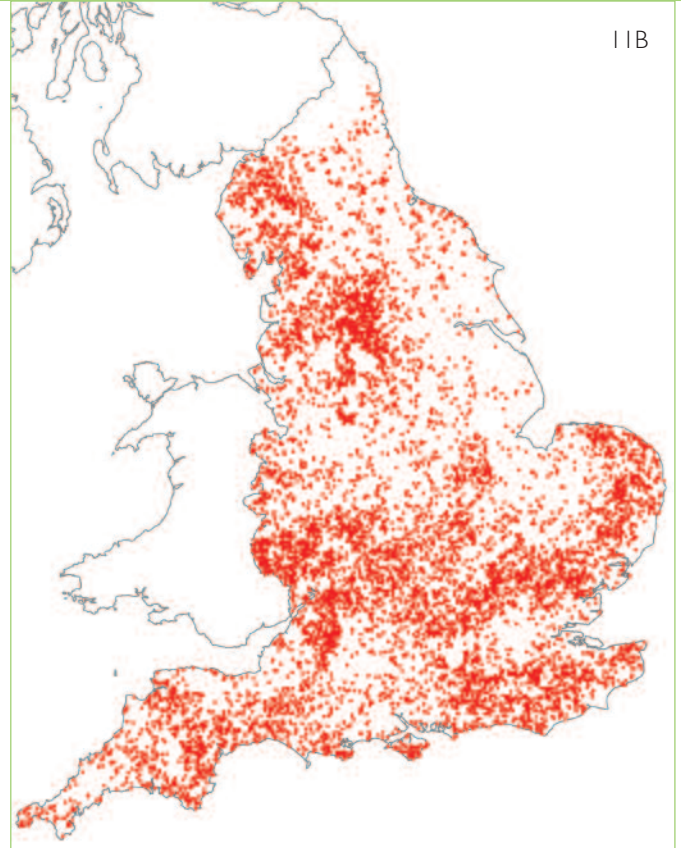
4.1.3.1 Survival and Value

Substantially complete examples of farm buildings of the 1750–1840 period are far less common than those of the post-1840 period, when many farmsteads matured into their present form and huge numbers of buildings

I | Distribution maps of listed barns in England, pre-1550 and 1550–1750

The great majority of substantially complete pre-1750 barns have been listed. These maps pose important questions for future research. In the pre-1550 map, the concentrations in a belt around London, the southern Pennines and from the 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.

© Crown copyright. All rights reserved. English Heritage 100019088. 2005



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

4.1.4 1880 TO 1940

For over 100 years, agriculture had been increasingly subject to national and international fluctuations in commodity prices, to its considerable benefit in the Napoleonic Wars and the High Farming years. However, after a run of poor weather in the late 1870s, the income from arable crops that farmers had enjoyed in the 1860s collapsed (for example, by 40% in wheat between 1880 and 1900) and farming entered a severe depression. Britain, its urban economy prospering through free trade, became by the 1930s the world's greatest importer of agricultural produce, including animal fodder, from both neighbouring parts of Europe and the New World. This was the beginning of large-

scale importation of grain from the American prairies, meat in refrigerated ships from New Zealand and Argentina, and cheese and bacon from Europe. More than in any preceding period, British domestic policy (the supply of cheap food) and the world market now directly affected regional variations and the supply of capital to British farmers. The result was the concentration of grain production on the drier soils of the eastern and southern counties, and in the areas that experienced the greatest contraction from the High Farming peak of grain production a focus on meat and dairy produce in order to meet urban demand. The growing demand for liquid milk and the importation of dairy produce also led to a decline in the farmhouse manufacture of butter and cheese.

The Government endeavoured to boost production through price support. Against the backdrop of the U-boat menace during the First World War it sought to reduce the country's dependency on imported grain and attempted to extend and co-ordinate both advice and legislation (over hygiene, for example) through the establishment in 1919–20 of the Ministry of Agriculture and Fisheries and county council committees and councils,

in conjunction with organisations such as the National Farmers' Union (founded 1908). However, despite an increase in net output, the rising costs of labour, feeds and other inputs, combined with the decline in prices and rising levels of imports, ensured that little was invested in fixed capital. Arrears in rent characterised the period, even in years of relative recovery (such as after 1936 in arable areas). The holdings farmed by the new class of owner-occupiers – numbering 147,000 in 1927, as against 56,000 in 1909, the biggest change in land ownership since the Dissolution of the Monasteries (Whetham 1978, pp.160–61) – were burdened with debt.

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

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

industrial theory bucked the trend (Brigden 1992).

4.1.4.1 Survival and Value

Planned steadings and buildings in some areas reflected the increased importance of dairying, particularly of liquid milk – the steadings of the Tollemache and Westminster estates in south Cheshire being one such example. The inter-war period witnessed the development of more intense forms of housing for pigs and poultry, and the replacement, as a result of hygiene regulations, of earlier forms of dairy cattle housing with concrete floors and stalls, metal roofs and fittings. County councils began building new farmsteads, in mass-produced materials but in traditional form, in response to the Government's encouragement of smallholdings of up to 50 acres (20 hectares). Alongside the construction of new farm buildings, traditional farm buildings were adapted to new needs, and the use of corrugated iron (mostly for repair) has guaranteed the survival and reuse of earlier buildings, particularly the increasingly redundant threshing barn.

4.1.5 1940 TO THE PRESENT

The 1937 Agriculture Act anticipated the need to increase self-sufficiency, and the Second World War witnessed a 60% rise in productivity; 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, 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 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 WEST MIDLANDS

There was already a strong degree of diversity within the Region by the 15th century: large flocks of sheep in the Peak District and on the Shropshire and Herefordshire Hills, the concentration of dairying and cattle breeding in the north, of beef production in Warwickshire and of mixed arable-based husbandry in other lowland areas such as the Herefordshire plain. In the same century there was a large-scale decline in arable cultivation, and an acceleration in the abandonment and shrinkage of settlements (especially in the open-field and primarily arable economies) and the amalgamation and growth of holdings (Dyer 1991, pp. 84-5, 89–92). Only in the extreme south of the Region, in Herefordshire, did arable farming continue as a major element of the agricultural economy. Much of the Region was enclosed by 1750 (see 2.4.2).

By the 17th century industry was providing alternative employment and enabling small-scale farming to be combined with other sources of income. There was also an active interest in agricultural improvement evidenced, for example, in Rowland Vaughan's 1610 book on watermeadows (Betley, 1999), Andrew Yarrington's influential book on clover growing in Worcestershire in 1663 and Beale's *Herefordshire Orchards* in 1657 (Thirsk 1984, pp. 162–3, 159). In much of the Region efforts were being made to improve enclosed pastures by introducing clover and liming acid soils. By the early 19th century, lowland areas were frequently subject to four or five course rotations using root crops.

Farms continued to grow in size, especially in lowland areas and in areas of nucleated settlement. In the western part of the Staffordshire Plain (4.2.1), for example, smaller farms were concentrated in areas characterised by early isolated farmsteads, those in areas of nucleated settlement being more subject to amalgamation, re-siting and rebuilding (Peters 1969, p.30). Post-1750 enclosures are concentrated in patches of heath, forest and moss and on areas of higher ground, such as the upland parts of the Shropshire Hills, possibly with the intention of securing mineral rights over the coal and stone resources available in these areas. The working of these minerals attracted labourers who often created smallholdings within and along the edge of the moorland, keeping sheep and cattle on the common land and enclosing a few acres for hay.

Except on the highest lands in the north and the hills of Shropshire and Herefordshire, cattle were the most important animals, kept for rearing, fattening and dairying. Dairying was especially important in north Shropshire and Staffordshire, which effectively comprised a continuation of the Cheshire plain; the introduction of new crops and rotations in these areas was targeted

towards the increase of feed for the growing cattle population. By the 19th century Staffordshire was seen as a dairying rather than a fattening county with the few homebreds that were surplus to requirements being sent south for finishing (Pitt 1813, p.106). Uttoxeter, just to the south of the Peaks, developed an important cheese trade based on its surrounding areas in both Staffordshire and Derbyshire. The lowlands of Herefordshire and south Worcestershire combined corn with the fattening of stock.

Only on the Shropshire and Staffordshire plains were large estates predominant. Over 30% of Staffordshire, and 20% of Shropshire, was in estates of over 10,000 acres by 1871 (Wade Martins 2002, pp. 217, 219). There were, however, also many owner-occupiers with proprietors farming between 200 and 300 acres who were recognised as a significant group in the early 19th century (Pitt 1813, p.20).

The period of high farming in the mid-19th century resulted, as elsewhere, in an enthusiasm for new buildings, the massive increase in cattle numbers in some areas being a major factor. Investment was sometimes secured with the help of loans from the land improvement companies. Between 1850 and 1869, for example, £53,568 was lent to Staffordshire landowners towards the cost of farm buildings. This was probably about 20% of the total outlay. It was mostly the larger landowners who took advantage of the availability of loans and – according to the surviving reports of the surveyor, Andrew Thompson – they were used mainly for the extension or modification of existing plans rather than totally new builds. They were described as replacing 'dilapidated', 'worn out' and 'beyond repair' structures of earth, board and thatch. Only four 'entirely new' farms were built. Not surprisingly, in a county where dairying was becoming increasingly important, loans were mostly directed towards new or additional housing for cows – single or double cow houses for between 10 and 50 cows (Phillips 1996, pp.24–51). The drainage of heavy land for arable crops was another feature of this period, picking up in intensity again after 1940.

AREA SUMMARIES

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

bibliography. They are generalised statements, within which there may again be important differences in farming practice, settlement and estate patterns and landscape character.

For more on JCA 52 (White Peak), see East Midlands.

For more on JCA 53 (South West Peak), see North West and Yorkshire and the Humber.

For more on JCA 61 see North West.

For more on JCA 95 (Northamptonshire Uplands), see East Midlands.

For more on JCA 105 (Forest of Dean and Lower Wye), see South West.

For more on JCA 107 (Cotswolds), see South West.

4.2.1 Staffordshire Peak District

This includes South West Peak (JCA 53) and White Peak (JCA 52); more details can be found in the East Midlands. Dairying and the breeding of stock was important in both these areas, with some arable cropping.

In the South West Peak some small-scale enclosures and isolated farmsteads are associated with intakes from the moor; typically from the 15th century (Dyer 1991, pp.84-5) but occasionally earlier. Regular and large-scale enclosures are associated with late 18th- and early 19th-century enclosure of the open moor and common, dotted with field barns and isolated steadings.

More characteristic of the limestone plateau of the White Peak are nucleated villages, formerly surrounded by their open common fields, interspersed with early farmsteads and their associated field patterns. Enclosure was mostly complete by the 18th century, a major reason being the importance of stock for dairying and feeding off its rich grass. By the 19th century cattle rearing, to supply meat to the growing cities nearby, had grown in importance. By the late 19th century, the supply of liquid milk to urban markets had also become a major aspect of the rural economy.

4.2.2 Cheshire, Shropshire and Staffordshire Plain (JCA 61) (Figure 12)

For more details see North West.

This area is an extension of the Cheshire Plain and consists of clays, sands and gravels as well as meres and mosses. The generally wet but mild climate had always favoured grass above corn and so stock and dairying were always the major elements of farming in the north of the area: ploughed land was often given over to the

supply of feed for cattle, and there is evidence for enclosure from the 14th century being linked to the emerging dairying industry (Roberts and Wrathmell 2002, p.99). The production of cheese was a major aspect of the rural economy by the late 16th century, expanding rapidly in north Shropshire from the late 17th century (Hey 1984, p.154; Edwards 1977). There are significant variations to this general pattern, with arable being much more important in the south and east of the area, although the growing demand for meat and dairy produce from the Black Country and the Potteries also led to a shift from arable to dairy and stock farming in western lowland Staffordshire by the mid-19th century (Peters 1969, p.131). The increasing supply of liquid milk to the urban areas was also linked to the development of the railway system from the mid-19th century.

Areas of wetland were being drained from at least the 16th century. Improving landlords such as the Marquis of Stafford and the Ansons (Lords Lichfield) owned lands in both Staffordshire and Shropshire. They instigated the draining and regular enclosure of areas of wetland in the 19th century, together with the construction of new steadings. For example, Kinnersley Moss was drained by the Marquis of Stafford as part of his estate improvements in the early 19th century. The whole area to the west of Kinnersley is a distinctive estate landscape of regular fields and planned farms. Elsewhere, land was added to existing farms with at least four sets of new buildings being erected in Kinnersley rather than out in the fields (Wade Martins 2002, pp.90-94).

4.2.3 Oswestry Uplands (JCA 63)

This small area, bounded by the Shropshire Plain to the east and the Wales to the east, has a mixture of isolated farmsteads associated with ancient patterns of enclosure, squatter settlements linked to the stone quarrying industry in the south of the area, and late 18th- and 19th-century farmsteads associated with the enclosure of the northern Selattyn Hills. The hill farms specialised in cattle rearing, with extensive sheep grazing from the late 18th century. More arable-based mixed agriculture developed to the east.

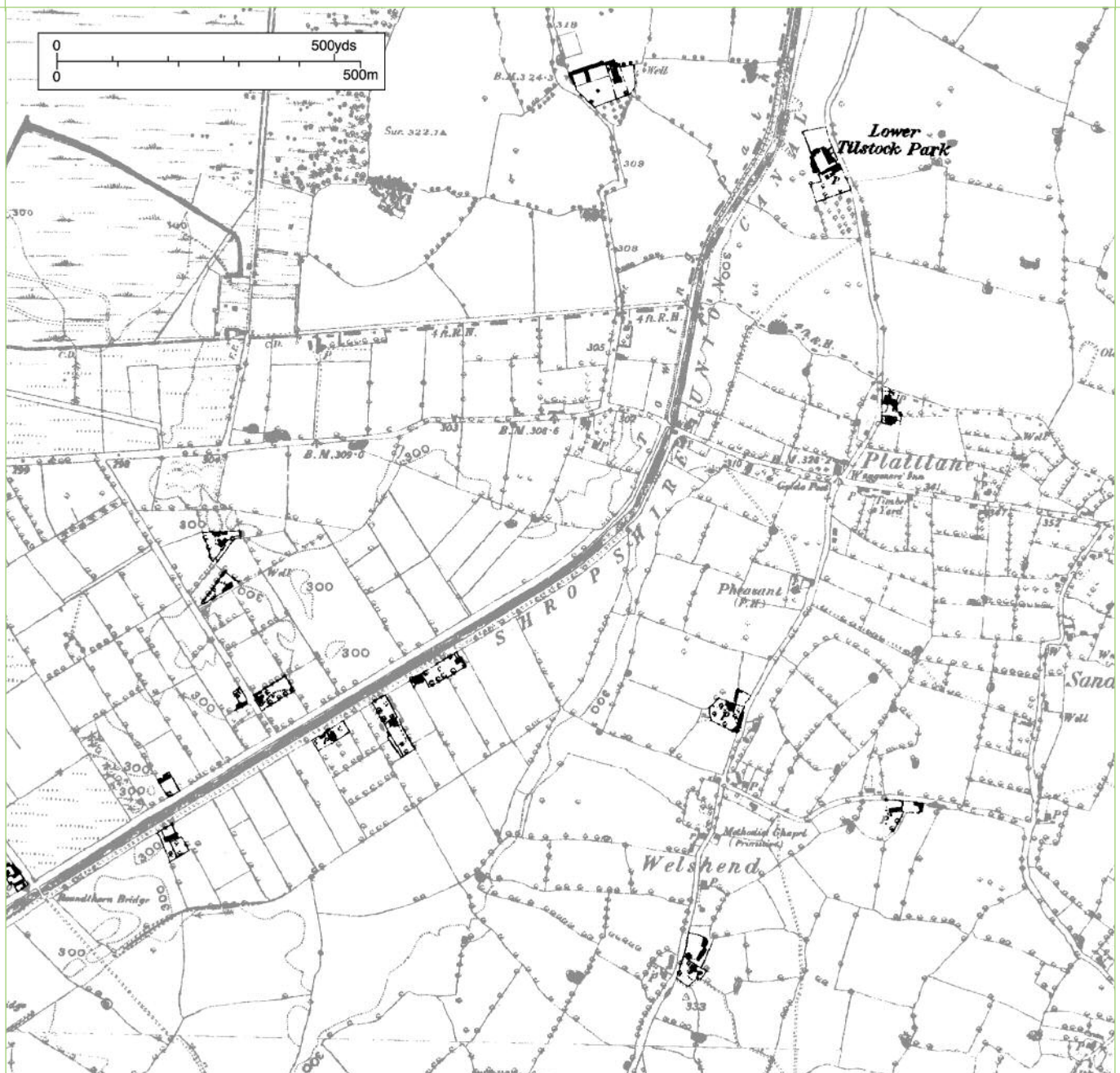
4.2.4 Potteries and Churnet Valley (JCA 64)

