

CHAPTER 2

THE DESIGN CONTEXT

THE GEOLOGY OF SOUTH CAMBRIDGESHIRE

- 2.1 The geological deposits that underlay South Cambridgeshire predominantly date from the Cretaceous Period of geological history (65 to 140 million years ago), which, by geological standards, are therefore relatively young. In the north-west of the district are a series of slightly older clay deposits from the Upper Jurassic Period. The geology is divided into a series of strata that outcrop in bands running roughly north-east to south-west across the district (see map in Figure 2.1). These formations were laid down as successive marine deposits that have since been raised and tilted to slope south-eastwards by earth movements in Tertiary times.
- 2.2 The south-eastern half of the district is underlain by Chalk, a soft white limestone of great purity and composed almost entirely of calcium carbonate derived from the shells of marine animals deposited in a warm, clear sea. Chalk is a relatively soft rock that makes a poor building stone, but in this region a more resistant formation from the Lower Chalk beds was sometimes used in traditional buildings, where it is referred to as clunch. The Lower Chalk beds also include a Chalk Marl that is particularly suitable for the manufacture of cement. In the south-east parishes of the district the chalk is overlain by glacial bolder clay, deposited by the retreating glaciers at the end of the last ice age.
- 2.3 Nodules of flint, a few centimetres or more in diameter, are a feature of Chalk deposits. Flint is very hard and composed of silica, chemically unrelated to chalk, but with its origins also in marine organisms, albeit ones with delicate skeletons of silica. The silica forming these skeletons was not particularly stable and, after the creatures' death, it was dissolved into the chalk where it re-deposited in a more stable form as nodules of flint. The hard nature of the flint nodules makes them difficult to shape for use in walling. Because of this, the traditional form of flint walling was to lay rough nodules of flint in beds with one side crudely faced, or knapped, and to use brickwork to frame rectangular openings for windows and doors, or to turn corners. This careful, selective use of brickwork reflected the relatively high cost of importing bricks from the adjacent clay areas, and has created a distinctive appearance in the region.
- 2.4 North-west of the chalk is a band of dark blue / grey clay, known as the Gault Clay. In the eighteenth century this band of clay began to be worked on a large scale for brick making, producing at first a 'white' brick that weathers grey, then later in the nineteenth century, the characteristic yellow 'Cambridge stock' brick. The same beds were worked for plain clay peg-

tiles for the fifteenth century onwards with clay pan-tiles becoming widespread from the eighteenth century.

- 2.5 Immediately north-west of the Gault Clay is a narrow band of sandstone, referred to as the Lower Greensand. This band is relatively insignificant in the northern parts of the district, but it produces a slightly raised rib of land above the adjacent clay fens that is the site for a number of settlements, most notably Cottenham and Oakington. Further north the city of Ely is sited on an 'island' of Greensand that outcrops within the fenland. To the west of the district the band of Greensand increases in width and around Gamlingay it becomes much more prominent in the landscape.

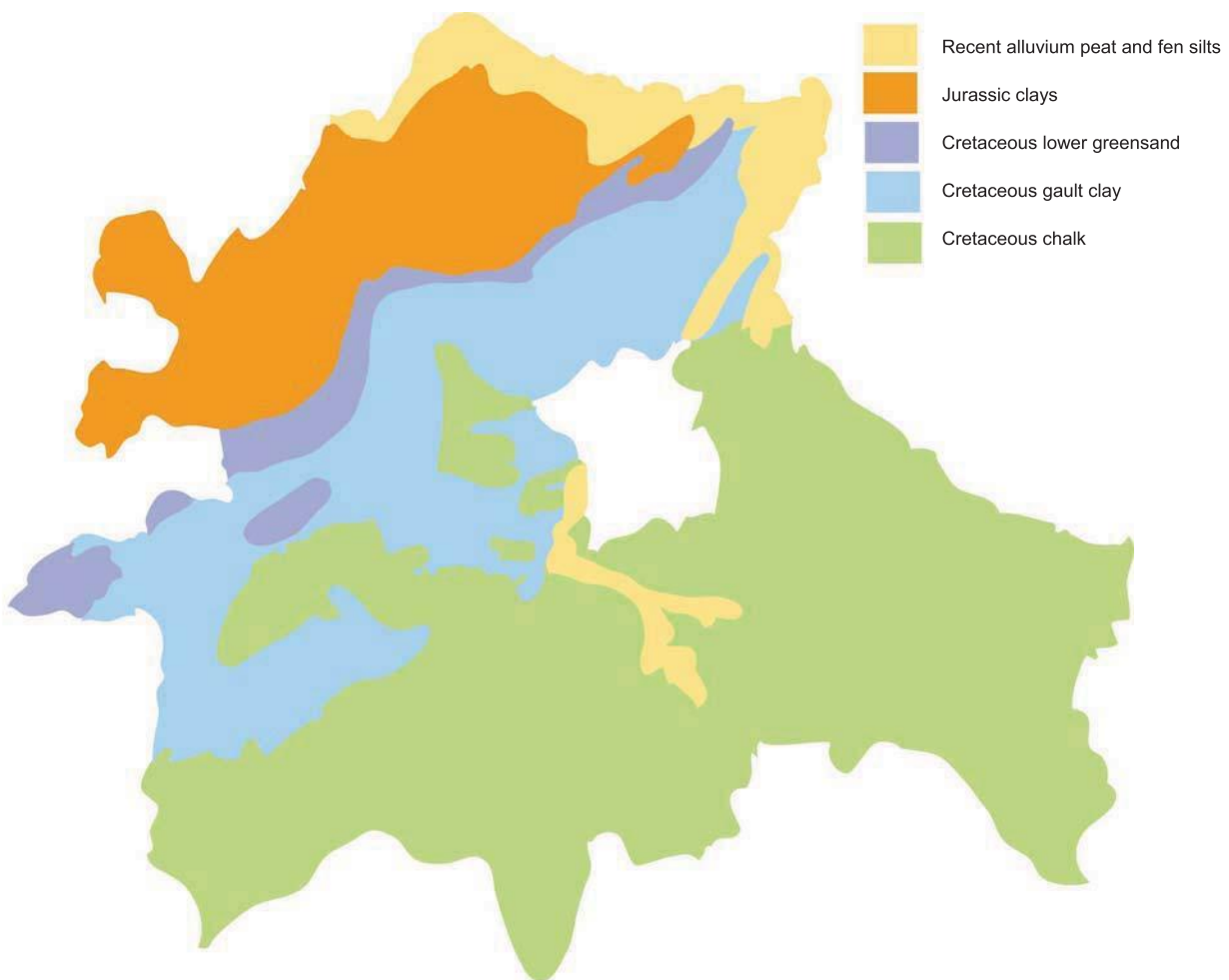


Figure 2.1 Map showing the principal geological deposits of South Cambridgeshire

THE TOPOGRAPHY OF SOUTH CAMBRIDGESHIRE

- 2.6 While much of South Cambridgeshire is low lying, there are some significant variations to the topography across the district, with a strong correlation to the underlying geology outlined in the previous section.
- 2.7 The fenland lies at, or around, sea level with the 10-metre contour defining the fen-edge, and along which line a number of villages are sited. These fens broadly correspond to the clay deposits that lie to the north of Cambridge. As one moves onto the chalklands the land quickly rises into rolling downland that is generally between 20 and 40 metres above sea level, though slightly higher in the east. Further south and east the chalklands continue to rise into a range of low lying hills, which are around 100 metres above sea level. The highest ground in the district is in the south at Great Chishill, where the hills reach a height of just under 150 metres. In the west of the district is a second range of chalk hills, which correlate to a finger of chalk that projects into the Gault Clay, though these hills are not as high and only attain a height of 70 to 80 metres above sea level.
- 2.8 All of the chalklands, along with the eastern fens, drain to the River Cam and its associated tributaries, which in turn feeds into the River Great Ouse. The fens that lie to the north drain direct to the Great Ouse, where it also forms the northern boundary of the district, and eventually reaches the sea at the Wash.

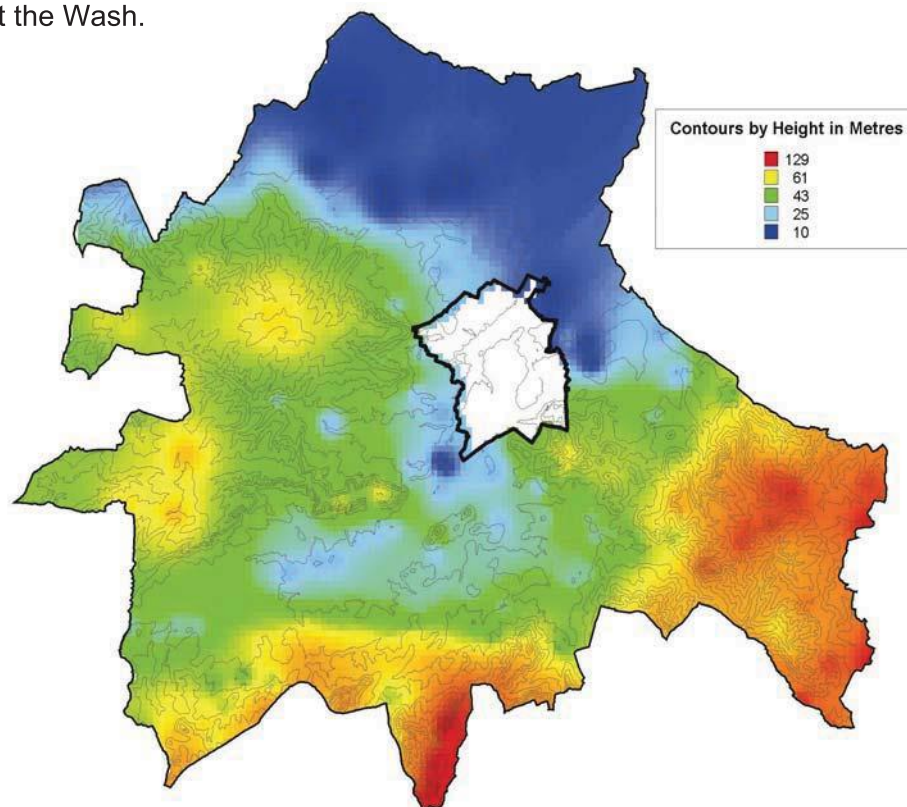


Figure 2.2 Map outlining the basic topography of South Cambridgeshire

THE HISTORICAL DEVELOPMENT OF SOUTH CAMBRIDGESHIRE

- 2.9 The siting and historical development of settlements within South Cambridgeshire is closely associated with the communication network (particularly at river crossings or road junctions), the avoidance of land liable to flooding and developments in agriculture. The spring-lines between the chalk and clay were favoured areas for settlement, and so, to an even greater extent, were the river valleys, with their light gravel and alluvial soils and good communications. The chalk areas to the south could only be settled where water supplies were available, but the open aspect of this countryside made it particularly suitable for trade routes from east to west across the region, using numerous parallel tracks that are collectively known as the Icknield Way.