The heavy clay and generally poor soil quality of this area supported from the medieval period a substantially sheep-based and cattle-rearing pastoral economy. There are patches of regular planned enclosure that contrast with the predominant pattern of centuries-long piecemeal enclosure, dating from the late 18th century and including a high proportion post-dating the 1850s, concentrated on areas of former unenclosed common grazing on the higher and more open land to the north (such as Biddulph Moor). Arable farming was more important in the river valleys, particularly around the Dove and Churnet to the east of Cheadle. In the

12 Farmsteads in the landscape: Whixhall, Shropshire (Shropshire, Cheshire and Staffordshire Plain)

This map shows the junction of four contrasting landscapes. Tiny hedged fields suggesting early, if not ancient, enclosure and small dispersed farmsteads in the south-east give way to much larger ones to the north where large-scale dairying based on substantial planned brick-built farms, often estate owned, predominated. A small area of heath survives to the north-west, which further south had been subject to small-scale and regular enclosure with straight roads and tracks after the construction of the Shropshire Union Canal (completed 1835). Associated with the regular enclosure are many small farms with few farm buildings. Based on OS 1st Edition 6" map 1843–1890.

© and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024.



Potteries, around the ironworkings of the Churnet Valley and near the coalfields, farming was often small scale and, already by 1700 combined with industrial activity. Small-scale farming activities provided subsidiary work (Hey & Thirsk 1984, pp.131, 161).

4.2.5 Shropshire Hills (JCA 65) (Figure 13)

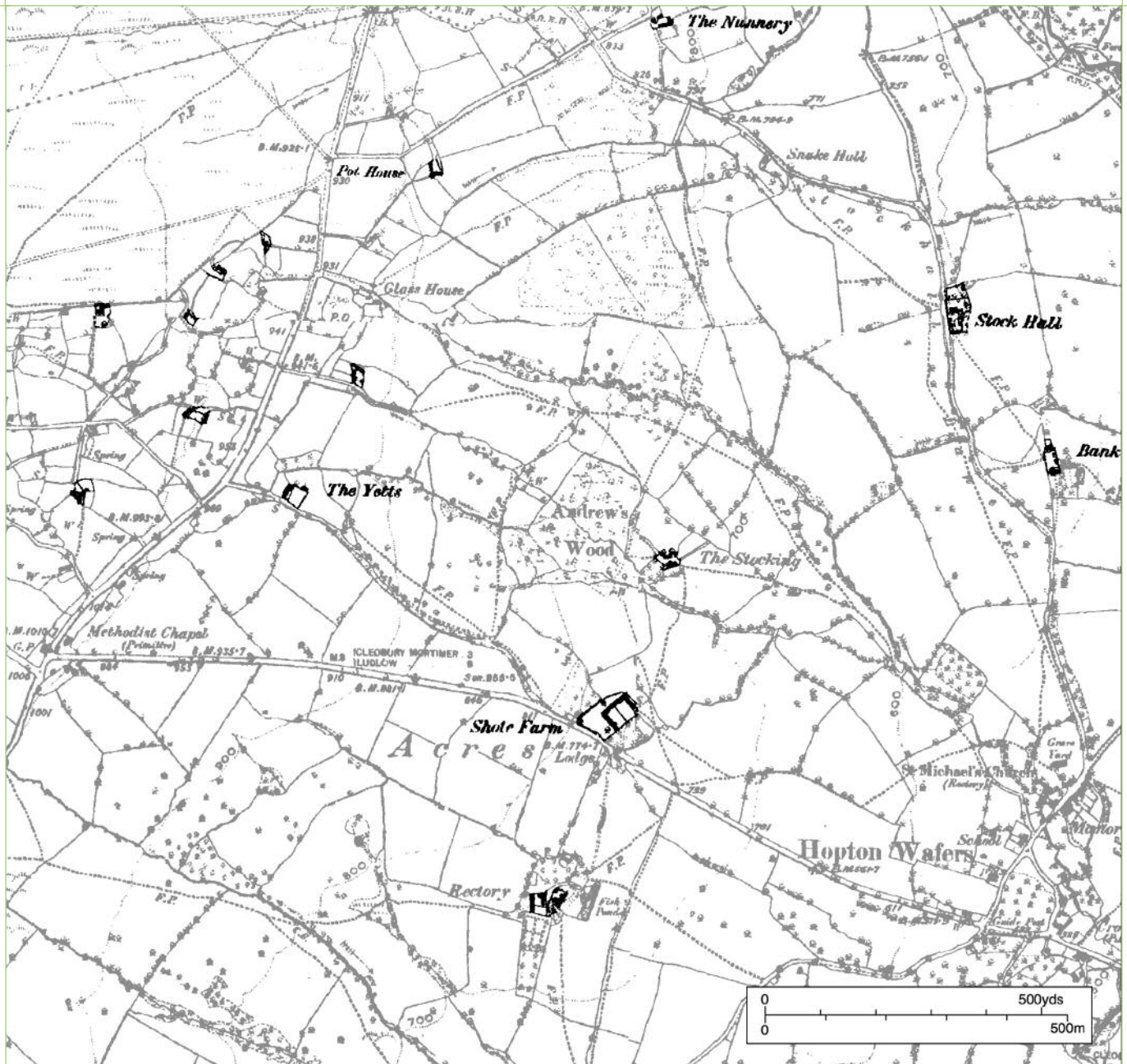
This area, which lies between the Welsh border to the west and the Mid Severn Sandstone Plateau to the east, exhibits great diversity. The majority has a long history of mixed farming, with some dairying and arable cultivation being important elements of the farming economy. Sheep and cattle rearing formed the mainstay of the hill

farms into the 20th century, much of its rough moorland being enclosed and transformed into pasture from the late 18th century. There was some regular late enclosure of the open heath, such as on Clunton Hill, where some small planned farmsteads were created. In parts of the area – especially on the commons of the southern Cleve Hills and on the western flanks of Stiperstones – farming was (increasingly from the 16th century) combined with industrial activities such as coal mining, quarrying and lead mining. In these areas smallholdings and squatter's cottages could be found fringing and encroaching onto the moorland, which provided common grazing, whilst small fields provided hay meadows.

1.3 Farmsteads in the landscape: Hopton Wafers, Shropshire (Shropshire Hills)

This extract covers an area on the lower slopes of the Cleve Hills. Most of the high ground of Cleve Hill was open common and had been exploited for coal from the medieval period and for stone from the mid-19th century. On the lower slopes fringing the common are ancient hamlets, and scattered farmsteads, some of which are of medieval origin, set within an anciently enclosed landscape. On some of the higher ground in this area, for example, near The Yetts, there are traces of possible ridge and furrow. In contrast to these larger farms, fringing and encroaching onto the common to the left of the map are the smallholdings of families who combined farming with the coal or quarrying industries, utilising the common grazing for sheep and cattle and holding a few enclosed fields for haymaking. Based on OS 1st Edition 6" map 1843–1890.

© and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024.



4.2.6 Mid Severn Sandstone Plateau (JCA 66)

Industrial development from the 16th century, closely linked to the navigation of the Severn and the development of canals, declined with the introduction of railways from the mid-19th century. On the sandstone plateau to the east of the Severn more corn was grown and fewer cattle were kept than on the heavier soils of the Severn valley itself and elsewhere in Shropshire. The fine, dry, sandy soil was fit for growing rye and barley within medieval open fields and later regular patterns of fields brought about by private or parliamentary enclosure (Hey 1984, p.156). The thin soils of the high

ground between the Stour and Severn were influenced by the activities of improving estates from the later 18th century, with some heath and common remaining amongst the predominant pattern of regular and large-scale enclosure. The sandier soils around Kidderminster and Stourbridge, and the more gravelly soils north-east of Bromsgrove were well suited – if fertilised with marl and lime – to dairying. The growing of more fodder crops and clover allowed for dairying to expand from the 18th century in response to demand from the rising industrial populations of the Black Country (Thirsk 1984, p. 186).

4.2.7 Cannock Chase and Cank Wood (JCA 67)

Large parts of this wood–pasture area, interspersed with large commons, was intensively settled from the medieval period and particularly from the 16th century, with small hamlets associated with industrial activities such as quarrying (limestone and dolerite), coal mining, iron making and edge-tool manufacture. Deep mining of the South Staffordshire Coalfield developed from the 1870s. Piecemeal enclosure of the former common fields was generally complete by the 18th century. By the 19th century the commons – important for the larger farmers and the semi-industrial squatter–cottagers – were being enclosed (Hey 1984, p.143). Dairying became significant on the heavy, poorly-drained soils in the northern part of the area, where large estates such as Shugborough built some notable home farms (its home farm of 1803 and 1806 is one of the earliest water-powered farms in the country) and were well-placed for export of their produce by canal. Arable farming and horticulture have intensified in importance from the late 18th century on the sandstone-derived soils at the eastern and western edges and to the south of the area.

4.2.8 Needwood Forest and South Derbyshire

Claylands (JCA 68) and Trent Valley Washlands (JCA 69)

By the 19th century much of this area specialised in stock fattening and dairying, with farms being generally small in size. Piecemeal enclosure of the former common fields and grazing land, much of this for pasture, was generally complete by the 18th century (Hey 1984, p.141). There are pockets of regular and large-scale enclosure with associated farmsteads. The area immediately to the south of Needwood Forest, for example, represents an estate landscape of parkland, regular late enclosure fields and substantial planned farms.

4.2.9 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 sited amongst their own fields.

4.2.10 Dunsmore and Feldon (JCA 96) (Figure 14)

The Feldon of south-east Warwickshire was traditionally an area of cereal growing and open fields with the fertility being kept up by flocks of sheep. The contrast to Arden was evident by the 14th century (Dyer 1991, p.78). The area experienced the conversion from cultivation to livestock rearing from the 14th to the mid-

16th century, when large areas of former open field were subdivided and enclosed by graziers supplying wool to the textile industry. The land was then managed as a mix of arable (with clover and rye grass sown into rotations) and increasingly from the 18th century as pasture for fattening cattle and sheep and to a lesser extent for dairying (Thirsk 1984, pp.164-5). This conversion of land to pasture – to which the alkaline soils of the Lower Lias clays are well suited – was closely linked to enclosure for the containment of stock, the amalgamation of smaller farms and the appearance of large farmsteads in villages and also some in the open landscape. Arable production was historically concentrated on the sandy soils of the plateau summits and along the clay loams of the main river valleys. Enclosure of the extensive Dunsmore Heath, an area of inter-commoning, was, in the 18th and 19th centuries, focused on arable production.

To the north east of this area is the Leicestershire Vales (JCA 94)

To the south east of this area rise the Northamptonshire Uplands (JCA 95)

4.2.11 Arden (JCA 97)

Arden was historically a region of woodland and heaths that was cleared in the medieval period into small fields and owner–occupier farms concentrating on livestock, particularly dairying. Settlement was scattered and farms small, connected by a maze of twisted and sunken lanes. By the late 17th century the development of the Warwickshire coal field and associated industries was bringing change to the area. The population of some parishes doubled in the period 1650–1750, stimulating an increase in grain production in this area to feed the expanding industrial population of this area and of the Birmingham conurbation (Thirsk 1984, pp.180–83). There was a change from wheat to barley, and dairying, particularly cheese production, remained important as these products were in demand. In spite of increasing local demand, cheese was still sent to London.

Mid-19th-century improvers found much to criticise, as they so often did with more anciently enclosed landscapes. Fields were small and the hedges crowded with timber; agricultural practice was backward, few turnips were grown and the land needed draining. Farm buildings were said to be in a very bad state and neglected by their owners: 'They have been suffered to fall into such decay that they cannot be repaired' (Caird 1852, p.222). A few years later, however, Evershed noted that on Meriden Heath, between Birmingham and Coventry, Lord Aylesford had reclaimed 200 acres of heath and bog and built Heath Farm, a group of 'substantial and excellent buildings, where the usual operations of a first-rate model farm are carried on' (pp.490–491). Only in the river valleys did open fields

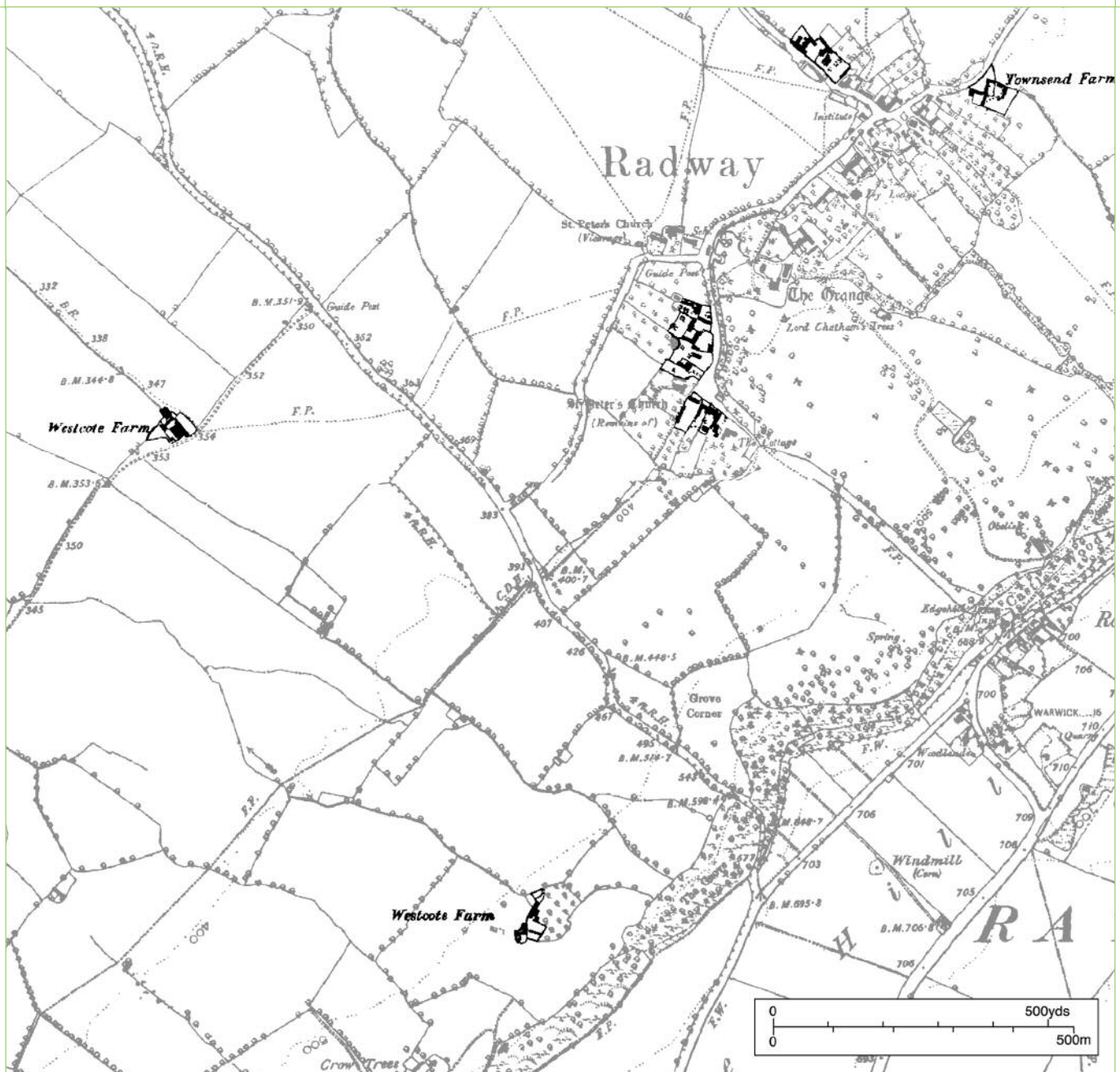
14 Farmsteads in the landscape: Radway, Warwickshire (Dunsmore and Feldon)

Sited just below Edgehill, Radway lies within the Feldon area of south-east Warwickshire, traditionally an area of cereal growing and open fields with the fertility being kept up by flocks of sheep. There are some areas of earlier enclosure, such as the irregular fields around Westcote Farm to the south of the mapped area. Most of the open fields remained to be enclosed in the 18th century and often resulted in land being put down to grass.

Westcote Farm, set within the enclosed fields, may represent the movement of a farm out of the village at the time of enclosure. However, several large farms remained in the village. Although there was a move to pastoral farming, many farmsteads continued to be provided with threshing barns in the 18th century indicating that arable crops continued to be grown, even if it was on a smaller scale than had been earlier.

Based on OS 1st Edition 6" map 1843–1890.

© and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024.



dominate, and here a pattern of nucleated villages developed, later surrounded by large enclosed fields. By 1856 these were divided into large arable farms of up to 300 acres (Evershed 1856, p.476).

4.2.13 Clun and North West Herefordshire Hills (JCA 98)

The hill country of south-west Shropshire and west Herefordshire shared many characteristics: small fields and scattered hamlets and farmsteads, where crops were grown on a subsistence basis, with sheep and cattle rearing forming the mainstay of agriculture into the

20th century (Thirsk 1984, p.193; Whetham 1979, p.32). The Wigmore Basin in the centre (focused on the Teme and its tributaries) has a long history of more intensive arable production. Wigmore Grange was a recognised centre for the breeding of Hereford cattle in the late 18th century.

The complex patterns of enclosure have developed from pre-14th-century enclosures around farmsteads and hamlets, open fields (the largest being around the settlements established in the 11th to 13th century in the lower valleys) and the higher ground. Regular late

enclosure was restricted to areas of open heath on higher ground where, in some cases, small planned farmsteads were created. In the early years of the 19th century 12,000 acres of Clun Forest was reclaimed (Plymley 1813, p.144).

4.2.14 Black Mountains and Golden Valley (JCA 99)

To the west of the Herefordshire lowlands lies the Golden Valley, where the Cistercian abbey of Abbey Dore (founded 1147) and the small manorial centres that developed from the 11th century had a major influence on the settlement and farming of the area. Large manorial complexes survive alongside smaller holdings in the valley bottoms, and farmed its rich soils for corn and dairying – it was famous as a dairying area by the 17th century (Thirsk 1984, p.193). For example, Turnastone Court, Vowchurch, is famous as the place where Rowland Vaughan developed the art of building watermeadows to encourage early grass growth in the spring for his stock. He published a book explaining his methods in 1610. The farmsteads in the valley bottoms and sides also had access to extensive upland grazing, the farms to the west being smaller in scale and surrounded by smaller-scale patterns of piecemeal enclosure.

4.2.15 Herefordshire and Worcestershire Lowlands and Valleys

This area includes the Herefordshire Lowlands (JCA 100), the Herefordshire Plateau (JCA 101), which stretches into Worcestershire to the north and east, and the Teme Valley (JCA 102) of north-west Worcestershire, which also stretches into Herefordshire and south Shropshire.

The plains of this part of the Region present a complex landscape of mostly ancient enclosure. This includes individual fields, enclosed fields which were ploughed into communally-managed strips, and open fields, some organised on two- or three-field rotations, which developed from the 11th century around larger nucleated settlements, for example in the Lugg and middle Wye valleys (Roberts and Wrathmell 2002, pp.129–31). On its predominantly heavy loam soils, which had witnessed the abandonment and shrinkage of settlements on a large scale between the 14th and 16th centuries, farmers and the gentry were able to build substantial farmsteads and farmhouses between the 15th and 17th centuries. Across much of Herefordshire these farmsteads are often located in hamlets and small villages, closely associated with a medieval church. Enclosure was generally complete by the 18th century, and since then there has been increasing boundary removal in arable areas, the slopes to the higher land being characterised by smaller fields subdivided principally for stock management. Orchards were grown for cider making from at least the 14th century, and

together with the hop industry developed on an increasingly intensive scale from the late 17th century. Orchards and hops were typically planted on the valley floor and intermixed with arable, with mixed farming and pasture on the slopes.

In the 17th century Herefordshire generally was the principal corn-growing area of the West Midlands. The central Herefordshire plain, which by that date was mostly enclosed, was primarily a corn–livestock region with the dominant cereal wheat rather than barley, fruit and hops being also important elements of the agricultural economy. Extensive watermeadow systems along the wide river valleys developed from the 17th century. Cattle, many of which were bought in, were fattened for the butcher, and pigs were also an important part of the system, often living in the orchards (Thirsk 1984, pp.172–177). The best wheat lands in the 19th century were said to stretch east from Hereford towards Ledbury (Duncomb 1813, p.10). Farms were still generally small and as late as 1866 the majority were below 50 acres. They are still smaller than farms elsewhere, with 68% of businesses operating on less than 125 acres (MAFF 2000, p.88). The 19th century saw the perfecting of the Herefordshire breed of cattle as a beef animal. They were not as hardy as Devon cattle and whilst they did well in the meadows of the valley bottoms in the summer, they needed to be housed in the winter if they were to fatten well. Several large complexes for fattening cattle and developing pedigree herds survive, such as those at Court of Noke and Willerton. Sheep too were often ‘cotted’, which meant more buildings were needed. The result was that Herefordshire farm buildings were not ‘so deficient as those in other districts’ by the 1850s, although the practice of dumping manure in orchards came in for criticism (Rowlandson 1853, p.452).

4.2.16 Malvern Hills (JCA 103)

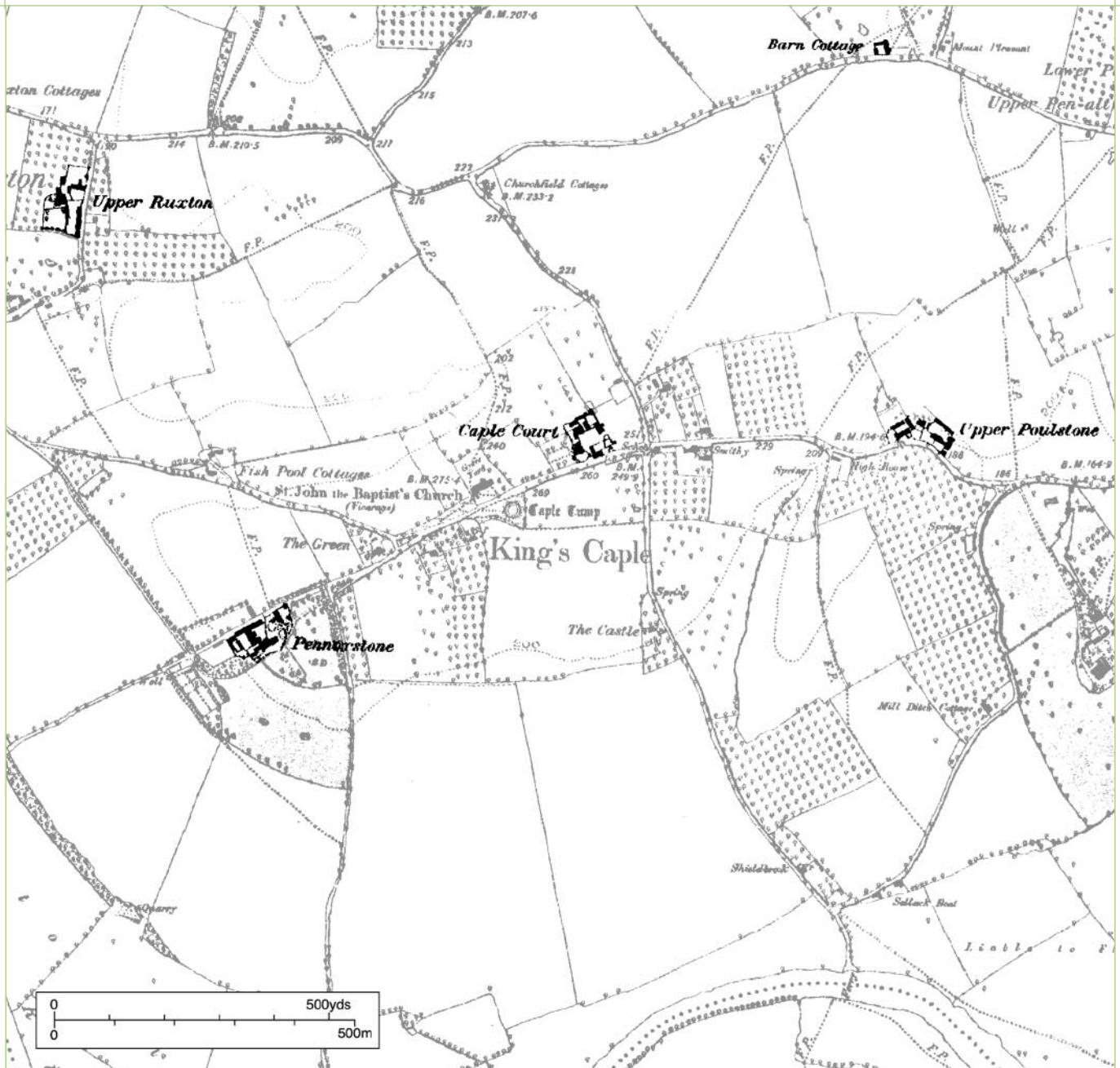
The Malverns have been used as upland grazing by their surrounding lowland communities from prehistory to present day, including a long history as a hunting forest from the 11th to the 16th century, when much of its land was granted or leased prior to final disafforestation and division in 1632 between commoners and the Crown. The fields are generally small in scale, the result of medieval and post-medieval clearance from woodland and intakes from the hunting chase. Associated with this general pattern are scattered farmsteads, nucleated villages being sited to the west of the area.

There is a long history of arable cultivation in the valleys, especially in Cradley Brook Valley, but the acid/neutral soil of the area was best-suited to a pastoral economy. Elsewhere strip lynchets, and strips of ridge and furrow in small closes, are witness to pre-14th-century levels of arable production, and the long later history of pasture

15 Farmsteads in the landscape: King's Caple, Herefordshire (South Herefordshire and Over Severn)

The rich clays and loams of South Herefordshire have supported an arable corn–cattle economy since the 17th century. In this area of the valley of the River Wye, settlement is predominantly dispersed with a few hamlets and small, nucleated settlements surrounded by large fields enclosed from a complex pattern of arable townfields and meadow. The importance of orchards is clear. The farmsteads are relatively large with buildings arranged around two or more yards. Based on OS 1st Edition 6" map 1843–1890.

© and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2005) Licence numbers 000394 and TP0024



(Bowden 2005, pp.37–43). Orchards developed from the late 17th century, now concentrated on the eastern edge, to the west and to the north, and hop fields from the 18th century, concentrated on the valley sides in the north.

4.2.17 South Herefordshire and Over Severn (JCA 104) (Figure 15)

Isolated farmsteads in this area, which lies in south Herefordshire and north-west Gloucestershire, relate to ancient and complex patterns of enclosure, similar in terms of development to those of the Herefordshire plain. The hills to the south and west provided summer grazing for surrounding communities. Its fertile soils have

supported a prosperous and long history of mixed agriculture, pasture fields (particularly in the steep-sided valleys) now taking a small proportion of a land cover that is dominated by intensive arable cultivation. Orchards developed to intense scale of production from the late 17th century and were very extensive. The horticultural industry north of Newent – around which is a patchwork character of arable intermixed with woodland, pasture and orchards – developed from the 19th century.

To the south of this area, and forming a continuation of it, is the northern part of the Forest of Dean (see South West).

4.2.18 Severn and Avon Vales (JCA 106)

For more details see South West.

To the west of the river Severn, farmsteads relate to ancient patterns of enclosure, in strong contrast to the predominantly village-based settlement to the east of the river. Here the great majority of isolated farmsteads were formed as part of the enclosure of open fields, between the 16th and early 19th centuries, some occupying moated sites of the 12th to 14th centuries and others the sites of settlements that contracted in the 14th to 16th centuries. The relict ridge-and-furrow fieldscapes include some of the best-preserved in England.

Arable has historically been most concentrated on the heavy but fertile soils of the Lias Clay landscapes to the east, although pasture again increased from the 18th century in tandem with enclosure (Thirsk 1984, p.188). Cheese production and fruit orchards, particularly for

cider and perry, were features of this area. Within the Vale of Evesham there was already a distinctly more varied agricultural system by 1700 that was moving towards a market-gardening economy, where smallholders made a living from labour-intensive crops including tobacco (Pitt 1813, p.19; Thirsk 1984, pp.163, 184–7). Although the development of the specialised agriculture may have its origins in the gardening activities of Evesham Abbey, it was improved transport links – roads, and then the opening of Birmingham and Gloucester Railway in 1840 – that opened up urban markets such as Birmingham, London, Cheltenham and Bristol for the fruit and vegetables produced in this area, (Collins 2000, p.397; Martin 1985). The upper Avon and the Leadon valley also developed as important horticultural areas. The horticultural industry in the Vale of Evesham has resulted in farmed strips interspersed with orchards, and Worcestershire County Council has from the 1890s fostered the development of smallholdings.