Prehistoric

- 2.10 In Palaeolithic and Mesolithic times the area was occupied by hunter-gatherers, when much of the area that was later to become fen was then above sea level, so could also support the more transient societies in a heavily wooded landscape. It was the rise in sea level that accompanied the melting ice-cap at the end of the last Ice Age that led to periodic flooding and the development of the fenland areas. In Neolithic times communities became more settled as an agrarian based society started to develop. These early communities especially established themselves on the chalk grasslands around the Icknield Way, along the river valleys and fenland edge, and on the lighter soils associated with the Greensand. The development of these communities continued through the Bronze Age and into the Iron Age, by when farming had become so well developed that huge tracts of land were covered by ditched fields and enclosed homesteads, especially in areas of gravel subsoil, but also in the heavier clay areas where developments in agricultural technology produced ploughs capable of working the heavier soils.

Roman

- 2.11 The Roman towns of this region, Cambridge, Godmanchester, Sandy and Great Chesterford, are all located just outside the district, but their markets brought prosperity to the adjacent rural areas and the network of Roman roads have left a lasting legacy. The best preserved Roman settlement is at Bullock's Haste in Cottenham; a site so large that it appears more like a town than a village, while Romanisation of the countryside was established through a series of villas that were at the centre of agricultural estates. Those excavated at Litlington and Ickleton were particularly large and magnificent examples, while others are known at Babraham, Bartlow, Comberton, Guilden Morden, Horningsea, Horseheath, Linton, Shepreth, Teversham and Great Wilbraham. Another important feature of the Roman occupation were canals. Carr Dyke, visible today at Cottenham, Landbeach

and Waterbeach, was used to transport food-stuffs, leather goods and other products from the agricultural regions of southern Cambridgeshire to the army stationed in Northern Britain. It may also have served to drain neighbouring land.



Carr Dyke, south of Waterbeach

Anglo-Saxon

- 2.12 Occupation of a number of Roman sites is believed to have continued on into Saxon times, along with use of the Roman roads, since many Saxon settlements and burial sites follow these routes. The best-known sites from the early Anglo-Saxon period are a series of cemeteries and defensive Dykes, though more recent excavations have now revealed evidence of huts, halls and other signs of human occupation at Hinxton, Linton, Cottenham, Waterbeach, Pampisford and Great Wilbraham. The four great Anglo-Saxon dykes in South Cambridgeshire (Miles Ditches, Bran Ditch, Brent Ditch and Fleam Dyke), together with the larger Devil's Dyke in East Cambridgeshire, all appear to have had the same function, namely to protect land in the east by preventing easy access along the Icknield Way, and all are built to a similar pattern, with wide, flat bases and straight-sided ditches on the western side.

Middle Ages

- 2.13 By 1086, when the Domesday Book was written, all the current villages of South Cambridgeshire existed, with the exception of the modern communities of Bar Hill and Cambourne, though most have undergone a number of changes since their Saxon foundation. Medieval society reached

its peak in the latter years of the thirteenth century, before economic decline and a series of disastrously wet cold summers in the early years of the fourteenth century led to famines, followed in 1348 by the Black Death. Most villages in the area were not to regain the levels of their thirteenth century populations until the nineteenth century and the resulting labour shortage led to much of the land being converted to sheep pasture.

Post Medieval

- 2.14 In the late seventeenth century work started to drain the fens by cutting a series of canals that would take excess water straight to the sea. The process was to be fraught with problems as the peat shrank, leaving much of the land below sea level and windmills (later replaced by steam, diesel and electric pumps) were then required to lift the water back up to sea level. However, the rich farmland that was created by this process was capable of supporting a large population and the villages along the fen-edge expanded as a result.
- 2.15 Until the middle of the eighteenth century the majority of parishes continued to farm in common, as they had since Saxon times, with the huge medieval open fields worked in narrow strips. Then, over a period of 100 years, these fields were enclosed by successive acts of Parliament as the Enclosure movement brought about major change to the countryside. At the same time many common rights to grazing and gathering fuel were also lost, and most of the countryside became private property. This radical change in land-ownership meant the end of the traditional peasant class in England and much of the population moved to urban areas, or emigrated to America or Australia. Populations fell in all but the commuter settlements immediately adjacent to Cambridge, and this pattern continued through the first half of the twentieth century, exacerbated by the impact of the First World War and the depression of the inter-war period. It was not until after the Second World War that the pattern was to change, and the villages once again started to expand to cope with the housing needs of a growing population.
- 2.16 The result of this continuous occupation of South Cambridgeshire is an extensive legacy of built and natural heritage. Collectively this creates a many layered, historic landscape of great beauty and diversity that helps establish local identity at the parish level. However, the pace of change since 1945 has been intense and is, arguably, accelerating. The resultant pressures on our inherited landscape have profound implications for the social and economic well being of the district, far beyond aesthetic and academic interests.

CHAPTER 3

VILLAGE LANDSCAPE AND SETTLEMENT ANALYSIS

INTRODUCTION

3.1 This section outlines the importance of character and the crucial contribution good design can make to its conservation and enhancement. It aims to ensure that very careful consideration is given to the way new development relates to its surroundings. An overview of the landscape settlement character of South Cambridgeshire is provided. This is followed by the identification of five distinctive landscape character areas:

- A – South East Claylands,
- B – Chalklands,
- C – Western Claylands,
- D – Western Greensand, and
- E – Fen Edge (see Figure 3.1).

3.2 The parishes that occur within each area are listed (note some parishes straddle the boundaries and are therefore listed under both areas). For each defined area, a brief descriptive analysis explains in simple terms the essential design relationship between:

- i. **Landscape Character** - the patterns of the landscape, its geology and overall form, slope and climate, vegetation and the setting of buildings and villages within it.
- ii. **Settlement Character** – the shape of settlements, their built forms and their relationship with the wider countryside.
- iii. **Building Materials** – the nature of the buildings, their massing, materials, scale, colour, texture and characteristic detailing.
- iv. **Trees and Hedgerows** – plant species common to the area.

3.3 Based upon an analysis of the relationship between these elements, the design implications for new buildings are highlighted in the form of a 'bullet point' list of design principles that can be used to guide the form and appearances of new development in the countryside and in the villages.

THE IMPORTANCE OF CHARACTER AND GOOD DESIGN

3.4 Character can be described as a distinct, recognisable and consistent pattern of elements that make each place different and distinctive. It is influenced by visual, ecological, historical, settlement and building elements, together with less intangible aspects such as tranquillity and

sense of place. The distinctive character of our surroundings has a fundamental impact on our quality of life and therefore identifying, protecting and enhancing those elements that contribute to character is a key aspect of our sustainability.

- 3.5 The Council is concerned that poorly designed new development will erode the established character of the landscape and settlements through lack of respect for local diversity and distinctiveness. Common use of standardised building designs and layouts, and the suburbanisation of rural settlements through poorly designed village extensions will have particularly significant effects on character.

LANDSCAPE CHARACTER OVERVIEW

- 3.6 The South Cambridgeshire landscape as a whole has several distinctive and readily identified characters. Medium to large-scale arable farmland landscapes dominate. Woodland and small copses tend to be widely dispersed or absent, and the density of hedgerows is relatively low. As a result it is predominantly open, allowing long views. Contrasting patterns of hedgerowed pastures and parkland create variety, and a greater degree of enclosure in some parts, for instance associated with settlements. Early enclosures of 'ancient countryside' give a distinctive character to some villages which are surrounded by small fields with hedgerows.
- 3.7 The landform reflects the broad variations in the underlying geology and continuity of settlement in the area. The geology ranges from the 'upland' undulating chalklands and clay hills in the south, to the low lying flat Fen Edge with its scattered fen 'islands' north of Cambridge. Rivers and streams cut through the higher land creating gentle shallow valleys, whilst straight dykes and ditches are a feature of the drained fen edge. Both winding and straight narrow roads link the settlements. Surviving features from different eras are part of the rich historic character of the landscape, including visible archaeological features such as the Fleam Dyke and the Bartlow Hills, ancient field boundaries and medieval narrow strip fields, as well as many moated sites, windmills, historic parklands, farmsteads, and groups of cottages.

SETTLEMENT CHARACTER OVERVIEW

- 3.8 Villages are particularly distinctive in the landscape. Small, medium and large villages occupy a variety of positions, hilltops, valley-sides and along spring lines. They often exhibit a complex mix of patterns, including linear, dispersed, nucleated, agglomerated and planned. A surprising number have been formed from amalgamation of initially separate and ancient hamlets. Villages that grow up along important communication links are often linear, with an area of green in front of buildings, as at Comberton, or at each end, as at Harston. While there are no complete planned medieval

villages in South Cambridgeshire, there are planned elements that survive in villages such as Swavesey. Development was also affected by phases in population growth or decline, visible at Bassingbourn where there are whole areas of house plots under grass. Finally, village pattern is often affected by the location and extent of open space, particularly greens and common land with settlements. Typically the villages have developed from historic cores that exhibit a varied mix of vernacular building materials, including brick, rendered plaster, weatherboarding, plain tiles, pantiles, and thatch. Some villages, particularly those closer to Cambridge, have experienced significant growth with modern estates visible at their edges. Nonetheless, most villages make a very positive contribution to local landscape character. Features such as attractive groupings of historic buildings, village greens, common land, mature trees and church towers are all important to this.