5.0 Farmstead Types

5.1 NATIONAL OVERVIEW

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

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

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

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

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

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

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

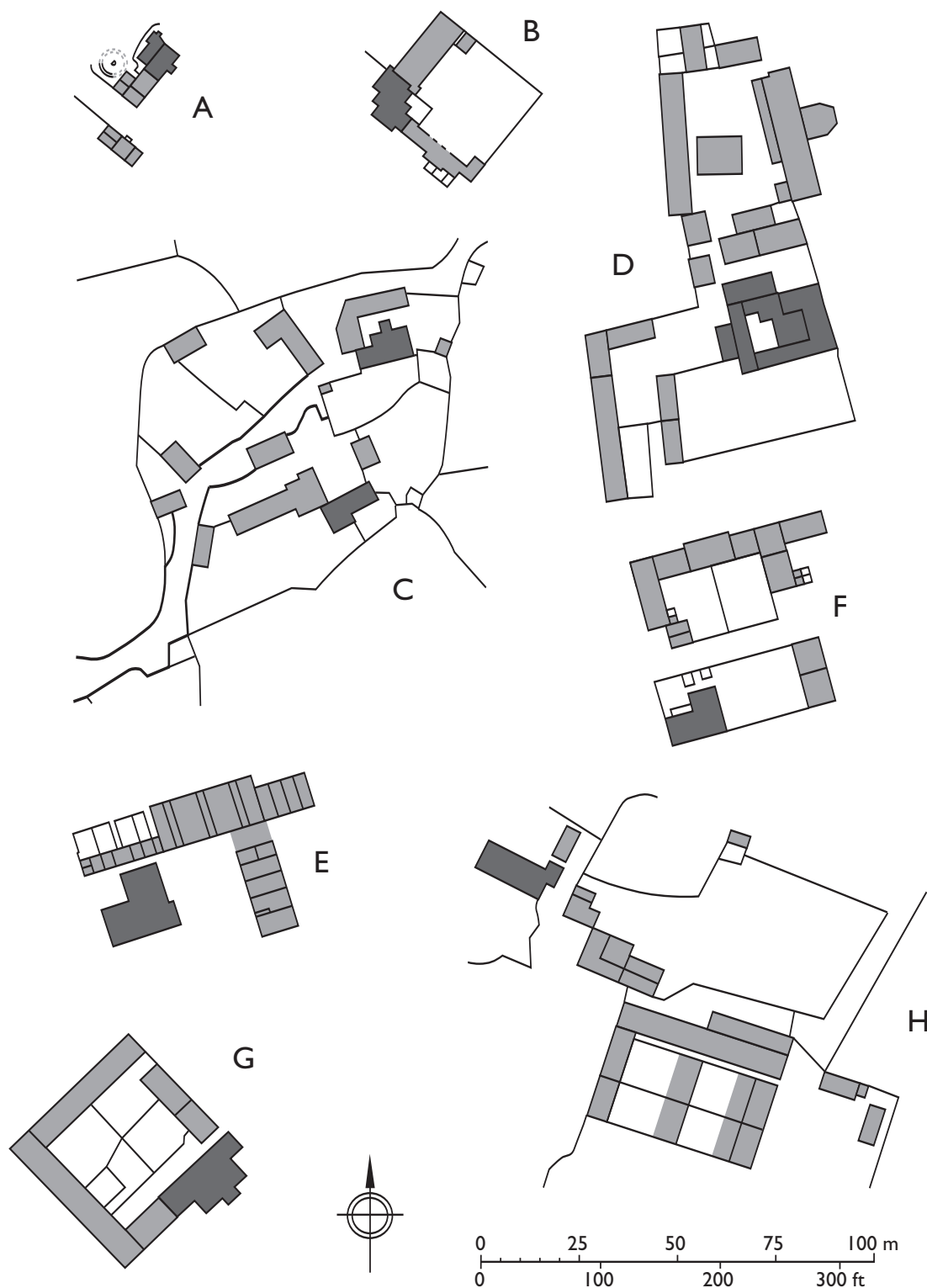
16 Farmstead plan types (Farmhouses are shaded darker)

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

only one or two of the remaining sides.

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

Drawn by Stephen Dent © English Heritage



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

5.1.1 LINEAR PLANS

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

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

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

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

5.1.2 PARALLEL PLANS AND L-SHAPED PLANS

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

5.1.3 DISPERSED PLANS

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

5.1.4 LOOSE COURTYARD PLANS

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

17 Distribution of listed longhouses in England

Surviving longhouses – some of which have been recognised as such in listing descriptions – represent only a small proportion of a building type that was once prevalent across large parts of western and northern England. The concentration of a fine group of surviving longhouses on the eastern fringes of Dartmoor is particularly prominent. Recent research has shown that in some areas such as north Yorkshire many village-based farmhouses have longhouse origins that have previously not been recognised. There are a small number of recorded longhouses along the Welsh border, some of which survived through being converted wholly to cow houses when a new farmhouse was built in the 17th or 18th century.

© Crown copyright. All rights reserved. English Heritage 100019088. 2005

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

5.1.5 REGULAR COURTYARD PLANS

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

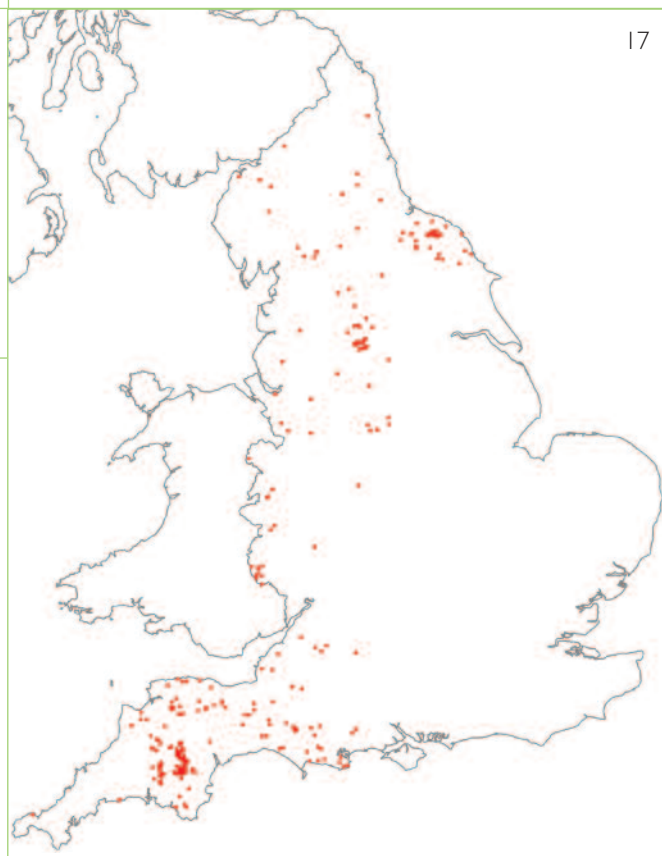
The ultimate examples of courtyard farmsteads are the planned and model farms of the late 18th- and 19th-century estates (Figure 18), the ideas for which were widely disseminated in textbooks and journals (Wade Martins 2002). They are generally associated with holdings over 150 acres, and are far less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

5.2 FACTORS INFLUENCING FARMSTEAD CHARACTER

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

5.2.1 FARM SIZE

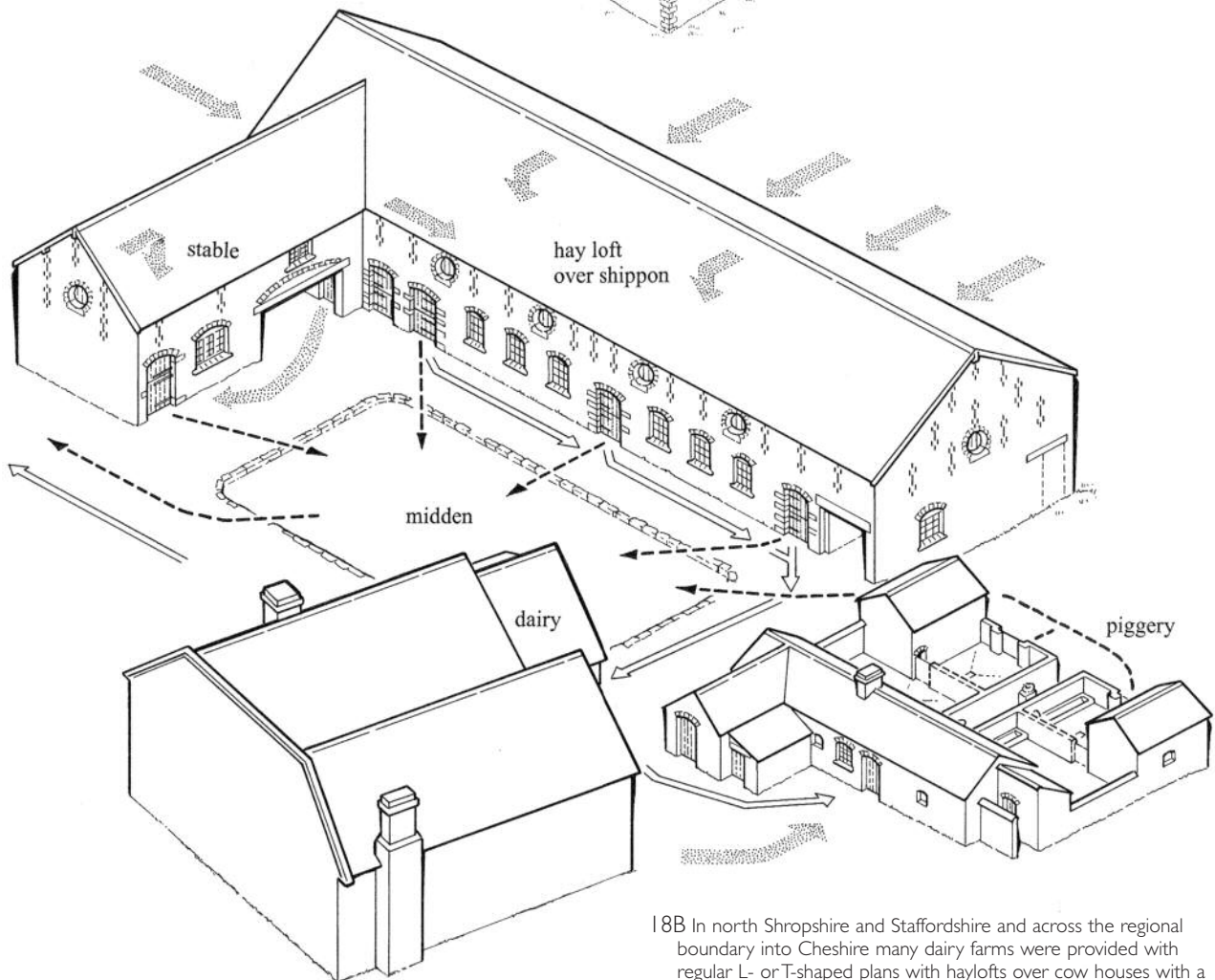
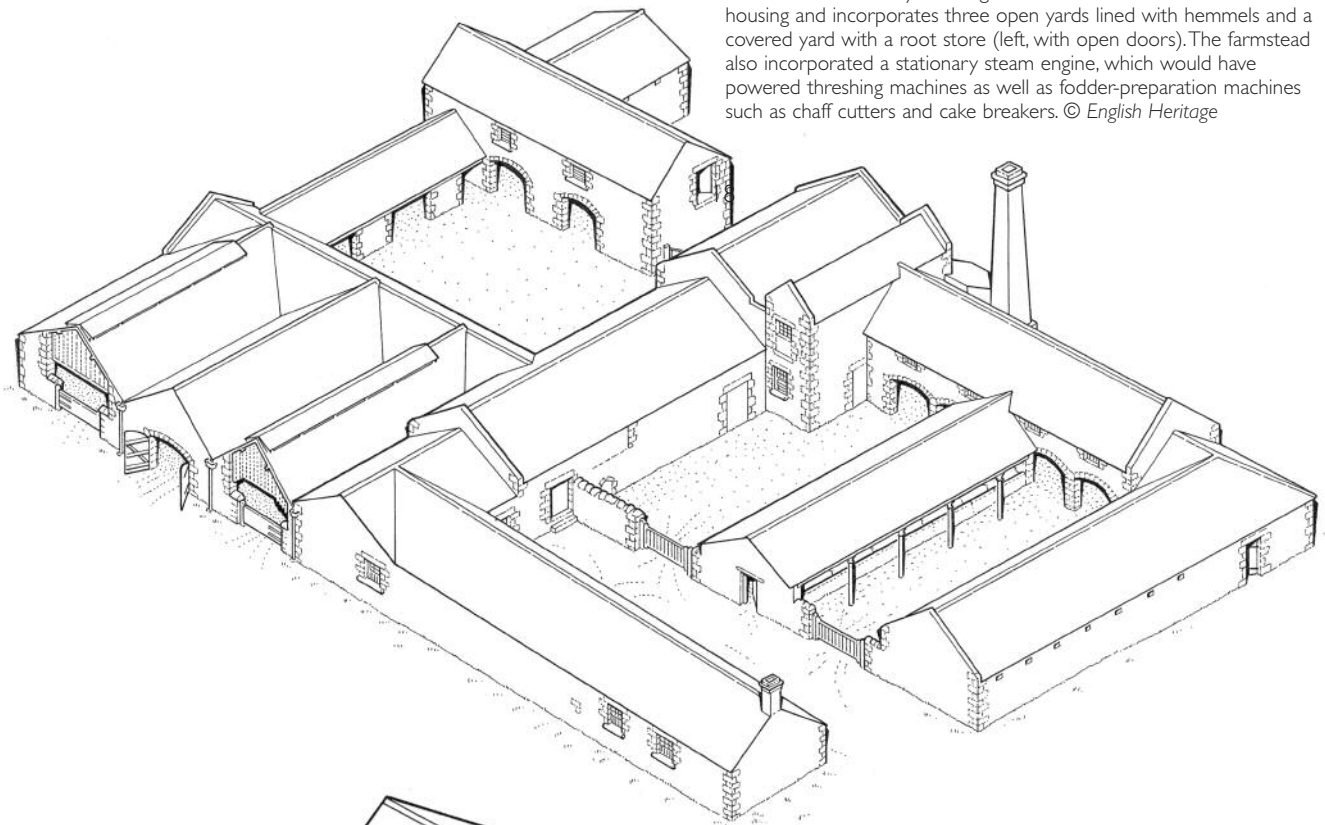
Generally, larger holdings were more likely to be provided with larger and/or more buildings. In the 18th



17

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

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



18B In north Shropshire and Staffordshire and across the regional boundary into Cheshire many dairy farms were provided with regular L- or T-shaped plans with haylofts over cow houses with a mixing barn at one end next to a covered driftway into the yard. (Shropshire Cheshire and Staffordshire Plain) © English Heritage

Riding linear-plan farms, noted by Caird (1852), who kept dairy cattle on holdings of around 20 acres, supplying nearby towns with milk (Mingay 1989, p.940).

5.2.2 ESTATE POLICY

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

5.2.3 LOCAL VARIATION OF FARMING SYSTEMS

The type and form of built fabric display regional variations that are more firmly linked to the broad pattern of land use and its landscape context (whether wood pasture, enclosed or open landscapes). In East Anglia the older timber-framed, evolved farmstead groups with ample barn provision and multi-functional buildings are associated with the small, well-hedged fields typical of the wood-pasture regions, while the large planned farms of brick or brick and flint are found on the later enclosed areas of heath (Wade Martins 1991; Wade Martins & Williamson 1999). The differences within Wiltshire are also clearly demonstrated by the

farm buildings: the chalkland typically has loose courtyard plan steadings with their large-scale barns serving specialist corn and sheep husbandry; the smaller farms associated with dairying and cheese production in the northern wood-pasture area are of a more dispersed plan (Slocombe 1989). The yard management of stock also displayed a strong variation dependent on regional or estate practice. Thus the long-established practice of buying store cattle in spring and selling them on in the autumn survived longest in areas with rich grasslands, such as the Somerset Levels and the east Midlands, in contrast to Norfolk and the eastern lowlands where yards were filled over winter, even during the lean years for the beef industry in the 1930s (Whetham 1978, pp.290–91).