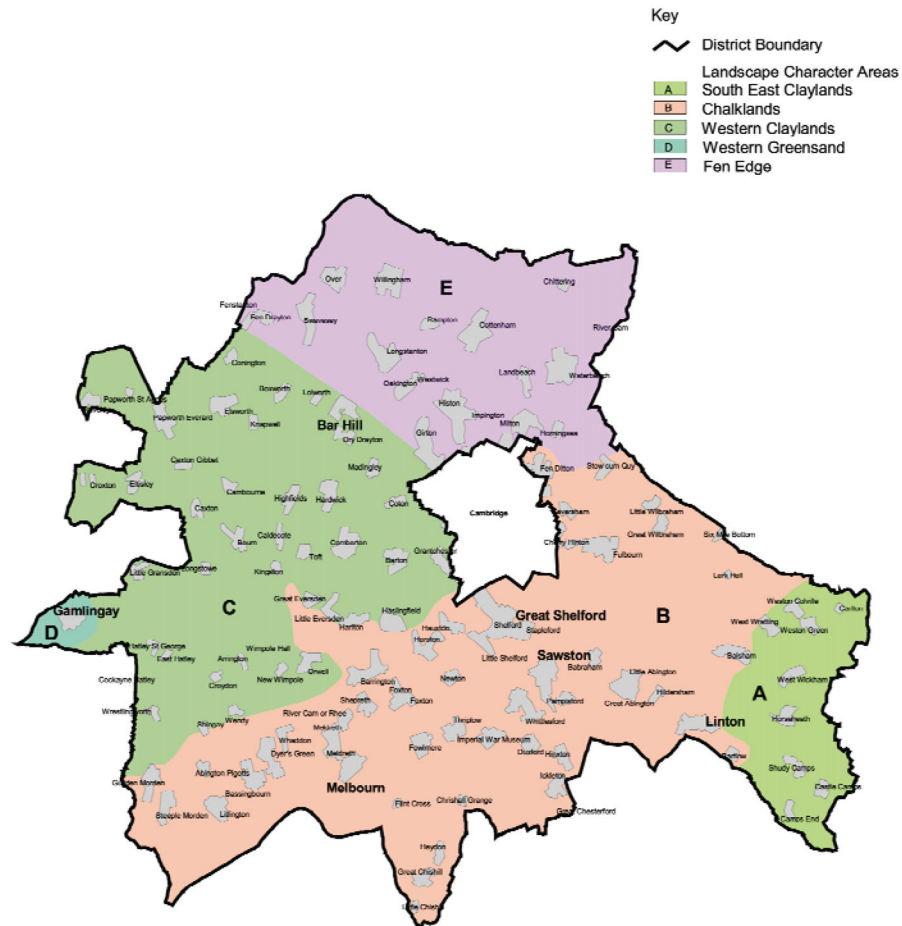


Figure 3.1 Map of South Cambridgeshire indicating broad landscape character assessment as set out in the Countryside Agency's Countryside Character for East of England

Note: the landscape character assessment (Figure 3.1) follows the Countryside Commission's assessment which was used in the 2005 Draft Design Guide. Natural England has subsequently identified new Joint

Character Areas (see the Landscape in New Developments SPD), but the Countryside Commission areas have been retained here as they better reflect settlement character, particularly that of Fen Edge villages.

A. The South-East Claylands

Parishes – Balsham (eastern sector), Carlton (western sector), Castle Camps, Horseheath, Linton (north-east sector), Shudy Camps, West Wickham, West Wratting (eastern sector), Weston Colville (eastern sector).



Landscape Character

- 3.9 This is an undulating area reaching 100 – 120 meters in height on the hilltops. A scattering of farmsteads and small settlements interspersed with farm woodlands, contribute to landscape character. The field sizes are mostly large, but are united by the gently rolling landform and woodland. Smaller fields, landscape and woodlands closer to edges of settlements give a more intimate scale. An historic irregular field pattern remains; Earthbanks are a distinctive feature along with some roadsides, reflecting ancient hedge and bank field boundaries; a few still retain their hedges. Long open views extend to wooded skylines, and sometimes village rooftops and church towers. The area has a surprisingly remote, rural character.

3.10 The key characteristics are:

- An undulating boulder clay landform, dissected by small stream valleys.
- Predominantly arable farmland with a wooded appearance.
- Trees and woodlands appear to join together to create a wooded skyline, with some bare ridgelines.

Settlement Character

3.11 Villages and small hamlets in this area typically have strong linear forms, often with a wooded setting and mature hedgerows and trees that contribute to rural character. Small paddocks and long back gardens also help to soften village edges. Generally they include a mix of more substantial farmhouses arranged in a loose knit pattern, interspersed with open frontages. The slightly larger village of West Wratting includes some continuous frontages that historically provided enclosure to the streets. Any areas of modern infill are generally limited. Small village greens of irregular shape, including narrow 'strip' greens, are a feature in a few villages such as West Wratting and West Wickham.

3.12 The key characteristics are:

- Mostly small villages and hamlets (locally known as 'Ends') are sited on valleysides or on ridgetops, often having a linear form.
- Buildings are arranged in a low density, loose knit pattern along narrow winding or gently curving lanes.
- Mature trees and hedgerow are important features, mainly in private curtilages, giving a strongly rural character to settlements.
- Village edges are often softened by woodlands, copses, small fields, paddocks and long back gardens.
- A few isolated farmsteads are located along lanes or at track ends.

Woodlands and small hedgerowed paddocks contribute to setting



Medium to large arable field

Mature trees are a feature of the main village street

Typical settlement landscape setting

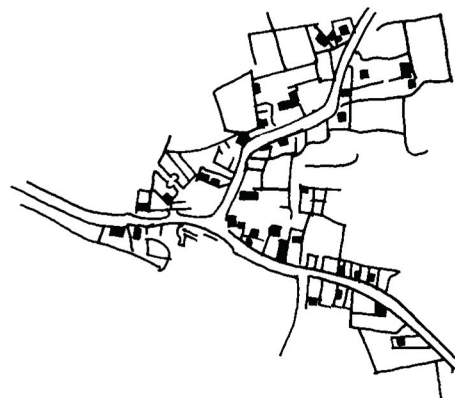
West Wratting

- mostly small cottages and houses with front gardens



Horseheath

*- narrow winding lane
- loose knit settlement pattern*



Street pattern arrangement of buildings

3.13 Building and Materials:

- Buildings are generally one and a half or two storeys, and predominantly detached or semi-detached, with spans of between four and six metres.
- The vernacular detailing of walls is mainly of plastered timber frame construction, often with distinctive decorative pargetting in a variety of

patterns. A few flint and weatherboarded buildings occur. Gault brick occurs in some later buildings.

- Roofs are typically of longstraw thatch and plain clay tiles.
- Details of timber-framed buildings include steep roof pitches, four or five planked doors, casement and sash windows, and chimneys located laterally on the roof ridge, or at gable ends.



*(left) Typical plastered house with clay tile roofing
(right) Typical gault brick and flint cottage*

3.14 Trees and Hedgerows:

- Mixed Woodland
Oak, ash, wild cherry. Glades and near edges: field maple.
- Hedgerows, Woodland Edges and Scrub
Hawthorn, hazel, blackthorn, dog rose, crab apple, field maple and, occasional, dogwood.
- Trees in Hedgerows
Oak, ash, field maple.
- Avenues
Oak, lime, horse chestnut.
- Stream Sides
Alder, white willow, crack willow, goat willow. Occasional: Guelder rose, dogwood. Occasional where not waterlogged: hazel, ash, oak.



Rural street scene

Design Principles

- 3.15 Based on the above analysis of landscape settlement and built character, the following key design principles are set out:
- Maintain the distinctive, dispersed settlement pattern of small villages and hamlets and isolated farmsteads, within the context of their wooded landscape setting.
 - Ensure any small extensions to villages on hilltops are located along ridgelines, and extensions to villages on valley sides are located parallel to the contours of the hillside.
 - Maintain the strong linear form of villages and hamlets by limiting backland and cul-de-sac developments.
 - Ensure density and pattern of new developments reflect that of existing villages and hamlets. Houses should normally be set back from the street with front gardens, except where enclosure of the street frontage is important to the historic character.
 - Use a framework boundary of native woodland, tree and thick hedge planting that reflect the local mixes, to integrate new developments.
 - Ensure new developments reflect the form, scale and proportions of the existing vernacular buildings of the area and pick up on the traditional building styles, materials, colours and textures of the locality.

- Enclose boundaries facing roads by hedgerow or, in appropriate locations, low flint and brick walls.
- Avoid unnecessary widening or straightening of narrow hedge banked lanes.
- Ensure large barns are sited and designed to minimise their bulk and impact on the wider landscape, normally relating them to existing groupings of farm buildings. Prominent ridgeline sites should be avoided.
- Avoid the use of standardised and intrusive urban materials, street furniture, lighting and signage as part of traffic calming measures wherever appropriate.

B. The Chalklands

Parishes – Abington Piggotts, Balsham (western sector), Babraham, Barrington, Bartlow, Bassingbourn cum Kneesworth, Carlton (eastern sector), Duxford, Fen Ditton, Fowlmere, Foxton, Fulbourn, Great Abington, Great and Little Chishill, Great Shelford, Great Wilbraham, Guilden Morden, Harston, Hauxton, Heydon, Hildersham, Hinxton, Ickleton, Linton (west and south-east sectors), Litlington, Little Abington, Little Shelford, Little Wilbraham, Melbourn, Meldreth, Newton, Pampisford, Sawston, Shepreth, Stapleford, Steeple Morden, Stow cum Quy, Teversham, Thriplow, West Wrating (western sector), Weston Colville (western sector), Whaddon, Whittlesford.



Landscape Character

- 3.16 This character area is a broad scale landscape of large fields, low trimmed hedgerows and few trees. Certain high points have small beech copses which form strong focal points, and there are occasional shelterbelts around settlements. By way of contrast, the eastern part of the area is cut through by the valleys of the rivers Granta and Rhee, which have an intimate

character of small grazing meadow and wet woodlands, with lines of willows along the rivers. Some historic parkland within these valleys also adds to their distinctive character.

3.17 The key characteristics are:

- A distinctive landform of smooth rolling chalk hills and gently undulating chalk plateau.
- A mostly large-scale arable landscape of arable fields, low hedges and few trees, giving it an open, spacious quality.
- Remnant of chalk grassland occurs on road verges and along tracks.
- Small beech copses on the brows of hills, and occasional shelterbelts, are important features.
- A wealth of historic and archaeological features, including; ancient trackways, earthworks, small chalk pits and pre-nineteenth century enclosures.
- Shallow valleys of the River Ganta and River Rhee have a rich mosaic of grazing meadows and parkland.
- Lanes are often straight, occasionally 'dog-legging'.
- Mostly strong rural character, though this is disrupted immediately adjacent to major roads such as the A505 and the M11.

Avenue tree approach

Village edge enclosed by mature trees



*Large arable fields with occasional shelterbelts
Typical settlement landscape setting*

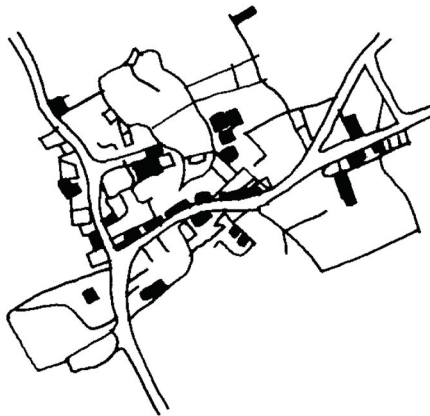
Rough grassland & hedgerow trees provide soft edge

Settlement Character

- 3.18 Both small and large villages generally have a strong historic, linear form, though extensive modern estate developments have occurred in some villages close to Cambridge. Others, such as Bassingbourn, are the result of amalgamation of older hamlets. These linear villages widen out in places to include village greens, such as the large, oval green at Barrington and the smaller, triangular one at Heydon. A few villages, such as Little Shelford, have a rectangular form of looser structure with a number of important open spaces included. The village edges are varied, typically abutted by a mix of open fields, woodland, or smaller fields. Long back gardens also help to form a transition to the surrounding countryside.

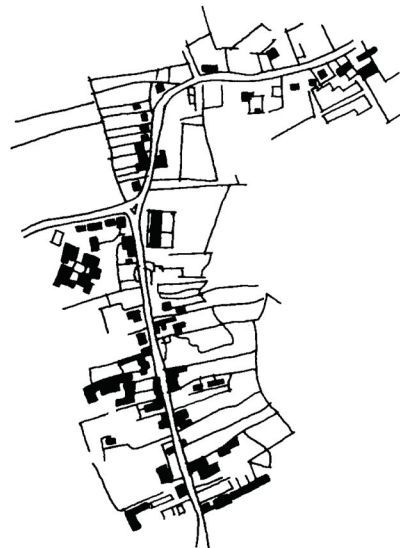
Fowlmere

- Some continuous frontages
- Gently curving lane
- Properties located close to back edge of the street



Meldreth

- Straight lanes
- Deep plots



Street pattern arrangement of buildings

- 3.19 The key characteristics are:
- Small villages, such as Thriplow and Litlington, are located on gentle slopes along spring lines, or on hilltops, such as Great Chishill.
 - Other villages, such as Hildersham and Little Shelford, are located within the river valleys on lower valley-side slopes, sometimes related to crossing points and fords.
 - Mostly a well treed character to villages, which are often not visible in the wider landscape, despite adjoining open arable fields. Avenue

trees on wide road verges are characteristic of some approaches, such as Fowlmere.

- Enclosed meadows and parkland are important features of village setting in the river valleys.
- Village greens are frequent, both small and large.
- Mostly linear form to the settlements.
- Buildings are either arranged as continuous frontages facing streets, or have a much looser pattern with open land interspersed.
- Deep, narrow rear gardens.
- Many mature trees, both in front gardens and on the grass verges, together with streams and ponds, add to the rural character.
- A few isolated farm buildings are sited at track ends, often hidden by groups of mature trees or shelterbelts.



Typical street scene

3.20 Building and Materials:

- Buildings are traditionally two storey, simple and small in scale. A few, large, two and a half, or three storey eighteenth and nineteenth century houses occur in some villages.
- A wide variety of materials are used in walls, including; plastered timber-frame constructions (weatherboarded or rough-cast render on

laths) clunch, clay bat, knapped flint, plain gault brick, red and yellow gault brick. Farm buildings are typically black-tarred weatherboarding. Colours of buildings are generally light and warm, often pale cream, but some are painted pale pink or yellow and, occasionally, earthy red.

- Roofs of vernacular buildings are typically of longstraw, thatch and plain clay tiles and pan-tiles, with some more recent use of Welsh slate and reed thatch.
- Plastered timber-framed building details include; high-pitched roofs, drip-boards set in the gable ends and over windows, four or six panelled or planked doors, and with chimneys set laterally on the ridge to roofs.
- Eighteenth and nineteenth century house details include; low-pitched roofs, vertical sliding sash windows set in deep reveals over shallow stone sills, with gauged or segmental brick arched lintels and chimneystacks incorporated within the building at the gables.



(left) Use of plaster and thatch

(right) Nineteenth century houses with slate, brick and render

- Both low and high flint boundary walls are common, some with red brick detailing. Clipped hedges and simple picket fences also provide boundary features. Occasionally simple iron railings are associated with larger houses.
- Many of the twentieth century estates do not respond to the local vernacular.



Flint and brick walls

3.21 Trees and Hedgerows:

- Beech Hangers
Beech, with occasional additional species from 'Mixed Woodland' below.
- Mixed Woodland
Beech, ash. Less common: small-leaved lime, hornbeam, wild cherry, yew. Glades and near edges: field maple.
- Hedgerows, Woodland Edges and Scrub
Hawthorn, hazel, blackthorn, field maple, dog rose, and, occasional, wild privet and wayfaring tree.
- Trees in Hedgerows
Ash, beech, field maple.
- Avenues
Predominately Beech or ash.

Design Principles

3.22 Based on the above analysis of landscape settlement and built character, the following key design principles are set out:

- Maintain the distinctive, settlement pattern of the area and its local context.
- Ensure any extensions to springline villages are located along the bottom of steeper slopes and along lanes.

- Ensure any extensions to river valley villages are located along the line of the river, or at right angles to it, depending on the direction of the main transport route.
- Maintain the linear, or rectilinear form of the settlements.
- Ensure density and pattern of new developments reflect that of existing villages and hamlets. Avoid backland and cul-de-sac developments where possible.
- Ensure buildings are arranged in continuous frontages within village cores and are arranged in loose knit patterns facing the street on more peripheral sites.
- Ensure new developments are integrated with sufficient space for garden and street tree planting where applicable.
- Enhance village gateways and, where appropriate, consider provision of avenue planting on village approaches.
- Take opportunities to create new village greens and/or wildlife areas within new developments.
- Ensure new developments reflect the form, scale and proportions of the existing vernacular buildings of the area and pick up on the traditional building styles, materials, colours and textures of the locality.
- Enclose boundaries facing the street in village cores by low, or high, flint walls with brick detailing, simple decorative railings, picket fencing or hedging.
- Retain hedges along roads.
- Enclose boundaries facing the street on village peripheries with hedge and tree planting.
- Avoid the use of standardised and intrusive urban materials, street furniture, lighting and signage as part of traffic calming measures wherever appropriate.
- Ensure new agricultural buildings, such as large storage sheds, are sited and designed to reduce their apparent mass, minimising their impact on the wider landscape by the appropriate use of texture, colour and planting.

C. The Western Claylands

Parishes – Arrington, Bar Hill, Barton, Bourn, Boxworth, Caldecote, Caxton, Childerley, Comberton, Conington, Coton, Croxton, Croydon, Dry Drayton, Elsworth, Eltisley, Grantchester, Graveley, Great Eversden, Hardwick, Harlton, Haslingfield, Hatley, Kingston, Knapwell, Little Eversden, Little Gransden, Lolworth, Longstowe, Madingley, Orwell, Papworth Everard, Papworth St Agnes, Shingay cum Wendy, Tadlow, Toft, Wimpole.



Landscape Character

- 3.23 This character area comprises gently undulating arable farmland with, mostly, large fields and low trimmed hedgerows. Occasional medium to large sized ancient woodlands provide a distinctive feature and church towers and spires are key landmarks. Despite the presence of some major roads, much of the area has a relatively tranquil, rural character.
- 3.24 The key characteristics are:
- The gently undulating topography is divided by broad, shallow valleys.
 - It is a predominantly open and intensive arable landscape. Fields are either bounded by open ditches, or closely trimmed hedgerows, both with a variable number of hedgerow trees.
 - Woodlands are scattered. Large, ancient woodlands are particularly concentrated in the north and west of the area.
 - Occasional parklands and orchards add interest and variety in the landscape.

- Small pasture fields with origins in 'ancient countryside' provide a buffer between settlements and medium size fields enclosed in the nineteenth century.
- Many nineteenth century enclosure fields have been amalgamated to produce very large arable fields.
- Each village is identified by a church spire, or tower, which enliven the skyline.

Small hedgerowed pastures and medium to large arable fields

Soft village edge with many mature trees



Thick hedgerows on road approaches

Streamside vegetation

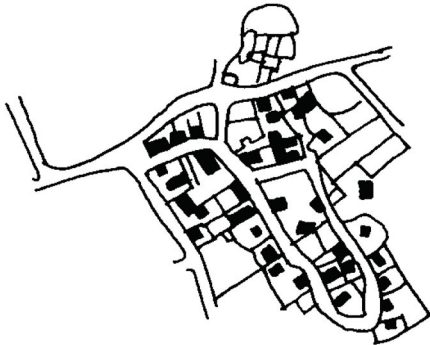
Typical settlement landscape setting

Settlement Character

- 3.25 The mostly small, scattered villages of this area often have well defined edges provided by mature trees, thick hedgerows, copses or parkland. Small fields and paddocks also contribute to their landscape setting, providing a transition to the surrounding countryside. Many of the villages have a strong, linear form with rows of cottages and a few, larger farmsteads facing roads and paths. Highfields Caldecote (which has a planned rectilinear street pattern) and Bar Hill (which is a C20th new community) are not typical of the area.