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 WEST MIDLANDS

Linear plans are most closely associated with smaller steadings, in the north-west of the Region and in the hill country of the Welsh border (see Smith 1975 for

distributions of those in Wales) and a few longhouses are known to survive in the west of the Region along the Welsh border (Figure 17). In western lowland Staffordshire, both linear and L-plan farmsteads had largely been swept away by the later 18th century, as farm sizes grew and buildings proliferated (Peters 1969, p.51). A study of farmstead plans in Shropshire found that as farm size increased above 100 acres, courtyard plans took the place of linear and L-plans (Davies 1952, p.99).

Elsewhere in the Region, it was common from at least the 15th century for the house to be set apart from the farm buildings; although a wide range of building types have been documented, from cart sheds, sheep houses and cow houses to granaries and pigsties, none are known to have survived (Dyer 1986, pp.24–5). The presence of foldyards for the fencing in of cattle – documented from at least the mid-17th century in lowland Staffordshire (Peters 1969, p.135) – would have been a major factor in focusing buildings around a yard. Loose courtyard arrangements are also associated with large arable-based farmsteads, which would have had two or more barns, most notably on larger high-status steadings and the corn lands and vales of Herefordshire and Worcestershire – where, relative to Staffordshire, the lack of landlord investment noted by Pitt (1813, p.19) probably contributed towards the preservation of earlier barns. An idea of the variety that could have been found on a substantial 17th-century farm is given in evidence from Buttas Manor (Herefordshire Plateau) in 1623 where 'a large frame of buildings' had been put up. It included six lofts for malting and other purposes, 'fairstable with chambers over; two glazed and ceiled', two barns, a large 'beast house', a large 'sheepcot', a swine house, pigeon-house and a hop yard with 6,000 poles (Darley 1981, p.184). Whether these were the types of building that Duncomb described as 'inconvenient' and 'ill adapted to the purposes for which they were designed,' is not clear (Duncomb 1813, p.29). Only on the Guy's Hospital estate just north of Hereford was there much rebuilding. At Arrendal Farm, in Pipe and Lyde, a courtyard layout was created. As well as the barn, stable and byre, a major part of one side of the

yard was taken up by a cider mill and hop kiln, typical features of a Herefordshire farm.

Pitt wrote in 1813 that whilst the older farm buildings in Staffordshire 'appear often built merely by chance' the new ones were 'well-contrived, comfortable and convenient' (Pitt 1813, p.24). Although regular plans are documented from the mid-18th century, it was the early to mid-19th century that witnessed the greatest concentration of effort in building new steadings or remodelling earlier ones to this plan. This was certainly the case in west lowland Staffordshire, where – as elsewhere in the Region – arable-based steadings were most strongly associated with courtyard plans (Peters 1969, pp.48–50, 180).

In the early 19th century it was generally said that in Shropshire farm buildings were 'inconveniently situated' in villages, and it was claimed that many farms had too many buildings with every farmer anxious to have two barns (Plymley 1813). By the mid-19th century, however, the farmsteads south of Much Wenlock (Shropshire Hills) were described as 'well and substantially built on a square' and elsewhere in the county 'exceedingly good' although some did not provide enough cattle accommodation and stock were still being wintered out of doors (Tanner 1858, pp.29, 61). In 1858, Corve Dale was said to be a prosperous and fertile area, where farmsteads were on a square layout with straw yards and open shedding, 'adapted to the highly respectable class of men who occupy them' (Tanner 1858, p.45). Formal courtyard farms were most common on the great estates, particularly in Staffordshire and, to a lesser extent, north Shropshire, where they could make major architectural statements. Regular U- and E-plan yards were to be found across the estate-owned areas of the Region and in areas where new farms were built on newly enclosed land; for example, they were found on the Shropshire and Staffordshire estates of the Marquis of Stafford (around Lilleshall and Trentham on the Shropshire, Cheshire and Staffordshire Plain), where farmsteads were rebuilt to U-plan layouts open to the south between 1813 and 1820 (Wade Martins 2002, pp.91–4).

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,

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 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 25), and stored in an open yard (rickyard) or a staddle barn. Examples of the latter, typically of late 18th- to early 19th-century date, survive on the downland farms of Hampshire, south Wiltshire and east Dorset. Ricking was not a common practice in southern England until the 19th century, but was noted by observers as being common in northern England and Staffordshire in the 17th century (Colvin & Newman 1981, p.97; Peters 1969, p.65).

6.1.1.3 Combination Barns

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

6.1.1.4 Evidence for mechanisation

The introduction of machine threshing after its invention in 1786 led to the erection 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, 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 WEST MIDLANDS (Figure 20)

6.1.2.1 Threshing Barns

Some fine medieval barns survive in the Region. They include Leigh Court in Worcestershire, the world's largest cruck-framed building, and barns such as Middle Littleton and Bredon in Worcestershire, which share features with examples in Gloucestershire and Somerset. These represent only a small proportion of those originally built: for example, the survival of the mid-14th-century barn at Bredon is attributed to the fact that its entire directly managed farmland (demesne) was leased as a single unit from 1401 and then became the main manor farm.

19 Power in barns: national examples

- A & B A projecting horse engine house that contains a rare example of an in situ horse gin. (North West Norfolk)
- C A water wheel, providing power to the feed-processing machinery in a home dairy farm, remodelled in the 1890s. (Breckland)
- D A farmstead that incorporated a fixed steam engine to drive threshing and other crop- and fodder-processing equipment. (Bedfordshire and Cambridgeshire Claylands)
- E The use of portable steam engines often left no physical evidence within the barn structure but in some cases drive shafts and fly wheels survive in-situ. (Dorset Downs and Cranborne Chase)

All © English Heritage / Michael Williams except E © Bob Edwards

19A



19B



19C



19D



19E



Surviving cruck frames, many of which exceed three bays in length and were built on large or high-status holdings, are concentrated on smaller farms in the west of the Region. The standard barn found on 15th-century peasant holdings comprised two- or three-bay cruck frames (Dyer 1986, pp.28–9), which by the 16th century were being subject to replacement by post-and-truss structures.

In much of the Region timber framing is typical of barns built before the 19th century. Plymley noted in 1813 that barns were generally timber framed and walled with boards, rather than being built of stone or brick (Plymley 1813, p.107). The most common plan has a central threshing floor; the usual five-bay length being exceeded on larger steadings and in arable-based areas such as the Herefordshire Lowlands and Plateau, and the Mid Severn Sandstone Plateau. Internal partitions are found

20 Barns in the West Midlands

- A Timber-framed barn with high stone plinth, part weatherboarding and part wattle infill to the panels. (Herefordshire Lowlands)
- B Timber-framed barn with typical square panel framing, the earlier (16th-century) and more substantial framing being visible to the right. The brick infill dates from the 18th century. (Shropshire, Cheshire and Staffordshire Plain)
- C Large, 18th-century seven bay threshing barn with a central threshing floor. (South Herefordshire and Over Severn)
- D An eight-bay brick barn. Note the pattern of ventilation holes – such decorative treatment is characteristic of brick barns of the West

Midlands Region. (Herefordshire Lowlands)

- E Earth-walled buildings, including barns, are found in the south-east part of the Region. This barn in Warwickshire combines 'mud' and stone walling. (Feldon)
 - F Although linear plan farmsteads are not common in the West Midlands, there are a small number of longhouses and later linear ranges such as this in-line house, barn cow house and stable, probably dating from the late 18th or early 19th century. (Oswestry Uplands)
- A © Bob Edwards; B 151428 Taken as part of the Images of England Project © Mr Alan Earle; C 153881 Taken as part of the Images of England Project © Mr Gary Were; D © Joan Grundy, E & F © Jeremy Lake

20A



20B



20C



20D



20E



20F



throughout the Region, for separating types of crop and – when the barn was empty – to sort livestock or accommodate sheep before shearing.

6.1.2.2 Combination barns

Combination barns, with cattle occupying all or part

of the ground floor, are found in the western hills and the northern dairying areas. Examples, initially of a high status, date from the later 16th century (Barson & Bond 1999) in the dairying areas of the Shropshire and Staffordshire plain. Examples dating from the 17th century are found from the Oswestry Uplands to the

21 Granaries

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

Herefordshire Plateau, in Arden, the South West Peaks and the Needwood area (see 7.1.2).

The requirement for more housing for cattle from the later 18th century, and the increase in the use of mechanisation during the 19th century resulted in barns throughout the Region developing as multi-functional buildings. In some barns only the threshing floor bay was full height, the bays to one or both sides having lofts over livestock or cart provision, as is seen in the Cheshire, Shropshire and Staffordshire Plain (Peters 1969, pp.65–109) and along the western edge of the Region in particular (see Figure 32B, page 62).

6.1.2.3 Mechanisation

Wheel houses for horse-powered machinery are found throughout the Region, and are a feature particularly of the larger farms on the plains of Staffordshire and Shropshire, the high expense of labour in this part of the Region resulting from the availability of employment in the growing industrial centres around Stoke and the Black Country. Many 19th-century estate farms were built to utilise either water or steam power. Caird, on his tour of 1851, found that many estates were well provided with buildings, reporting that, 'They are generally superior to any other we have met with in other parts of the country'. The buildings of Mr Hartshorne of Brancott on Lord Talbot's estate were extensive and included a feeding house with a railway for moving food and a steam engine for threshing grain. On Groundlaw Farm near Trentham on the Marquis of Stafford's estate, barn machinery was worked by water power (Caird 1852, pp.232–5).

6.2 GRANARIES

6.2.1 NATIONAL OVERVIEW (Figures 21 & 22)

Once threshed, grain needed to be stored away from damp and vermin. It would be sold off the farm or retained for animal feed. A small number of specialist granaries built by large landowners, in particular the monastic institutions, survive from the 14th century. Most granaries are of late 18th- and 19th-century date, the need for more storage for grain often coinciding with the necessity for more cart and implement space at a time when commercial farming and markets were expanding and more implements introduced on farms. The construction of detached granaries raised off the



ground, along with the heightening of plinth walls to timber-framed barns, was also a reaction to the threat posed by the rapid spread of the brown rat from the early 18th century (McCann 1996).

Internally granary walls were usually close-boarded or plastered and limewashed, and the floor made of tight-fitting lapped boards to prevent loss of grain. Grain bins, or the slots in vertical timbers for horizontal planking used to make them, are another characteristic feature: close-boarded partitions allowed different crops to be kept separate (Figure 25). Window openings were typically small, and, with ventilation being the main objective, the openings were generally either louvers, sliding vents or grilles.

Grain was typically accommodated in:

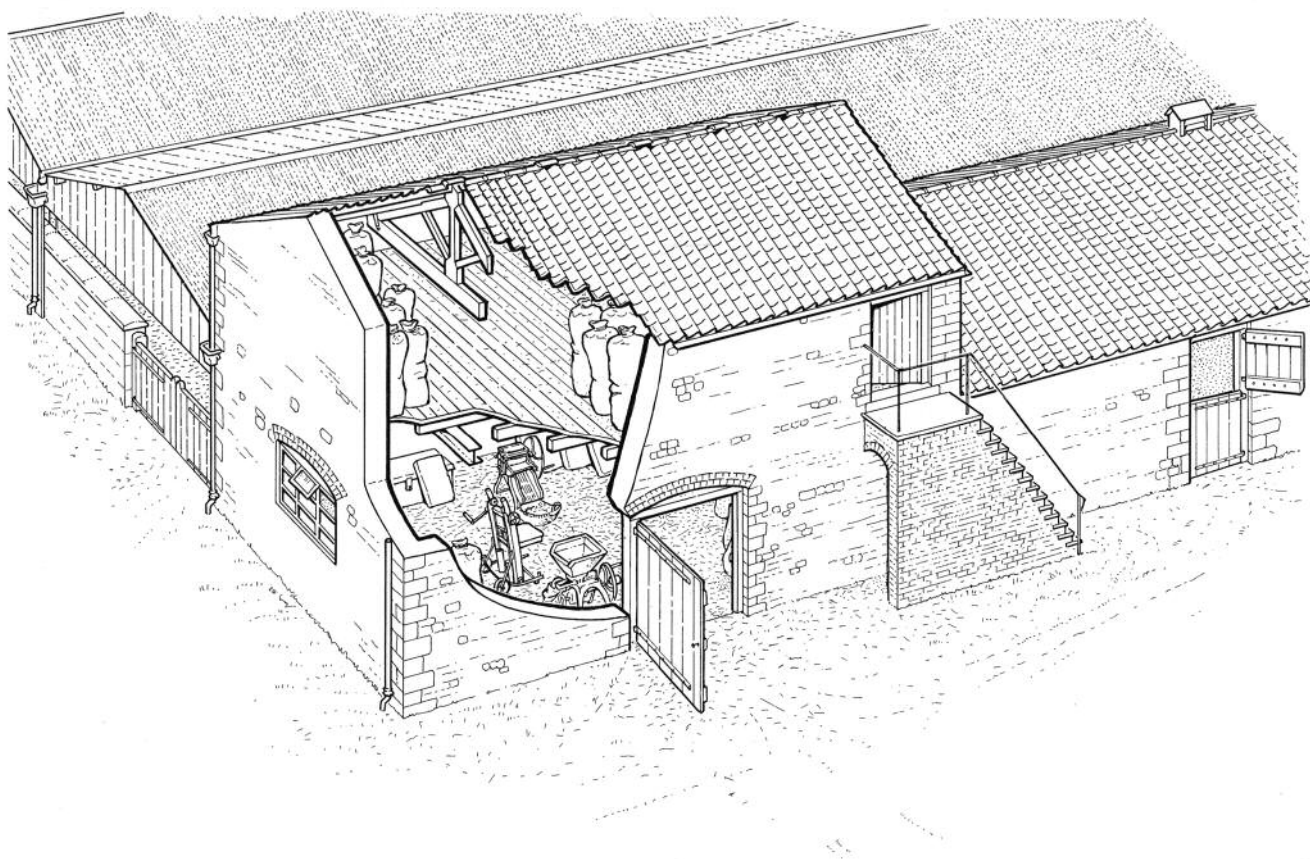
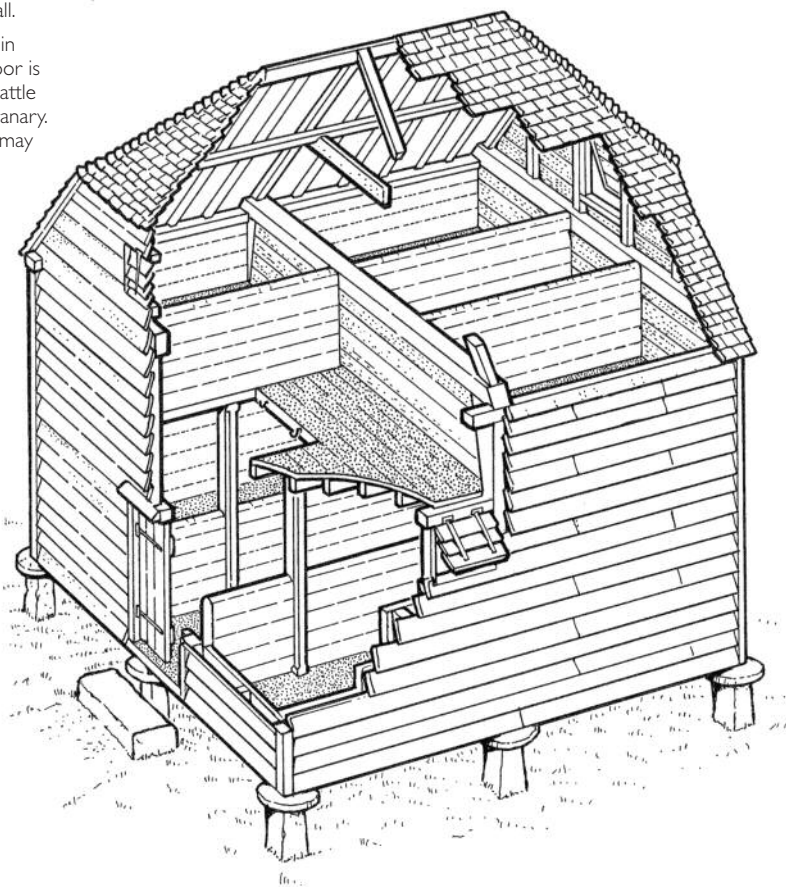
- The lofts of farmhouses, a practice common before 1750.
- Small, square or rectangular structures raised above ground level on mushroom-shaped staddle stones or brick arches and accessed by moveable wooden steps. Internally, they may have been fitted with wooden partitions to create grain bins. They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

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.