Elsworth

- Winding lane
- Houses at back edge or close to lanes



Haslingfield

- Fields in the heart of the village
- Loose-knit arrangement of buildings



3.26 The key characteristics are:

- Villages are either located on the sides of small valleys (such as Bourn and Little Gransden), along spring lines (such as Haslingfield) or on slightly elevated ground within broad valleys (such as Comberton and Grantchester).
- Woodlands, copses, paddocks and, occasionally, parklands contribute to the distinctive landscape setting of villages, creating a wooded character and providing a link to the surrounding countryside.
- The historic villages are mostly linear in form, despite modern infilling in some villages.
- Buildings are typically arranged in loose knit patterns, sited close to roads or paths. Frontages include open spaces which allow visual unity with surrounding fields and woodlands.
- Mature trees, hedges, picket fences and walls contribute to the informal rural character.
- Small irregularly shaped village greens are sometimes a feature, such as at Madingley.
- Outside the village core areas there are often scattered isolated farms, with some intrusive modern farm buildings.



*(left) View to church tower on skyline
(right) Irregular shaped village green*

3.27 Building and Materials:

- Buildings are generally one and a half or two storeys in height and domestic in scale.
- A variety of wall materials are used, including; plastered timber-frame construction (mostly cream in colour), warm red brickwork and occasional yellow brick. Farm buildings are typically of brick, weatherboarding and flint.
- Roof materials include plain clay tiles, pantiles longstraw thatch and Welsh slate.
- Details which characterise timber-frame buildings include; high pitched roofs, casement windows or horizontal sliding sashes (Yorkshire sashes) set flush with the outside face of the wall, drip boards set in the gable ends and over windows, four or six panelled or planked doors and chimneys set laterally on the roof ridge.
- Eighteenth century houses, which occur in a few villages such as Grantchester, have details that include four and six panelled front doors, gauged brick arches over windows and distinctive cornices.
- Nineteenth century houses, which occur in a few villages such as Grantchester and Comberton, have details which may include; sawtooth dentil courses under the eaves, four or twelve pane vertical sliding sash windows, four panelled doors, contrasting brick dressing or decorative polychromatic brick banding and chimneys sited at the gables flush with the gable walls.
- Many modern estates in the larger villages, such as Comberton, do not respond to the local vernacular.



*(left) Typical street scene with thatch, brick and plaster
(right) Use of warm red bricks with plain clay tiles*



*(left) Farm building with brick banding
(right) Hitch brick boundary wall*

3.28 Trees and Hedgerows:

- Ancient woodlands and later mixed Woodland
Oak, ash. Less common: wild cherry. Glades and near edges: field maple.
- Hedgerows, Woodland Edges and Scrub
Hawthorn, hazel, blackthorn, dog rose, crab apple, field maple and, occasional, dogwood.
- Trees in Hedgerows
Oak, ash, field maple.
- Avenues (all one species, not mixed)
Oak, lime, horse chestnut.
- Stream Sides
Alder, white willow, crack willow, goat willow. Occasional: Guelder rose, dogwood. Occasional where not waterlogged: hazel, ash, oak.



Village character enriched by mature trees

Design Principles

3.29 Based on the above analysis of landscape settlement and built character, the following key design principles are set out:

- Maintain the distinctive settlement pattern of mostly small, scattered villages and isolated farmsteads.
- Ensure any extensions to valleyside villages are located parallel to contours or at right angles to them along lanes reflecting the historic settlement form.
- Ensure the linear or rectilinear form of settlements is maintained, avoiding backland and cul-de-sac development where possible.
- Ensure buildings are arranged in a loose knit form, generally facing and close to, or set a little back from, the streets.
- Ensure developments are well integrated with the local patterns of tree planting and hedgerows.
- Ensure new developments respond to the form, scale and proportions of the existing vernacular buildings in the area, for example, reflecting the traditional building styles, materials, colours and textures of the locality.

- Mark street boundaries by the use of simple picket or trellis fencing, hedges, or low brick walls as appropriate.
- Retain hedges and introduce them as boundaries alongside roads outside village cores.
- Avoid unnecessary straightening and widening of narrow country lanes and the use of standardised and intrusive urban materials, street furniture, lighting and signage as part of traffic calming measures wherever appropriate.
- Ensure new, large agricultural buildings, such as barns, are sited and designed to reduce their apparent mass, and minimise their impact on the wider landscape by the appropriate use of texture, colour and planting.
- Conserve small pre-nineteenth century paddocks.

D. The Western Greensand

Parishes – Gamlingay



Landscape Character

- 3.30 This is a very small character area associated with the undulating dip slope of the Lower Greensand ridge. It is drained by small streams and there are some locally steep slopes. The fairly wooded landscape is interspersed with medium sized arable fields, small areas of pasture and market gardening. There are also small areas or remnant parkland and heath. Despite the presence of some worked out gravel pits, the area retains a predominantly rural character.

3.31 The key characteristics are:

- Undulating dip slope of the Lower Greensand ridge, drained by small streams creating a relatively small scale, varied landform.
- The area has a mixed land use pattern of arable farmland, pasture and market gardening, and deciduous and coniferous woodland.
- Remnant patches of heathland and parkland tree belts add interest and variety.

Settlement Character

3.32 Within the area there is a dispersed pattern of farmsteads and cottages along lanes and one large village of Gamlingay. This has radiated out from a crossroads along five routes. The eastern half of the village is dominated by the historic core, which is of a linear development along Church Street, and the openness created by the village college playing fields. In the western half modern residential and industrial infill has occurred. The historic core comprises a wide range of buildings, many fronting directly onto the street, creating a sense of narrowness and enclosure.

Gamlingay

- *Crossroads location*

- *Continuous building frontages mostly on back edge of pavement – found especially on Church Street and parts of Mill Street*



Street pattern



3.33 The key characteristics are:

- Farmsteads, cottages and small, detached houses associated with smallholdings are dispersed along lanes.
- Historic core of Gamlingay retains a strong linear form with mostly continuous frontages radiating out along roads.
- Narrow, gently curving streets, with houses generally sited on the back edge of the pavement.
- Open fields, hedgerowed paddocks, woodland and stream valleys contribute to the distinctive landscape setting, despite a harsh urban edge in parts.

3.34 Building and Materials:

- Buildings are generally one and a half or two storeys, with spans of between four and six metres.
- The range of building styles within the village includes small vernacular cottages, medieval farmhouses and buildings, eighteenth, nineteenth and early twentieth century villas together with many nineteenth century terraces.
- Walls are constructed of timber-frame with plastered finish (coloured cream, yellow and pale pink) carstone (sandstone) and red and yellow brick. Farm buildings are of weatherboarding and brick.
- Vernacular roofs are of plain clay tiles, pantiles, longstraw thatch and Welsh slate.
- Timber-framed building details include; high pitched roofs, casement or sash windows set flush with the outside face of the walls, drip boards set in the gable ends and over windows and chimneys sited laterally on the roof ridges.



(left) Brick with plain tile roof

(right) Nineteenth century gault brick with render mouldings

3.35 Trees and Hedgerows:

- Mixed Woodland
Oak, ash. Less common: wild cherry. Glades and near edges: field maple.
- Hedgerows, Woodland Edges and Scrub
Hawthorn, hazel, blackthorn, dog rose, crab apple, field maple and, occasional, dogwood.
- Trees in Hedgerows
Oak, ash, field maple.
- Avenues
Oak, lime, horse chestnut.
- Stream Sides
Alder, white willow, crack willow, goat willow. Occasional: Guelder rose, dogwood. Occasional where not waterlogged: hazel, ash, oak.

Design Principles

3.36 Based on the above analysis of landscape settlement and built character, the following key design principles are set out:

- Maintain the distinctive, dispersed settlement pattern of farmsteads, cottages and small, detached houses along lanes, seeking to avoid infill.
- Maintain the distinctive settlement setting of Gamlingay, including; small stream valleys, woodlands, mature hedgerows and trees. Ensure new developments improve any existing harsh edges with a

framework of new hedges, trees and woodland planting relating to local mixes.

- Maintain the traditional linear form of Gamlingay by limiting backland and cul-de-sac developments.
- Ensure buildings are positioned to reflect local patterns such as mostly continuous frontages running along the back edge of pavements, with only occasional gaps, giving glimpses of countryside beyond.
- Ensure new developments reflect the form, scale and proportions of the existing vernacular buildings of the area and pick up on the traditional building styles, materials, colours and textures of the locality.
- Enclose boundaries facing onto roads by brick walls in the village core.
- Retain hedges and introduce them as boundaries alongside roads outside village cores.
- Avoid the use of standardised and intrusive urban materials, street furniture, lighting and signage as part of traffic calming measures wherever appropriate.
- Ensure large barns are sited and designed to minimise their bulk and impact on the wider landscape, normally relating them to existing groupings of farm buildings.

E. The Fen Edge

Parishes – Cottenham, Fen Drayton, Girton, Histon, Horningsea, Impington, Landbeach, Longstanton, Milton, Oakington, Over, Willingham, Rampton, Swavesey, Waterbeach, Westwick.



Landscape Character

- 3.37 This character area has a mostly flat, low-lying landscape with open views. However, scatterings of clumps of trees, poplar shelterbelts and occasional hedgerows sometimes merge together to give the sense of a more densely treed horizon. Straight running 'lodes', drains and north-south droves are distinctive features. The Great Ouse river and the 'lodes' are enclosed by raised banks, which sometimes provide valuable grassland habitats, or are marked by lines of willows. Low sand and gravel fen 'islands' rise above the flat landscape and have provided an historic focus for settlements. Smallholdings for market gardens, flower growing nurseries and orchards introduce additional local variety and interest in the landscape.

Open fen landscape

Evidence of medieval long fields

*Enclosed farmland and long gardens
provide soft edge*



*Mature trees and hedgerows contribute
to landscape setting*

Village green

Typical settlement landscape setting

- 3.38 The key characteristics are:
- A low-lying, flat open landscape with extensive vistas.
 - Large skies create drama.
 - A hierarchy of streams, 'lodes', drains and ditches dissect the landscape.
 - The rich and varied intensive agricultural land use includes a wide range of arable and horticultural crops and livestock.
 - Orchards are a distinctive feature.