© English Heritage



23 Granaries and cart sheds in the West Midlands

Free-standing granaries are rare in the West Midlands; they typically form part of another building – usually a cart shed.

A – C Granaries combined with cart sheds. In B the cart shed has been dug into the slope allowing near-ground level access to the granary at the rear. The upper floor of C has been converted to hay and straw

storage with the removal of much of the cladding to the first floor level. (A Oswestry Uplands B Herefordshire Plateau; C Herefordshire Lowlands)

D Single-storey, brick-built cart shed of 19th-century date. (Arden)

A © Jeremy Lake; B © Bob Edwards; C © Joan Grundy; D © Peter Gaskell

23A



23B



23C



23D



related to the helm, which, according to documents from the 15th to 17th centuries, comprised timber platforms on saddle stones and were concentrated in the Midland counties (Dyer 1984; Needham 1984; Airs 1987; Barley 1990, pp.165–7): none have survived or been excavated. Most are of late 18th- or 19th-century date. Examples abound in Cambridgeshire, Berkshire, Sussex, Hampshire and Wiltshire, but extend into Dorset, Devon and Cornwall. Free-standing granaries are commonly timber-framed, clad in weatherboard or infilled with brick, but brick or stone examples have been found, particularly at the western edge of their distribution. The larger free-standing granaries were of two or even three floors (Figure 21).

- The upper floors of farm buildings, most commonly barns – observable from the 14th century (Le Patourel in Miller 1991, p.872) – and from the 17th century in the South East and East Anglia, much later further north and west, above cart sheds (see 6.3.1). Exteriors are usually marked by shuttered windows for ventilation. The side walls are sometimes weatherboarded, even in regions where weatherboarding is unusual, again to help

ventilation. Examples date from the 17th century in arable areas. A separate external stair often gave access to the granary door (Figure 22). 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.

24 Distribution of listed hop kilns or oast houses in England
The distribution map of listed hop kilns or oast houses clearly demonstrates the importance of these buildings to the character of the south part of the West Midlands Region, where they are concentrated in Herefordshire and Worcestershire.
© Crown copyright. All rights reserved. English Heritage 100019088. 2005

24

6.2.2 GRANARIES IN THE WEST MIDLANDS

(Figure 23)

Historical evidence from both Staffordshire and Herefordshire suggests that grain continued to be stored in lofts within the house until the later 18th or early 19th century, sometimes in purpose-built garrets. Rarely are granaries specifically recorded, the earliest in Staffordshire being from 1752 (Peters 1969, pp.195–7; Grundy 2004, pp.26–8). In Herefordshire malting lofts were recorded and it is possible that these could have also been used for storing grain. However, there are in the Region a small number of listed granaries that date from the 17th century, some of which are free-standing timber-framed buildings. Others are attached to either barns, the farmhouse or are incorporated with other functions such as cart sheds and cider houses. In some of these cases it is possible that grain storage was not the original use of the building.

Granaries in the Region typically form part of another structure rather than being free-standing buildings raised on staddle stones or brick piers, as is common in the east and south of England; examples of the latter can be found in Warwickshire and Worcestershire. Most granaries are over cart sheds whilst some are over stables or other livestock housing. Occasionally they are found associated with other buildings. In Herefordshire granaries sometimes form part of a combination building incorporating a hop kiln and a cider house (although some are the result of extension and adaptation). The opportunity to combine uses may explain why east Herefordshire granaries often have no grain bins, possibly because many lofts doubled up as hop-cooling rooms where a large clear floor would be a priority (Grundy 2004, pp.26–7). A few examples of granaries located over a horse-engine house also survive in the Region.

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 WEST MIDLANDS

(Figure 23)

Both single-storey and lofted cart sheds are found in the Region. The earliest surviving cart sheds date from the 17th century but the majority are late 18th- or 19th-century. In the southern part of the Region cart sheds were also known as 'wain houses'. Relatively few lofted examples are found in Herefordshire, but after about 1870 some estates built cart sheds with granaries or hop rooms above (Grundy 2004, p.28). Small, multi-functional buildings that incorporate a one- or two-bay cart shed, a stable and a granary are also found on some smaller farms, for example in the hill country of Herefordshire and Shropshire. In Staffordshire some late 19th-century cart sheds had open fronts and backs (Peters 1969, p.188).

25 Hop kilns in the West Midlands Region

A & B Two examples of larger hop kiln groups with four and six kilns.
(Herefordshire Plateau)

C – E Hop kilns usually form detached buildings but in some cases are part of ranges attached to the farmhouse. In D the hop kiln is part of a complex with a stable and a cider house beneath the cooling floor of

the stowage. (C Malvern Hills; D Herefordshire Lowlands; E Teme Valley)

F A slatted floor over the kiln where the hops are spread to dry – here a fine wire mesh prevents the hops falling between the slats; historically a hair mat served this function. (Herefordshire Lowlands)

A–C Joan Grundy; E © Peter Gaskell; D & F © Bob Edwards

25A



25B



25C



25D



25E



25F



6.4 HOP KILNS

6.4.1 NATIONAL OVERVIEW

Although hops had been used in beer making in the medieval period, the commercial cultivation of hops did not begin until the 16th century. Until a decline in the market for hops in the late 19th century the crop was grown in 38 English counties (Walton & Walton 1998,

p.4) but now Herefordshire and Kent are recognised as the primary hop-growing areas of the country.

Mature hops have to be dried after picking and where hops were grown in any quantity this was carried out in a similar fashion to the drying of barley in a malt house. Indeed, it may be that malt houses could also have served as hop kilns for the few weeks of the year when

26 Hay barns: national examples

Buildings including storage space for hay are found in the **East Midlands**, usually in lofts above stables or cow sheds (see Figures 34A and B). 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 Cheshire, Shropshire and Staffordshire Plain)

A & D © Jeremy Lake; B & C © Jen Deadman

26A



26B

26C



26D



the crop was harvested. The hops were laid out on a horse-hair mat on a slatted floor and turned periodically as heat from a kiln below passed through them. After drying, the hops were packed in readiness for transportation to a brewery. The alternative to drying hops in a kiln was to dry them slowly in the loft of the house and this may have been the most common way of processing the crop across much of the country where hops were grown on a small scale.

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

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

The circular kiln with its conical roof was a development of the early 19th century. It was believed that circular oasts were more efficient but this was eventually shown not to be the case and so later 19th-century kilns are usually square (Walton & Walton 1998, pp.11–13). In oasts built during the period of the brick tax (1784–1850) the upper part of the stowage was often built in timber frame and weatherboarded to reduce the cost. Oast houses may have comprised a single kiln whilst there could be as many as eight kilns. One of the largest groups of kilns was on the Whitbread hop farm in Kent

27 Distribution of listed cider houses in England

The West Midlands Region, and Herefordshire and Worcestershire in particular, contains a high proportion of the country's listed cider houses. These buildings, which can be detached structures or form part of a range of buildings, are an important feature of the farmsteads in the southern part of the Region.

© Crown copyright. All rights reserved. English Heritage 100019088. 2005



27

where there were 20 kilns. Square and circular kilns may have been combined in one building, and although square and circular kilns were typical, there are a few examples of octagonal kilns. Kilns could also be constructed in other buildings, such as barns, and it is possible that evidence for early kilns may survive in some barns.

6.4.2 HOP KILNS IN THE WEST MIDLANDS

Hops were grown in increasing quantities from the 18th century in the southern part of the Region, particularly to the north-east of Hereford. By the early 19th century Herefordshire was supplying 24% of the hops grown in England and Wales (Holmes 1978, p.12). Hop kilns are a highly characteristic feature of the landscape of Herefordshire and western Worcestershire (the Teme Valley in particular), as indicated by the map of listed oast houses and hop kilns (Figure 24). They are frequently found integrated into combination ranges, and the stowage was often accommodated over a cider mill.

6.5 HAY BARNES AND OTHER CROP-RELATED BUILDINGS

6.5.1 NATIONAL OVERVIEW (Figure 26)

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

28 Cider-making related buildings and structures. Cider houses rarely display any distinctive external features and often incorporate other functions, in this case a granary above the cider house. Inside the cider mill and press are elements that are highly vulnerable to being removed to enable an alternative use to be made of the space. Cider houses that retain mills and/or presses are of particular importance. (A Clun and North West Herefordshire Hills; B and C Herefordshire Plateau)
© Bob Edwards



28A



28B



28C

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 (Figure 27).

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.

6.5.2 HAY BARNs AND OTHER CIDER HOUSES IN THE WEST MIDLANDS (Figure 28)

Hay barns, the great majority dating from the mid- or late 19th century, are found throughout the Region. A typical feature of Herefordshire farms, for example, is the corrugated iron Dutch barn. These were almost all made by Alexander and Duncan of Leominster from the late 19th century. In early examples the stanchions as well as the roof supports are of wood, whilst in later ones only the roof trusses are wood with iron tension bars. Finally, by 1900, the whole frame was of iron. Rows of three or four of these barns are to be seen on many of the larger livestock farms in the area. Non-iron examples consisted of no more than brick piers supporting a roof with no end gables, as at Manor Farm, Badley-in-the-Moors.

Cider was commercially produced from the 13th century (Jack 1988, p.473) and was given added impetus with the publication of Beale's *Herefordshire Orchards* in 1657 (Thirsk 1984, pp.163, 159). Growing of apples for cider was important in the south of the Region, from parts of the Shropshire Hills downwards. In Herefordshire alone there are 73 listed cider houses although they are often difficult to distinguish from other storage buildings on the farm. Sometimes parts of the cider mill survive in situ on the ground floor with the apple store above (Major 1988, p.67).

Cider houses are frequently incorporated into other buildings ranged around the yard. Where the cider house is a separate building it usually does not have any particular external characteristics, other than a wide doorway allowing for the passage of barrels, although occasionally the press survives within the building. Cider could be kept for far longer than beer, and thus on some farms where cider was grown for export cider houses were built with storage for barrels.

7.0 Key Building Types: Animals and Animal Products

7.1 CATTLE HOUSING

7.1.1 NATIONAL OVERVIEW (Figure 29)

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

29 Cattle housing: national examples

- 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 Northumberland Coastal Plain)
- E The interior of a covered yard, on a home farm of 1875. (Shropshire, Cheshire and Staffordshire Plain)

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



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-

30 Distribution of listed linhays in England

This map appears to show linhays as a characteristic feature of the South West Region only. However, this distribution is probably misleading, partly through the fact that only listed buildings are shown and partly because of the inconsistent use of the term 'linhay'. Linhays are found in Herefordshire at least. There is need here to ensure the consistent use of terminology and to feed research through to the national level to allow the more accurate mapping of building types.

© Crown copyright. All rights reserved. English Heritage 100019088. 2005

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 29D)

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 WEST MIDLANDS (Figures 31 & 32)

Cattle housing is documented from the medieval period on both high-status and peasant holdings, but no examples are known to have survived (Dyer 1986, p.25). Before the 18th century the small mixed farms found over much of the Region usually kept a small herd of no more than four or five cattle, primarily for



milking and making butter and cheese. These farms would have had mostly small-scale cattle housing, if any. In the west of the Region a number of former longhouses survive, some now serving only an agricultural function. The longhouse tradition appears to have continued into the 18th century in this area (Figure 32E).

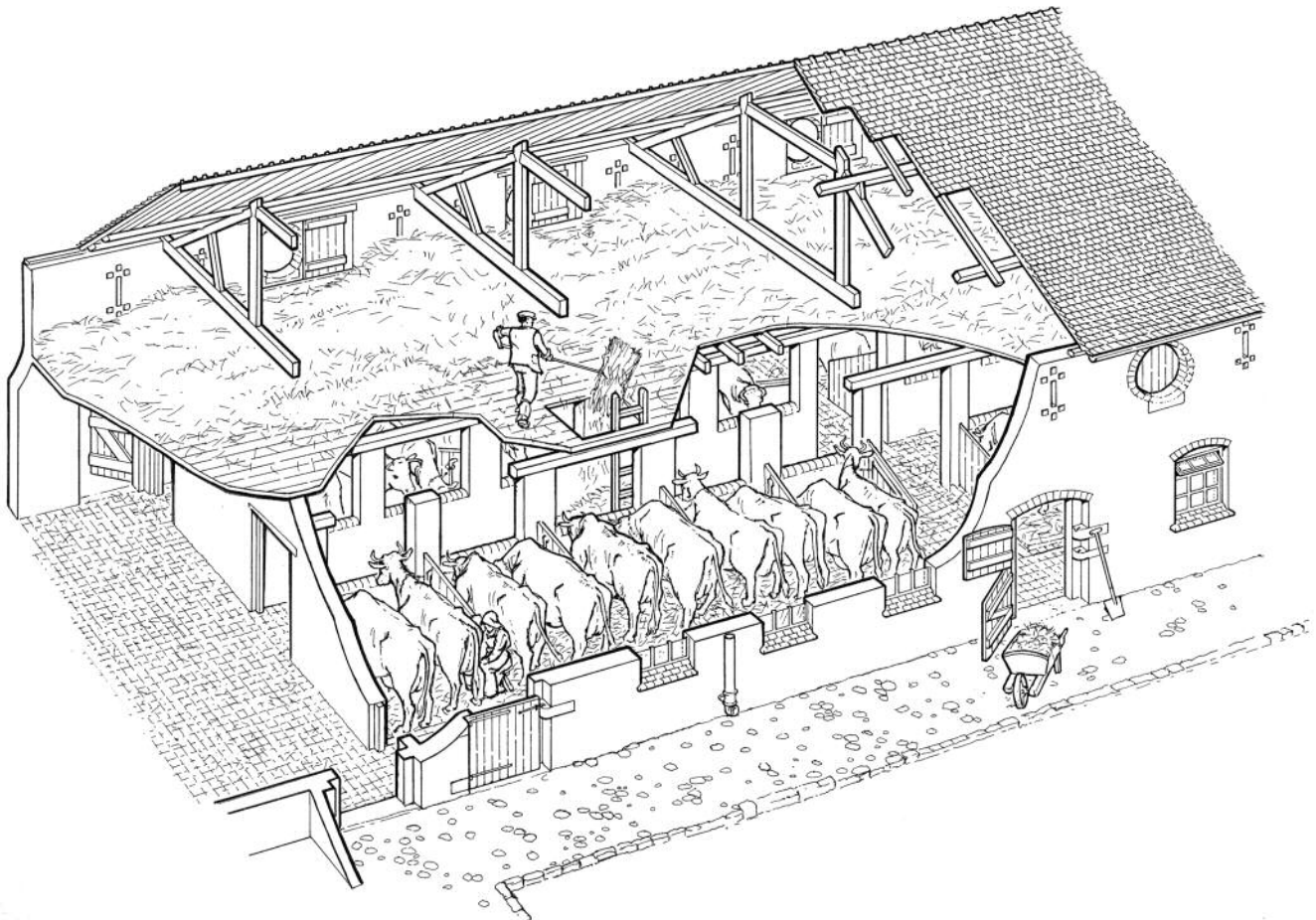
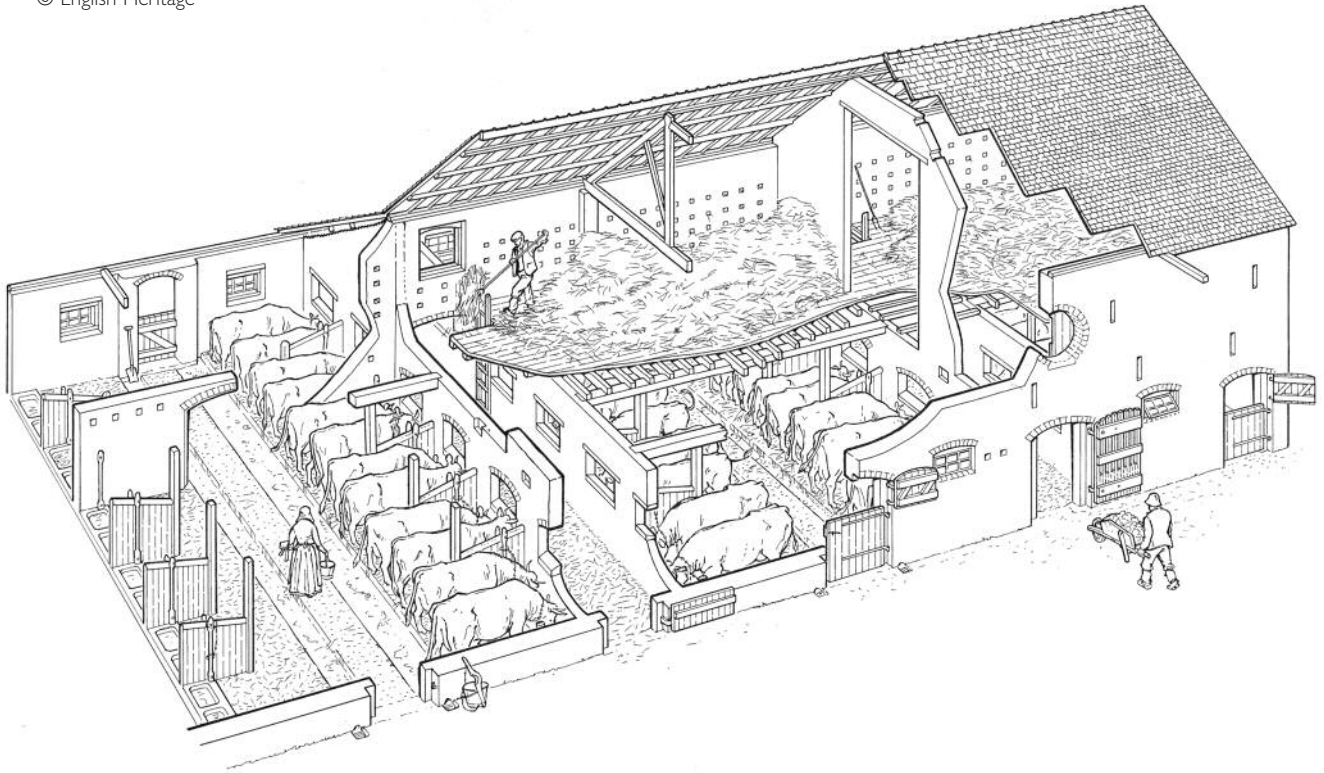
Small numbers of timber-framed pre-1750 cow houses, as documented for example in the west of the Staffordshire Plain (Peters 1969, pp.132, 141–2), have survived. Examples built in brick date from the early 18th century, and generally have the cattle stalled along the length of the building. These are either single storey or two-storey structures, with entrances in the side wall below openings into the upper hayloft. These are found in the north of Shropshire, and along the west of the Region from the Oswestry Uplands to South Herefordshire and the Malverns. Examples built in stone survive in the Staffordshire Peak District. In some cases cattle housing formed part of multi-functional barns; there are examples of pre-1750 combination barns with ground-floor accommodation for cattle in north Shropshire, the Staffordshire Peaks and the borders hill country (Barson & Bond 1999; Lake 1989, pp.22–3). All these survivals are of rarity and importance in a national context.

By the early 19th century, cattle were being stalled in a single row facing a feeding passage placed along a side wall, which reduced the risk of infection and eased feeding and mucking out (Figure 31). In the west of the Staffordshire Plain, these rapidly replaced the earlier types from 1815 (Peters 1969, pp.150–1). They were

31 Cut-away drawings of cow houses

Cattle were typically tethered in a line across the width of the cow house (A a cross-shippon) until the early 19th century, after which it became usual to tether the beasts along the length of the building (B a lengthwise shippon) with a feeding passage along the centre and manure passages along the side walls. Buildings of the later type usually provided better ventilation and so controlled the spread of disease more effectively.

© English Heritage



32 Cattle housing in the West Midlands Region

- A A 17th-century cow house. At this date it was unusual to provide accommodation for cattle, so this timber-framed and stone-built cow house is a highly significant and rare survival. (Shropshire Hills)
- B A large late 17th-century timber-framed cow shed, floored throughout. (Shropshire Hills)
- C Cattle housing can be found in multi-functional barns either on the level as in C or, where the barn runs across the slope, set at a lower

- level with the barn floor above. (Black Mountains and Golden Valley)
 - D Cow houses with open-fronted hay lofts above. Although not the classic Devon linhay, this form of linhay with slightly greater enclosure along the upper part of the front elevation is also found in the South West Region. (Herefordshire Lowlands)
- A 256606 Taken as part of the Images of England project © Myk Briggs
 B 154248 Taken as part of the Images of England project © Jennifer McKirdy; C & D © Bob Edwards (continued overleaf)



32A



32C



32B



32D

often provided with separate feed-preparation rooms, and on larger farms could be effectively designed (usually after the 1840s) as L-plan ranges with the feeding room placed in the angle.

On the larger-scale dairy enterprises in the north-west of the Region on the Staffordshire and Shropshire Plain, cattle housing similar to that found across the border in Cheshire was provided. Here brick shippens with large haylofts above were typical and were characterised by decorative ventilation panels in the hay storage areas above and dominant loading bays, often in the form of circular pitching eyes. From the early 19th century, wider buildings were being built, which had entrances in both side walls and gable ends, the latter to a long axial passage into which cattle would face: these served as both a feeding passage and a source of cross-ventilation. Increasingly from the mid-19th century the stalls were being turned round and placed across the building in back-to-back blocks with doors in the front wall to serve each group, the cattle facing a vented passageway into which fodder could be dropped from above.

There are surviving examples of open-fronted shelter sheds arranged around a yard with other buildings or built as lean-tos against the barn. Open-fronted shelter sheds date from the mid-18th century, although examples of pre-1800 date are very rare (Peters 1969, pp.146–50). In addition to the open-fronted sheds around a yard for loose cattle, in Worcestershire an open-fronted cow house can also be found in which the cattle were stalled rather than allowed to roam in the yard (Peters 2003, plate 21). There are some very extensive shelter shed ranges, associated with the production of fatstock, in the Herefordshire Plateau and Lowlands and the Golden Valley. Looseboxes, also for the production of fatstock, are found throughout the Region, and are most commonly of mid-19th century or later date.

There is also a very small number of linhays in the Herefordshire Plateau and Lowlands: open-fronted shelter sheds with an open-fronted hayloft above. The hay might have been stored on a floor created by poles or if properly floored there might have been a space along the rear to allow hay to be dropped to the feed

32 Cattle housing in the West Midlands Region (continued)

E A mid-19th-century loosebox range. (Shropshire, Cheshire and Staffordshire Plain)

F & G Across much of the Region open-fronted shelter sheds are common, often attached to a barn and forming part of a larger yard.

(F Herefordshire Lowlands; G Black Mountains and Golden Valley)

H A bull pen – a single loosebox with its own yard – in this case attached to the side of a barn. (Shropshire, Cheshire and Staffordshire Plain)

© E Susanna Wade Martins; F Joan Grundy; G © Bob Edwards; H © Jeremy Lake



racks below. These buildings are usually associated with the South West, and Devon in particular:

By the late 19th century, the large-scale beef enterprises of Herefordshire and the keeping of pedigree beef cattle resulted in extensive new cattle building, including yards with shelter sheds, covered yards from the 1850s and, especially from the 1880s, the roofing over with prefabricated iron frames of earlier yards.

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 quite 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



33 A typical stable interior for working horses, showing the stalls that prevented the horses biting and kicking each other; the hay rack and cobbled floor: (Dorset Downs and Cranborne Chase) © Bob Edwards

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 WEST MIDLANDS

The majority of dairies in the West Midlands formed part of the farmhouse. Cheese chambers are well documented (for example in Hey 1984, pp.143, 157). In some cases a cheese loft was located over the dairy. It is probable that there are former dairy buildings and cheese lofts surviving that have not been recognised as such and have been considered as simple outbuildings or stores.

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.

Stable interiors are characterised by:

- Horses commonly stalled in pairs with wooden stall divisions between them to stop them kicking each other (Figure 33). 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.

34 Stables in the West Midlands Region

- A Beyond the small barn is a timber-framed and brick stable, probably dating from the 18th century. (Arden)
 B – D Most stables encountered in the Region are brick-built with clay tile roofs (although D also uses large Old Red Sandstone blocks) and range from relatively large stable blocks to small stables that can form

part of a larger range of buildings. Most stables are lofted although later examples are likely to be single storey to assist ventilation. (B Severn and Avon Vales; C Needwood and South Derbyshire Claylands; D Shropshire, Cheshire and Staffordshire Plain)
 A © Peter Gaskell; B & D © Jeremy Lake; C © Bob Edwards



34A



34B



34C



34D

- 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.

7.3.2 STABLES IN THE WEST MIDLANDS (Figure 34)
 By the 18th century horses were replacing oxen, and no oxen houses are known to have survived in the Region.

35 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

35A



35B



35C



Some free-standing stables of the 16th and 17th centuries survive, although most early examples have been greatly altered. More are to be found dating from after 1700. Early examples have the stalls across the end walls, whilst in examples dating from the later 18th century onwards the stalls are usually along the side walls, allowing more scope for lengthening the building and thus housing more horses. Haylofts are generally found over pre-19th-century stables. All those located in west Staffordshire and built before 1770 were lofted (Peters 1969). Stables dating from the 17th and 18th centuries are also found as part of combination buildings; for example, in Herefordshire stables are often attached to barns.

7.4 PIG HOUSING

7.4.1 NATIONAL OVERVIEW (Figure 35)

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 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 WEST MIDLANDS

Pigsties are most strongly associated with the dairying areas of Shropshire and Staffordshire. They are most commonly associated with their own yards. A survey in Staffordshire showed that many farms in west

Staffordshire had pigsties in the late 18th and early 19th centuries. Within the survey area there were 155 pigsties by 1880 but many have since been demolished (Peters 1969, p.200).

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 WEST MIDLANDS

There is no recorded built evidence for sheep housing in this Region, although winter sheep housing (probably of a temporary form) and wool lofts in houses are recorded, for example in Herefordshire (Taylor 1997, p.137).

7.6 DOVES AND POULTRY

7.6.1 NATIONAL OVERVIEW (Figures 36 & 37)

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.

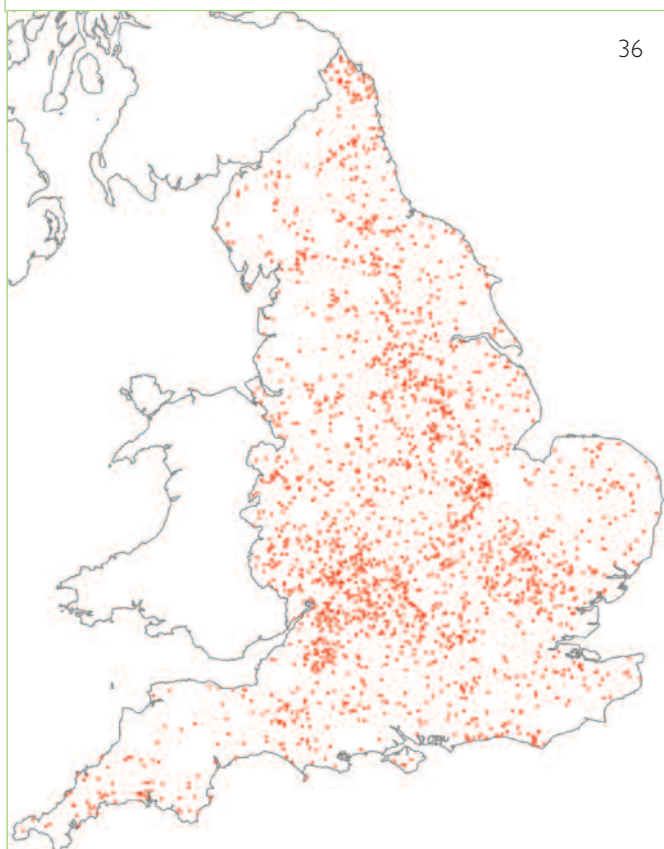
Dovecotes are usually square or circular towers with pyramidal or conical roofs, but a number of varying forms have been found, including tun-bellied dovecotes (where the walls bulge outward slightly before tapering upward) and beehive dovecotes with corbelled stone roofs. There are also lectern dovecotes, 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

36 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.
© Crown copyright. All rights reserved. English Heritage 100019088. 2005



36

37A The corbelled stone roof of this beehive dovecote is a distinctive method of construction that is only found in the south-west and north-west 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)



37A



37B

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 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 poulterery 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 WEST MIDLANDS (Figure 37)

7.6.2.1 Dovecotes

These survive in large numbers across the Region, usually associated with gentrified farms, although there is a

37C



37 (continued)

- C Square stone dovecote with pitched roof. In the north of England a few 'lectern' dovecotes with mono-pitch roofs, more typical of Scotland, are found.
 - 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 built into the gable end of a brick barn (Arden)
 - 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 © English Heritage NMR BB7/ 01134; D 149817 Taken as part of the Images of England project © Mr Chris Tresise; E & H © Bob Edwards; F Peter Gaskell; G Jen Deadman

37D



37F



37E



37G



37H



concentration in numbers of listed dovecotes in the south and west of the Region (Figure 36). The earliest examples are medieval but the majority date from the 18th and 19th centuries, built mainly for their picturesque value. Some were incorporated into other farm building ranges.