- Slightly elevated fen 'islands' have a higher proportion of grassland cover, trees and hedgerows.
- Small scale, irregular medieval field patterns are still visible around the edge of settlements.
- Church towers and spires create landmarks.

Settlement Character

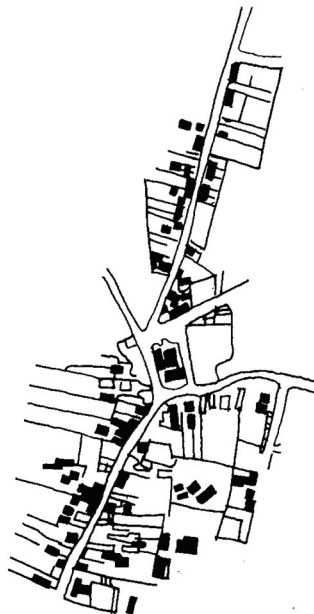
3.39 The villages on the low fen islands are characterised by their strong linear form, often having developed outwards from crossroads along approach roads. The historic linear form is retained despite the modern estate developments that have occurred in many of the villages. Some village edges, such as at Cottenham, have a well wooded character, with hedgerows and mature trees concealing buildings, while others, such as Fen Drayton, have more open edges. Within the historic cores narrow lanes with continuous street frontages are typical, but on village edges buildings are more often setback with low walls and hedges fronting the streets. Long back gardens are also a common feature.

Willingham

- Groups of buildings on or close to the back of the pavement in the village core
- Discontinuous frontages on edge of settlement

Fen Drayton

- Narrow lanes
- Intimate character



3.40 The key characteristics are:

- Historic cores of villages are located on the fen islands, although some modern development has spread onto low-lying land.

- Settlements sit low in the landscape, often screened by thick hedgerows to paddocks, copses, groups of mature trees and orchards.
- Strong linear form and street pattern.
- Narrow lanes with continuous street frontages create an intimate character.
- More loose knit arrangement of buildings facing the roads on some village approaches, with open areas and mature hedges interspersed.
- Occasional central medieval village greens formed from infilled historic docks and wharves.
- Clusters of glasshouses, farms, cottages and some modern detached houses are located along lanes.



(left) Typical street scene



(right) Central village green

3.41 Building and Materials:

- Vernacular buildings are typically small scale, one and a half or two storeys in height. A few larger villas occur in some village core areas.
- Wall materials vary; yellow Gault clay brickwork predominates, but plastered timber-frame, dark stained weatherboarding and red brick are also present.
- Roofs are historically of thatch and plain clay tiles, with pantiles and Welsh slate being later introductions.
- Timber-frame building details include; steeply pitched roofs, side hung timber casements set flush to the outside face of the wall, drip boards

set on gable ends and over the windows, with four or six panelled or planked doors.

- Eighteenth and nineteenth century house details include; vertically sliding sash windows set in reveals over shallow stone cills and with gauged or segmental arched brick lintels over, four or six panelled doors in simple classical door cases incorporating fan lights and chimneys incorporated within the buildings or at gable ends.
- Some brick buildings in the village cores have Dutch gables, reflecting the eighteenth and nineteenth century's links with the Low Countries.



(left) Typical eighteenth century house details

(right) Typical nineteenth century house details



(left) Dutch gable

(right) Brick and clay pantile

3.42 Trees and Hedgerows:

- Peat and Silt Fenland
Ash, white willow, oak, field maple, birch, white poplar, hybrid black poplar, goat willow, grey willow, hawthorn, guelder rose, dogwood, horse chestnut, sycamore.
- Fen Islands
Ash, oak, field maple, crab apple, wild cherry, white willow, goat willow, hawthorn, hazel, dogwood, blackthorn, wild privet.



(left) Simple brick bridge

(right) Orchards on settlement edges

Design Principles

3.43 Based on the above analysis of landscape settlement and built character, the following key design principles are set out:

- Ensure any village extensions are located on the high ground of the Fen Islands, avoiding incremental development on the flat, low-lying fen.
- Ensure new developments on the edges of villages are integrated by thick hedgerows, copses and shelterbelt planting reflecting the local mixes. Ensure a transition between Fen and Fen Island by retention and creation of small hedgerowed paddocks.
- Conserve and enhance existing orchard and hedgerowed paddocks.
- Maintain linear or rectilinear form of the settlements and avoid closes and cul-de-sacs where possible.
- Ensure buildings are mostly set on the back edge of pavements, or face the street with small front gardens in the village cores.

- Ensure new developments reflect the form, scale and proportions of the existing vernacular buildings of the area and pick up on the traditional building styles, materials, colours and textures of the locality.
- Enclose boundaries facing onto roads by low brick walls and/or simple iron railings, timber picket fences and hedges as appropriate in the village cores.
- Retain hedges and introduce them as boundaries alongside roads outside village cores.
- Integrate water features, such as ditches dykes and ponds, into new developments as part of open spaces.
- Avoid the use of standardised and intrusive urban materials, street furniture, lighting and signage as part of traffic calming measures wherever appropriate.

OUTLINE OF TRADITIONAL BUILDING FORMS AND ELEMENTS OF THE AREA

- 3.44 The vernacular architecture of a region is heavily influenced by the building materials available in that area, which in turn are related to the geology. The geology of South Cambridgeshire is outlined in Chapter 2, and basically comprises chalk in the southern parts of the district with clay further north.
- 3.45 This limited palette of materials gives traditional buildings a consistency of appearance despite their many periods and designs. This helps to identify and characterise the locality and our towns and villages.

Walling materials

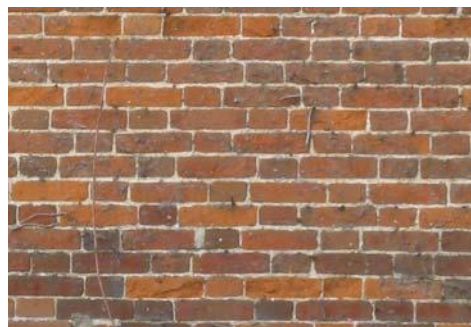
Timber Frame



*Close studded
timber frame*

- 3.46 In South Cambridgeshire there is a distinct lack of good building stone and, therefore, the majority of early traditional buildings were constructed of timber-frame; the area once boasted a plentiful supply of good timber. The timber-frame construction in Eastern England was generally box framed in oak, with the timber studs set at close centres to produce vertical panels, as opposed to the square panels found in the Midlands. There is no tradition of cruck frames within this area.
- 3.47 Where the oak frame was of sufficient quality to be exposed externally, the intervening panels were infilled using wattle and daub. In South Cambridgeshire, this involved wattles of hazel being woven, basket fashion, around light oak staves fitted between the frames. The whole was then daubed on both sides with a mixture of clay, dung and chopped straw, and protected from the weather by a coat of limewash.
- 3.48 An unbroken weather protective cladding had several potential advantages over wattle and daub infill, and this led to the widespread use of lime plaster on riven wooden laths nailed to the outside face of the studs. The render finish could be plain, decorated with a white or colour wash, or moulded into one of a number of patterns, known as pargetting. Decorative pargetting first appeared at the end of the sixteenth century, though the technique reached its height of popularity in the latter half of the seventeenth century and eventually fell out of favour in by the middle of the eighteenth century. The patterns are often distinct from modern pargetting patterns. Historically pargetting was confined to the east of Cambridgeshire, along the Suffolk/Essex borders. Colours on rendered buildings are generally light and warm, often pale cream, but some buildings are painted pale pink or yellow and, occasionally, earthy red.
- 3.49 Weatherboard is typical of outbuildings and minor domestic buildings and extensions. Historically it was limewashed on houses and black tarred or left as natural oak or elm on outbuildings. The hierarchy of use on new buildings would be in accordance with this local tradition.
- 3.50 On lesser structures, such as cottages and agricultural buildings, timber weatherboarding provided an alternative cladding material to lime plaster. Weatherboarding is known to have been in use from around 1600, when oak or elm boards were pegged to the timber-frame. The use of deal (softwood) boards nailed to the studs dates from the latter part of the eighteenth century. Deal needed protection from the elements unlike oak and elm, which could be left un-painted. More recently, imported cedar has been used and weathers to a darker colour than the silver-grey characteristic of oak or elm.

Brickwork



*(left) Early gault brick in garden wall bond
(right) Red brick in Flemish bond*

- 3.51 The Romans first introduced the art of brick making into Britain, but this knowledge was lost in the Dark Ages. Following the introduction of brick making from the continent, bricks began to be used again in Britain during the seventeenth century. Initially there were isolated examples of narrow red bricks imported to Cambridgeshire to be used on high status buildings. This was followed by the use of local Gault clay for the manufacture of bricks, originally using narrow dimensions similar to the imported bricks. From the eighteenth century onwards there is an increasing use of brickwork in the region.
- 3.52 The early local bricks were generally red or a 'white' brick that weathered grey. In the nineteenth century, manufacture of the characteristic yellow 'Cambridge stock' brick commenced.
- 3.53 Traditional brick walls were constructed using Flemish bond, English bond or, sometimes, English Garden Wall bond (all of which incorporate headers into the visible pattern). The use of stretcher bond only developed in the twentieth century, in parallel with the development of the cavity wall. Other traditional details include the use of cut arches or oak lintels over openings and a traditional flexible lime mortar avoiding the need for movement joints.

Unfired Brickwork



- 3.54 The glacial boulder clay that overlies the chalk in the south-east area of the district was used predominately during the eighteenth and early nineteenth centuries to produce a form of unfired brickwork used in walling, known as clay-bat or clay lump. The process involved digging out the clay, removing the flints and other large stones, mixing it with chopped straw, then compressing the mixture into wooden moulds before leaving it for several weeks to dry out. Clay bats were time-consuming but cheap to produce, and a good insulant. The 'bricks' were much larger than a fired brick, at around 450mm long, by between 125 and 225mm high and 150mm thick. The external face of a clay-bat wall needed protection from the elements; on agricultural buildings this was often by a coat of tar. Tar could also be used on cottages, in which case it was generally sanded and colour-washed, but it was equally as common for cottages to be rendered in a lime plaster.