Generally, the dovecotes of the West Midlands do not exhibit any particular regional characteristics other than in the use of local building materials. The use of timber framing for many of these buildings across Herefordshire and Worcestershire in particular is an important feature. In Worcestershire there is a rare, and possibly the sole,

surviving example of a cruck-framed dovecote (OAU 1995, p.24).

7.6.2.2 Poultry yards

Sometimes poultry yards were regarded as decorative features and large examples, such as those at Teddesely Home Farm and Hatherton Hall must have been producing eggs for sale. Such examples are, however, rare. Historic buildings for poultry are most likely to survive when incorporated into other buildings; for example, when they were combined with a pigsty (a building sometimes referred to as a 'poultiggery').

8.0 Key Building Types: Other Farmstead Buildings

8.1 OUTFARMS AND FIELD BARNs

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

38 Outfarms and fields barns in the West Midlands Region
Outfarms and field barns are found across the much of the Region although the surviving examples represent a fraction of those shown on 19th-century maps. Outfarms include large complexes such as those associated with large estates in Staffordshire, large threshing

barns (A Herefordshire Lowlands), which may also have an attached yard for cattle, and small field barns and cow houses such as those in B (Black Mountains and Golden Valley) and C (Needwood and South Derbyshire Claylands).
A © Peter Gaskell; B & C © Bob Edwards



38A



38B



38C

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 BARNs IN THE WEST MIDLANDS (Figure 38)

At present there is minimal information available regarding outfarms and field barns in the West Midlands Region except for west Staffordshire, where a survey showed that early field barns stood alone, without any shelter sheds, but by 1754 four of the 14 near Penkridge included sheds and fold yards (Peters 1969, pp.31–4). In Warwickshire and Herefordshire isolated threshing barns dating from the 17th and 18th centuries are found outside the nucleated cores of settlements; for example, around Alcester (Feldon) and in the Herefordshire Plateau and Lowlands. Outfarms in areas of parliamentary enclosure and on large estate-managed farms are typically of mid-19th-century date. Threshing barns with shelter sheds were clearly geared to the production of fatstock and manure for the surrounding fields. Peters noted a higher proportion on areas of richer arable soil (pp.31–5).

Field barns are found in the pastoral areas of the Peak District, where small stone buildings providing haylofts above and livestock accommodation below are to be found in the corners of many fields. Most date from the late 18th and 19th centuries.

The research into outfarms in west lowland Staffordshire confirmed their vulnerability to demolition. Ninety-nine were located on estate maps, but very few of these were still standing in 1969 (Peters 1969, pp.31–2). Over 25 years later, how many of these still survive?

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.

8.2.2 MINOR AND MISCELLANEOUS BUILDINGS IN THE WEST MIDLANDS

Generally, the range of other farmstead buildings found in the West Midlands Region are similar to those found across the country, differing only in the local materials used in their construction.

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

- Barson, S. & R. Bond (1999) 'Ightfield Hall Farm Barn, Ightfield, North Shropshire', *Journal of the Historic Farm Buildings Group* **13**: pp.18–26
- Betty, J. (1999) 'The development of water meadows in the southern counties' in Cook & Williamson, *Water Management in the English Landscape*: pp.179–95
- Bowden, M. (2003) *The Malvern Hills: An ancient landscape*, English Heritage, Swindon
- Charles, F.W.B. & W. Horn (1973) 'The Cruck-Built Barn at Leigh Court, Worcestershire, England' *Journal of the Society of Architectural Historians* **32**: No. 1
- Charles, F.W.B. (1997) *The Great Barn of Bredon: Its Fire and Reconstruction*. Oxbow Books, Oxford
- Davies, D.C.G. (1952) *Historic Farmstead and Farmhouse Types in the Shropshire Region*. MA thesis, University of Manchester
- Dyer, C (1986) 'English Peasant Building in the Later Middle Ages', *Medieval Archaeology* **30**: pp.19–45
- Dyer, C. (1991) 'The West Midlands', in Miller [Ed] *Agrarian History of England and Wales* **3**: pp.77–91, 222–37
- Duncumb, J. (1813) *General View of the Agriculture of Herefordshire*, Board of Agriculture, London
- Edwards, P.R (1977) 'The Development of Dairy Farming on the North Shropshire Plain in the Seventeenth Century', *Midland History* **4**: pp.175–90
- Evershed, H. (1856) 'Farming of Warwickshire', *JRASE* **17**: pp.475–94
- Grundy, J. (2004) 'Granaries in East Herefordshire', *Historic Farm Building Group Review* **01**/Summer 2004
- Grundy, J. (n.d.) *Granaries in East Herefordshire* Unpublished MS
- Hey, D. (1984) 'The North-West Midlands' in Thirsk, J. [Ed] *Agrarian History of England and Wales*. **Vi**: pp.129–58
- Hill, M. (2003) *An Evaluation of Farm Buildings on the Brockhampton Estate, Herefordshire*. National Trust (unpublished)
- Holmes, I. (1978) 'The Agricultural Use of the Herefordshire House and its Outbuildings', *Vernacular Architecture*. **9**: pp.12–16
- Jack, I.R. (1988) 'Wales and the Marches' in Hallam [Ed] *The Agrarian History of England and Wales* **2**: pp. 412–98
- Jarvis, P.J. (1982) 'The perception of region in nineteenth century Warwickshire and Worcestershire' in Slater, T.R. & P.J. Jarvis, *An Historical Geography of Warwickshire and Worcestershire*: pp.301–22
- Loch, J. (1820) *An Account of the improvements on the estates of the Marquis of Stafford*, Longman, London
- MAFF (2000) *England Rural Development Programme: Appendix A5 – West Midlands Region*

- Major, J. K. (1988) 'Farm Study: Lays Farm, Tarrington, Herefordshire', *Journal of the Historic Farm Buildings Group* **2**: pp.65–71
- Martin, J.V. (1985) 'The Social and Economic Origins of the Vale of Evesham Market Gardening Industry', *Agricultural History Review* **33.1**: pp.41–50
- McCann, J. (2004) *Clay and Cob Buildings*. Shire Publications, Princes Risborough
- ODPM (2003) *Regional Planning Guidance 11 'The West Midlands'* (draft)
- Peters, J.E.C. (1969) *The Development of Farm Buildings in West Lowland Staffordshire up to 1880*, Manchester University Press, Manchester
- Phillips, A.D.M. [Ed] (1996) *The Staffordshire Reports of Andrew Thompson to the Enclosure Commissioners, 1858–68*, Shropshire Record Society
- Pitt, W. (1808) *General View of the Agriculture of Staffordshire*, Board of Agriculture, London
- Pitt, W. (1813) *General View of the Agriculture of the County of Staffordshire*, Board of Agriculture, London
- Pitt, W. (1813) *General View of the Agriculture of the County of Worcestershire*, Board of Agriculture, London
- Plymley, J. (1813) *General View of the Agriculture of Shropshire*, Board of Agriculture, London
- Rowlandson, T. (1853) 'Farming of Herefordshire', *JRASE* **14**: pp.433–56
- RCHME (1931) Vol 1 *South-West Herefordshire*. HMSO, London
- RCHME (1932) Vol 2 *East Herefordshire*. HMSO, London
- RCHME (1934) Vol 3 *North-West Herefordshire*. HMSO, London
- Scard, M.A. (1990) *The Building Stones of Shropshire*. Swan Hill Press, Shrewsbury
- Stamper, P. (1989) 'The farmer feeds us all' *A Short History of Shropshire Agriculture*, V.C.H, booklet no.3
- Taylor, E. (1997) *Kings Caple in Archenfield*, Logaston Press, Logaston
- Tanner, H. (1858) 'The Agriculture of Shropshire', *JRASE* **19**: pp.1–65
- Thirsk, J. (1984) 'The South-West Midlands' in Thirsk, J. [Ed] *Agrarian History of England and Wales*. **Vi**: pp.159–96
- Williamson, T. (2002) *The Transformation of Rural England*, University of Exeter Press, 2002

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
- 65 **Shropshire Hills** www.countryside.gov.uk/Images/JCA064%20-%20Potteries%20and%20Churnet%20Valley_tcm2-21175.pdf
- 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
- 83 **South Norfolk and High Suffolk Claylands** www.countryside.gov.uk/Images/JCA083%20-%20South%20Norfolk%20and%20High%20Suffolk%20Claylands_tcm2-21186.pdf
- 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
- 106 **Severn and Avon Vales** www.countryside.gov.uk/Images/JCA106%20-%20Severn%20and%20Avon%20Vales_tcm2-21199.pdf
- 107 **Cotswolds** www.countryside.gov.uk/Images/JCA107%20-%20Cotswolds_tcm2-21200.pdf
- 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
- 111 **Northern Thames Basin** www.countryside.gov.uk/Images/JCA111_tcm2-21204.pdf
- 112 **Inner London** www.countryside.gov.uk/Images/JCA112_tcm2-21516.pdf
- 113 **North Kent Plain** www.countryside.gov.uk/Images/JCA113_tcm2-21533.pdf
- 114 **Thames Basin Lowlands** www.countryside.gov.uk/Images/JCA114_tcm2-21554.pdf
- 115 **Thames Valley** www.countryside.gov.uk/Images/JCA115_tcm2-21205.pdf
- 116 **Berkshire and Marlborough Downs** www.countryside.gov.uk/Images/JCA116%20-%20Berkshire%20and%20Marlborough%20Downs_tcm2-21206.pdf
- 117 **Avon Vales** www.countryside.gov.uk/Images/JCA117%20-%20Avon%20Vales_tcm2-21207.pdf
- 118 **Bristol, Avon Valleys and Ridges** www.countryside.gov.uk/Images/JCA118%20-%20Bristol,%20Avon%20Valleys%20and%20Ridges_tcm2-21208.pdf
- 119 **North Downs** www.countryside.gov.uk/Images/JCA119_tcm2-21553.pdf
- 120 **Wealden Greensand** www.countryside.gov.uk/Images/JCA120_tcm2-21552.pdf
- 121 **Low Weald** www.countryside.gov.uk/Images/JCA121_tcm2-21571.pdf
- 122 **High Weald** www.countryside.gov.uk/Images/JCA122_tcm2-21572.pdf
- 123 **Romney Marshes** www.countryside.gov.uk/Images/JCA123_tcm2-21573.pdf
- 124 **Pevensey Levels** www.countryside.gov.uk/Images/JCA124_tcm2-21631.pdf
- 125 **South Downs** www.countryside.gov.uk/Images/JCA125_tcm2-21629.pdf
- 126 **South Coast Plain** www.countryside.gov.uk/Images/JCA126_tcm2-21630.pdf
- 127 **Isle of Wight** www.countryside.gov.uk/Images/JCA127_tcm2-21660.pdf
- 128 **South Hampshire Lowlands** www.countryside.gov.uk/Images/JCA128_tcm2-21661.pdf
- 129 **Thames Basin Heaths** www.countryside.gov.uk/Images/JCA129_tcm2-21662.pdf
- 130 **Hampshire Downs** www.countryside.gov.uk/Images/JCA130%20-%20Hampshire%20Downs_tcm2-21209.pdf
- 131 **New Forest** www.countryside.gov.uk/Images/JCA131%20-%20New%20Forest_tcm2-21210.pdf
- 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
- 134 **Dorset Downs and Cranborne Chase** www.countryside.gov.uk/Images/JCA134%20-%20Dorset%20Downs%20and%20Cranborne%20Chase_tcm2-21213.pdf
- 135 **Dorset Heaths** www.countryside.gov.uk/Images/JCA135%20-%20Dorset%20Heaths_tcm2-21214.pdf
- 136 **South Purbeck** www.countryside.gov.uk/Images/JCA136%20-%20South%20Purbeck_tcm2-21215.pdf
- 137 **Isle of Portland** www.countryside.gov.uk/Images/JCA137+138%20-%20Isle%20of%20Portland%20%20+%20Weymouth%20Lowlands_tcm2-21216.pdf

- I38 **Weymouth Lowlands** www.countryside.gov.uk/Images/JCAI37+I38%20-%20Isle%20of%20Portland%20%20+%20Weymouth%20Lowlands_tcm2-21216.pdf
- I39 **Marshwood and Powerstock Vales** www.countryside.gov.uk/Images/JCAI39%20-%20Marshwood%20and%20Powerstock%20Vales_tcm2-21217.pdf
- I40 **Yeovil Scarplands** www.countryside.gov.uk/Images/JCAI40%20-%20Yeovil%20Scarplands_tcm2-21218.pdf
- I41 **Mendip Hills** www.countryside.gov.uk/Images/JCAI41%20-%20Mendip%20Hills_tcm2-21219.pdf
- I42 **Somerset Levels and Moors** www.countryside.gov.uk/Images/JCAI42+I43%20-%20Somerset%20Levels%20and%20Moors%20+%20Mid%20Somerset%20Hills_tcm2-21220.pdf
- I43 **Mid Somerset Hills** www.countryside.gov.uk/Images/JCAI42+I43%20-%20Somerset%20Levels%20and%20Moors%20+%20Mid%20Somerset%20Hills_tcm2-21220.pdf
- I44 **Quantock Hills** www.countryside.gov.uk/Images/JCAI44%20-%20Quantock%20Hills_tcm2-21221.pdf
- I45 **Exmoor** www.countryside.gov.uk/Images/JCAI45%20-%20Exmoor_tcm2-21222.pdf
- I46 **Vale of Taunton and Quantock Fringe** www.countryside.gov.uk/Images/JCAI46%20-%20Vale%20of%20Taunton%20and%20Quantock%20Fringes_tcm2-21223.pdf
- I47 **Blackdowns** www.countryside.gov.uk/Images/JCAI47%20-%20Blackdowns_tcm2-21224.pdf
- I48 **Devon Redlands** www.countryside.gov.uk/Images/JCAI48%20-%20Devon%20Redlands_tcm2-21225.pdf
- I49 **The Culm** www.countryside.gov.uk/Images/JCAI49%20-%20The%20Culm_tcm2-21226.pdf
- I50 **Dartmoor** www.countryside.gov.uk/Images/JCAI50%20-%20Dartmoor_tcm2-21227.pdf
- I51 **South Devon** www.countryside.gov.uk/Images/JCAI51%20-%20South%20Devon_tcm2-21228.pdf
- I52 **Cornish Killas** www.countryside.gov.uk/Images/JCAI52%20-%20Cornish%20Killas_tcm2-21229.pdf
- I53 **Bodmin Moor** www.countryside.gov.uk/Images/JCAI53%20-%20Bodmin%20Moor_tcm2-21230.pdf
- I54 **Hensbarrow** www.countryside.gov.uk/Images/JCAI54%20-%20Hensbarrow_tcm2-21231.pdf
- I55 **Carnmenellis** www.countryside.gov.uk/Images/JCAI55%20-%20Carnmenellis_tcm2-21232.pdf
- I56 **West Penwith** www.countryside.gov.uk/Images/JCAI56%20-%20West%20Penwith_tcm2-21233.pdf
- I57 **The Lizard** www.countryside.gov.uk/Images/JCAI57%20-%20The%20Lizard_tcm2-21234.pdf
- I58 **Scilly Isles** www.countryside.gov.uk/Images/JCAI58%20-%20Isles%20of%20Scilly_tcm2-21235.pdf
- I59 **Lundy** www.countryside.gov.uk/Images/JCAI59%20-%20Lundy_tcm2-21236.pdf