Stone



(left) Clunch wall



(right) flint wall

- 3.55 The chalk that underlies much of the district does not make a particularly good, or durable walling material. Chalk is a form of particularly pure limestone, it is very soft, which means it is easy to work, but is vulnerable to rapid weathering, especially in a polluted atmosphere. Within the lower chalk beds of Cambridgeshire the chalk is more compacted than that found elsewhere in south-east England and this has enabled it to be used as a building stone, known as clunch. The qualities of the stone made it possible for the chalk to be cut into squared, ashlar blocks, and it was widely used for internal walls, arcades and capitals in churches, but equally, if carefully detailed and protected by render or limewash, or under good roof overhangs, it could be used externally.
- 3.56 The flints which occur naturally within the local chalk are much more durable than clunch, but are extremely difficult to work. The rounded nodules of flint are also difficult to bond and to terminate at window and

door openings. Therefore, when flint is used for walling, the nodules of flint are often set in relatively thick mortar beds and combined with brickwork or ashlar stonework to frame rectangular openings for windows and doorways, and to turn corners. Where a truer face is required to the wall, one side of the flint nodule may be crudely faced or knapped. Flint is usually laid in courses, sometimes only noticeable when viewed close to along the wall. In South Cambridgeshire flint is frequently used in the construction of churches, but is not so widely used for secular buildings as in other chalk areas. It is more generally confined to boundary walls and the occasional cottage, and then often dates from the nineteenth century.

- 3.57 The outcrop of Greensand hardly makes an impression on South Cambridgeshire and it is only significant in the west of the district around the village of Gamlingay. Here the parish church is built of Greensand, but otherwise it is not used as a building stone.
- 3.58 Stones such as Bath and Ketton stone were imported to the area primarily during the eighteenth and nineteenth centuries for weathering and architectural detailing on brick-built higher status buildings, such as schools, chapels and larger houses. Combinations of stone detailing and render walls are not traditional as the render generally signifies a timber frame.

Roofing materials

Thatch

- 3.59 Thatch has been widely used throughout South Cambridgeshire. Long straw is the traditional material used throughout most of the district, although some water reed has always been used on the fen-edge. In more recent times there has been an increase in the use of reed over long straw, due to the greater longevity and availability of imported reed. It is important that the long straw tradition is maintained within the district since it has a distinctive character and produces a roof that is visually different to one covered in reed. One very obvious difference between the two materials is in the detailing of the ridge. Reed is stiff and brittle, and cannot be bent over a ridge. Therefore, on a reed thatch roof the ridge is formed with an additional layer of thatch, using sedge, tough grass or straw (that may incorporate decorative embellishments to its lower edge). A true long straw thatch roof on the other hand has a simple, unadorned ridge. All thatch roofs in South Cambridgeshire are steeply pitched, at 50 degrees and over.

Tile

- 3.60 Roofing tiles used within the region are produced in two forms; plain tile (peg tile), which are relatively small and are laid with double lap on moderately steep pitches (40 to 50 degrees), and pan-tiles, which are larger and are laid with a single lap at shallower pitches (35 to 45 degrees).

Production of roofing tiles from the Gault Clay of the district dates back to the fifteenth century for peg-tiles, with clay pan-tiles becoming widespread from the eighteenth century. Plain tile was the most expensive local roofing material and therefore used for higher status buildings. Pantile was used traditionally for outbuildings and smaller houses. Machine-made plain tiles were introduced during the mid nineteenth century and have a flatter appearance and noticeably more mechanical character than hand made tiles.



Local plain tile and pantile

Slate

- 3.61 The continued use of thatch perpetuated the risk from fire, especially within the densely built up village centres, and there remained a need for a readily available source of cheap, durable and non-flammable roofing material, as well as a desire to roof over shallow pitches. After the introduction of the railways in the middle of the nineteenth century, Welsh slate was able to fulfil this need and became widely used throughout the district (where it is laid at pitches as low as 25 degrees). The resulting low-pitched roofs are characteristic of Georgian and Victorian buildings. Slate used in South Cambridgeshire is therefore a distinctive Welsh mid grey or grey-pink colour rather than the dark grey and black seen on foreign imported slates.



Mid blue-grey Welsh slate

Timber

- 3.62 Timber shingles are used for outbuildings and garden buildings and can be used at very low pitches. Imported materials like cedar weather differently to traditional local materials such as oak and can be more vulnerable to attack by woodpeckers. Hand-cut shingles have more texture and stability and can be used at lower pitches than machine-cut.

Metal

- 3.63 Corrugated iron is often found as a temporary material on roofs that have failed. It is characteristically cheap but sometimes appropriate at very shallow pitches or to provide an industrial or agricultural character.
- 3.64 Lead was rarely used prior to the eighteenth century other than on churches. It is characteristic of high status buildings, usually laid to an almost-flat slope. Early lead was cast, but during the nineteenth century milled lead was developed which was thinner and cheaper. Terne-coated stainless steel has a similar colour, and is sometimes a modern alternative where there is a problem with theft of lead, although it is thinner and therefore care is needed to match lead details convincingly.
- 3.65 Copper was rarely used prior to the nineteenth century and is not characteristic of traditional buildings of the area. It was popular during the Arts and Crafts period and weathers to a distinctive bright green.

Felt and asphalt

- 3.66 Typical of lower status twentieth and twenty-first century flat roofs, they require much higher maintenance than traditional materials.

Glass

- 3.67 Glass roofs are typical of greenhouses of the late nineteenth century and later, when glass could be manufactured more reliably and in larger sizes. Less traditional glass roofs are characteristic of the late twentieth century onwards. Glass pantiles were used in the late nineteenth and early twentieth century to light outbuildings and agricultural buildings.

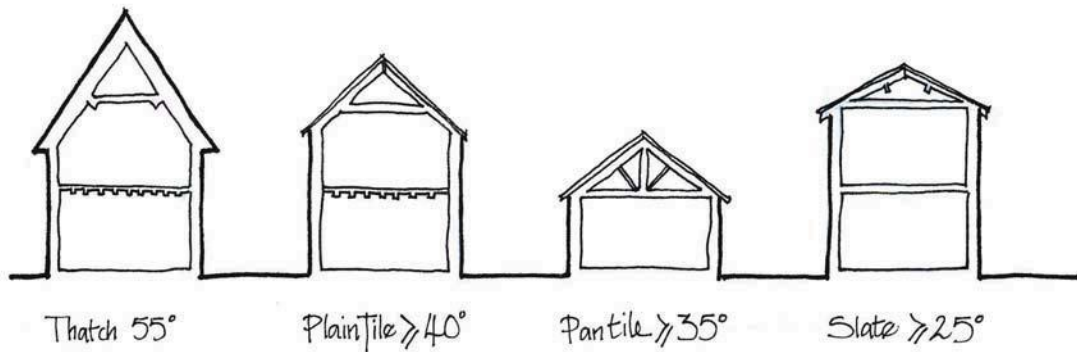


Diagram illustrating different roof pitches for different materials

Details

Windows



(left) Horizontal sliding (Yorkshire) sash window
(middle) Side opening casement window
(right) Vertical sliding sash window (with circa 1800 marginal light design)

- 3.68 Windows were generally of timber and their design was closely associated with developments in the techniques of glass making. Up until the end of sixteenth century glass was too expensive for use in all but the grandest of houses, so windows in smaller houses were frequently left un-glazed, with wooden shutters introduced during the latter half of the seventeenth century. Early glass could only be produced in very small panes and early windows comprised pieces of glass in lead comes set in wrought iron frames and fitted into an outer timber frame. This timber frame was in oak, elm or chestnut and was often left untreated. As the use of glass became more common, leaded lights were frequently retrofitted into older buildings.
- 3.69 From the mid seventeenth and early eighteenth centuries onwards, the design of windows began to reflect classical styles. Good quality softwood became the predominant material, decorated with paint or (occasionally) graining.

- 3.70 Square openings in vernacular buildings were generally fitted with side-hung or horizontal sliding ('Yorkshire') timber casements which had wooden glazing bars used to subdivide each casement. The casements were set level with or behind their frame, unlike the modern 'storm casement'.
- 3.71 Vertical sliding sash windows were first introduced at the end of the seventeenth century. The earliest sash windows were in painted oak rather than softwood with wide ovolo glazing bars and generally had their top casement fixed shut. The section of the glazing bars became more refined over time and varieties such as lamb tongue mouldings were introduced.
- 3.72 Throughout the eighteenth century the pattern of sash windows generally remained that of 6 panes to each sash (6 over 6). Around the middle of the nineteenth century advances in glass production enabled the pane size to be increased and the subdivision of sash windows simplified; initially to 3 over 3, then later to 2 over 2 and, finally, to a single, large pane in each sash. These larger panes were of thicker glass, and therefore heavier. In order to carry this additional weight the frames needed to be strengthened, and this led to the use of horns on the sashes from the middle of the nineteenth century onwards.
- 3.73 Often a mix of window types is found. This often shows the hierarchy of the building; with newer styles of windows in the main reception and higher status rooms and earlier styles of windows in ancillary and subservient lower status spaces.
- 3.74 During the Tudor Revival of the late nineteenth and early twentieth centuries, there was a short-lived re-introduction of iron frames in untreated oak frames, to reflect the period style of the building.
- 3.75 Cast iron windows in distinctive decorative patterns were also introduced in the late nineteenth century. Where found, it is important they are retained, but they are difficult to reproduce.
- 3.76 Steel windows and doors date from the early twentieth century onwards and are characteristic of modernist and minimalist designs.
- 3.77 Early glass has distinctive manufacturing marks and reflective patterns giving interest and liveliness to a façade and should be retained where found.

Doors

- 3.78 The entrance door evolved with two functions in mind; defence - whether it be against human invaders or the wind and rain, and display - emphasising the house owner's position in the world. Because doors have been, to

some extent, a symbol of prestige, they have also been influenced by the prevailing fashion of the time.



*(left) An internal boarded (planked) door
(middle) Late eighteenth century door
(right) Nineteenth century door*

- 3.79 Early doors were often defensive in character, constructed of heavy oak planks, smoothed with an adze, and fastened onto horizontal boards. The two faces were secured with wooden pegs or iron studs and the doors were hung on strap hinges, with iron pins seated directly in the timber surround to the door and no intervening doorframe. Security was achieved through the use of an internal draw-bar, with no handle or knob on the outside.
- 3.80 In the seventeenth century the basic construction did not change, but the number of vertical planks to each door increased and the edges were sometimes moulded as the planks themselves became narrower and defence gave way to decoration. External fastenings were introduced, normally a heavy iron ring-pull. Whilst in some buildings there was still no separate doorframe, in others the door closed flush against a heavy timber frame.
- 3.81 Towards the end of the seventeenth century, these boarded doors evolved into ledged doors where, instead of a double layer of timber, the vertical boards were supported by three horizontal ledges on the internal face. The earliest ledges were relatively thin. Later doors had thicker ledges and became the ledged and braced door that remained in widespread use right up to the middle of the twentieth century, especially for subservient rooms and rural and less fashionable buildings. The diagonal braces provided additional strength and rigidity. Simple strap hinges connected the flush face to a rebated timber doorframe with metal 'Suffolk' type latches as the most common type of fastening. Strap hinge details varied over the centuries and their position moved from outside to the inside of the door. Likewise the planks were originally butt-jointed, often with a small bead

moulding on the joint. This gradually evolved during the twentieth century to tongue and groove.

- 3.82 In the eighteenth century the revival of interest in the architecture of Greece and Rome resulted in a sophisticated and elegant architectural style within which the panelled doors became the norm. Details of the panels varied widely, but the six-panelled version became the most common. Some panels were flush with the stiles and rails others were raised and fielded. Hinges had to be unobtrusive, so as not to spoil the effect, and often H or L type hinges were used. Internally, the door no longer opened into a main room but into a smaller hallway and fanlights over the door allowed light to reach this internal space. The classical doorcase, with pilaster and pediment (triangular or segmental), emphasised the social significance of the door. Door 'furniture' became more elaborate with knockers, door knobs and eventually letter-boxes, all normally made of brass. Boot scrapers outside the door protected the polished floors and rugs inside. In the nineteenth century the number of panels gradually diminished until four-panelled doors became the most usual type. One large raised and fielded panel at the bottom was not, however, uncommon, particularly in the latter part of the century. Overall the effect was chunkier and more 'solid' than the elegance of the eighteenth century. Fanlights too became simpler, with plain rectangles or arches replacing the delicate tracery of the earlier doors. A greater variety of door furniture was used, with iron and, on occasion, glass or porcelain, added to the familiar brass. The door was hung from butt hinges, familiar to those still used today.

Lintels and Cills

- 3.83 The detailing of the lintels and cills was an integral part of window and door design. On the more humble vernacular buildings lintels were generally formed from timber, though on brick structures a simple, segmental ('curved') brick arch was also frequently used externally, in combination with a timber internal lintel. On grander brick buildings rubbed bricks (specially shaped soft bricks with very fine joints) were sometimes used to form flat arches over the window heads. Alternatively in the late nineteenth and early twentieth centuries, imported dressed stone could be used for both the lintels and cills of masonry buildings. In brick or stone walls, windows and doors are set back from the outer face of the wall for protection against weather, with the exception of the late seventeenth century and earlier when doors and windows were set level with the outer face of brickwork. In rendered and weatherboarded walls, windows and doors were set level with the outside face, using a timber pentice board over the head to shed water and occasionally also with an architrave. The main door sometimes had a hoodmould or canopy instead of a simpler pentice board.

Dormers and Rooflights

- 3.84 Dormers are traditionally modest, forming only minor incidents in the roof slope. The exceptions are classically designed grand houses of the early eighteenth century where they were used to emphasise the verticality, proportions and height of the building, and late nineteenth century 'Arts and Crafts' buildings where they emphasise the designed articulation of a roof.
- 3.85 A number of traditional buildings in the district are either 1½ or 2½ storeys, with gable end windows and a limited number of dormer windows used to light the rooms that extend into the roof space. Most dormers are relatively narrow (i.e. two casements wide) and have simple gabled roofs, though on steeply pitched roofs (and particularly on the fen margins) catslide dormers are also not uncommon. Dormers introduced into thatched roofs are generally 'eyebrow' type, though sometimes they may be gabled and roofed in plain tile or slate.
- 3.86 On grander houses the dormers may have flat, or gently arched, roofs covered in lead, which on later 'Arts and Crafts' houses could also have a significant horizontal emphasis.



(left) Eyebrow dormer in thatch

(middle) Nineteenth century decorative dormer

(right) Catslide dormer

- 3.87 Rooflights were generally not used to light habitable rooms, but could be used to light roof spaces used for storage. These rooflights are traditionally relatively small, made of wrought iron or cast iron, with a central vertical iron glazing bar, and are unobtrusively located on the rear slopes, or behind parapets.

Eaves and Verges

- 3.88 Traditionally, eaves and verges in South Cambridgeshire are kept very simple and are cut back tight to the building without fascias, soffits or

bargeboards. Where the eaves extend beyond the line of the wall (more commonly found on timber-framed structures), this is normally detailed as an 'open eaves' with exposed sprockets to the rafter feet. Brick buildings often incorporate decorative dentil courses under the eaves and, sometimes, 'tumbled' brickwork to the verges or chimneystacks. Later Victorian structures may also incorporate verges that project beyond the line of the wall below and these often include decoratively shaped bargeboards.

Chimneys

- 3.89 The introduction of chimneys dates from the medieval period, when flues and chimneystacks were first used to funnel smoke from fires. They only became widely used during the late sixteenth and seventeenth centuries when the stack was substantial and often surmounted by freestanding shafts, usually circular in plan or set diagonally. During the eighteenth and nineteenth centuries, the number of rooms with fireplaces increased resulting in more and larger combined stacks; classical details such as cornices, stringcourses and plinths were also widely used. Chimney pots were introduced on top of the stack in the eighteenth century. These early pots were plain and of modest proportions. In the nineteenth century pots became taller, with more elaborate profiles and decorative features.
- 3.90 Chimneystacks were generally located on gable ends or centrally on the ridge, especially on more modest dwellings. Where stacks were located on gables, it was normal for them to again be placed centrally, such that the flue terminated inline with the ridge, and with the stack flush to the outside face of the gable. Subservient stacks such as for ancillary spaces and service areas such as wash rooms were smaller and less decorative.

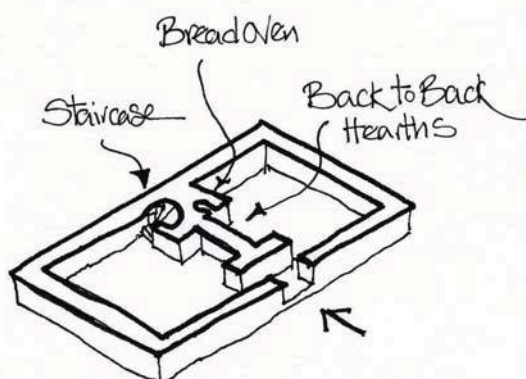
Rainwater Goods

- 3.91 Rainwater goods include; gutters, downpipes, rainwater heads, spouts, and gulleys. They not only protect walls from water penetration, but also contribute to a building's design, giving vertical emphasis, horizontal definition and decoration. The earliest surviving examples of rainwater goods are stone gargoyles and spouts found on medieval buildings, especially churches. Gutters and downpipes were not generally applied to secular buildings until the mid eighteenth century. Before then, wide overhanging eaves of thatched and clay tile roofs provided protection by shedding water away from walls. During the eighteenth century it became fashionable to incorporate gutters either in classical cornices, or concealed behind a parapet wall. These gutters were then connected to lead downpipes via lead rainwater heads, which were often elaborately decorated with mouldings, heraldic devices, initials and dates.

- 3.92 Early guttering was generally made from wood, of simple, square, or ogee box section with minimal decoration and attached to walls beneath the eaves, supported by either wrought iron or steel brackets, or set on brick or stone corbels, or occasionally partly recessed into the wall. Cast iron became available from about 1750, from when cast iron rainwater heads similar to decorative lead goods bearing dates and initials, can be found. The mass production of cast iron gutters and downpipes dates from the early years of the nineteenth century and it became the most common material for rainwater goods from the mid nineteenth century until the 1950s. More recently cast aluminium has been available as a lighter alternative with a similar appearance to cast iron.

Plan Form

- 3.93 The traditional plan form of the area was for wide frontage cottages of shallow depth (i.e. single room deep and a maximum of 6 metres). These spans are limited historically by the sizes of timber. A span of 5 to 6 metres is common and larger buildings are made from multiples of this. These multiples of the traditional span are clearly identifiable in the external appearance of the building, such as by using a double pile roof or aisled form.
- 3.94 The earliest buildings have simple rectangular forms with single room depth plans. A few high status buildings have aisles to increase the internal volume and later more commonly cross-wings are incorporated. The simple rectangular single storey to one-and-a-half storey form continues as the most common form of building in later centuries.
- 3.95 Many traditional cottages follow a 'baffle entry' form, in which there is central chimney stack (usually with two fireplaces back to back) and the main entry door sited on the side of the stack, creating a lobby between the two rooms. Access to first floor was generally via a staircase sited on the opposite side of the stack, but the stairs could also be contained within an outshut to the rear.



Baffle entry house

- 3.96 Larger houses from the eighteenth century onwards frequently made use of the 'double pile' plan form, in which there are two parallel ranges, resulting in four rooms being provided on each floor, together with a centrally placed front door and a staircase located between the two rooms on the rear elevation. These double pile arrangements are characteristic of higher and mid-status buildings such as manor houses, vicarages, farmhouses and villas.
- 3.97 This house type was later to be used as the model for the narrow fronted, Victorian terraced cottages that are also two rooms deep but only one room wide, with further accommodation contained in outshuts to the rear. Examples of these are generally to be found within the larger villages, especially those that experienced rapid growth during the nineteenth century.
- 3.98 Extensions to buildings follow simple traditional additive forms; as attached cross-wings, lower parallel ranges, gables and lean-tos. Double pile roofs to reduce the apparent depth of a deep-span building are too complex for simple vernacular buildings and domestic outbuildings. The additions are clearly identifiable on the elevations and have subservient forms, being lower and narrower than the original building.