

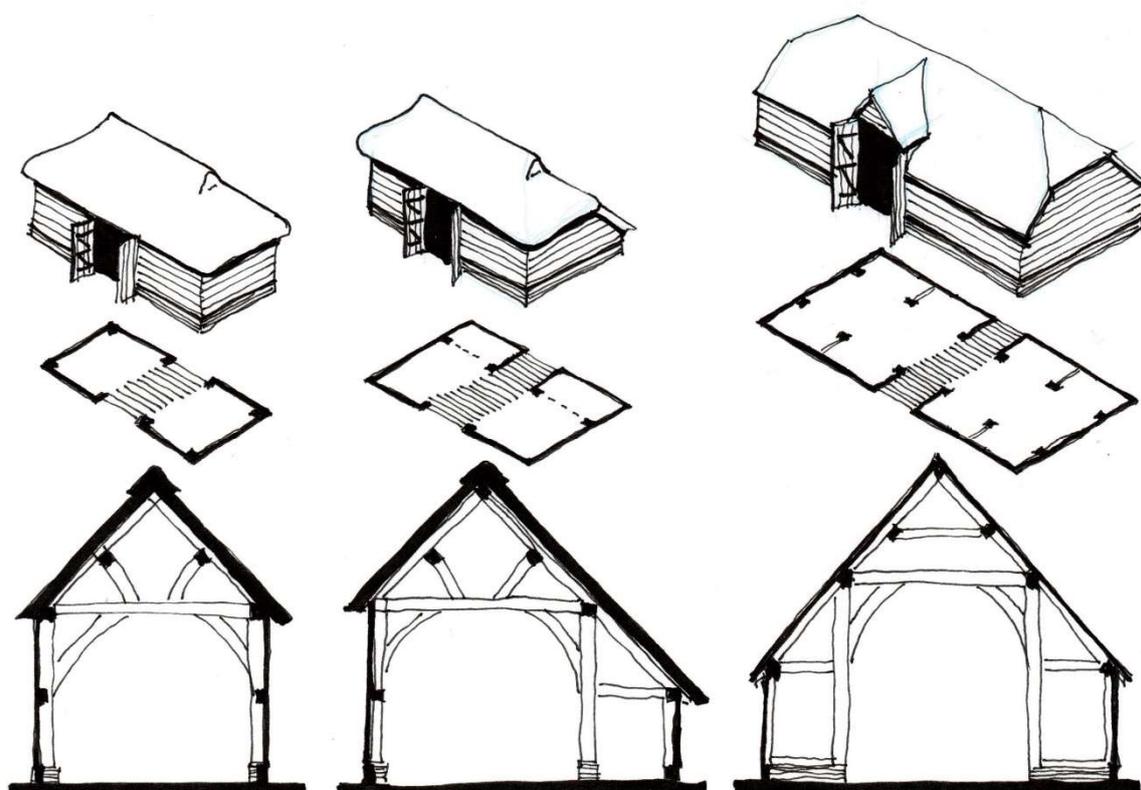
# WHADDON FACT SHEET

## No.4 – FARM BUILDINGS OF THE AREA

This Fact Sheet focusses on the traditional buildings associated with the arable farming of the area. Not all the building types survive today in the village, and examples are drawn from elsewhere in South Cambridgeshire where necessary.

### Barns

The barn is probably the archetypal building associated with farming. A simple, large, open structure that is capable of being put to a variety of uses, and on arable farmland barns have long been associated with the storage and threshing of grain crops such as wheat and barley.



3 bay barn with central threshing floor

3 bay barn with single aisle and central threshing floor

5 bay barn with double aisle and central threshing floor

### *Basic barn types found in South Cambridgeshire*

Modern combine harvesters have changed the way crops are harvested and stored, and the traditional threshing barn is now largely redundant. While at one time every farm would have had at least one threshing barn, today only Rectory Farm in Whaddon retains a historic barn. This dates from the eighteenth century and has 5 bays, clad in weatherboarding with a slate roof, but it most probably originally had a thatched roof that was replaced in slate at some point after the middle of the 19<sup>th</sup> century (ie after the arrival of the railways and the ability to import roofing slates cheaply from North Wales).

A simple late medieval three-bay aisled barn with a thatched roof still survives at Landbeach. The Landbeach Tithe Barn is now in the care of a local heritage trust and is open for visits at various times in the year (see [www.tithebarntrust.org.uk](http://www.tithebarntrust.org.uk)). This barn dates from the late 15<sup>th</sup>

or early 16<sup>th</sup> century and the left hand bay in my sketch may have been adapted to form a granary for the storage of grain in the 18<sup>th</sup> or 19<sup>th</sup> century. The small side door leading into the bay dates from that time.

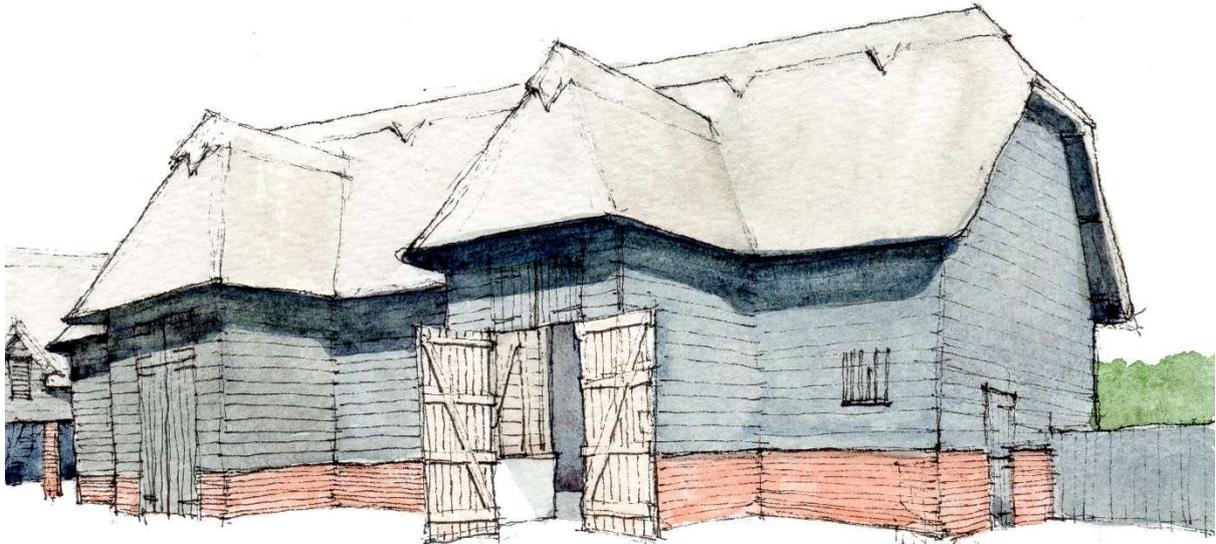


The barn has double doors at either end of the central brick paved threshing floor. During threshing both sets of doors would be left open to allow a through draft to remove the light chaff, while the heavier grain fell to the ground. At the base of each pair of doors is a timber plank 'lift' or *threshold*, to retain the threshed grain – and is, of course, the origins of our word 'threshold'.



At Church Farm in Great Eversden there is another surviving medieval double-aisled barn that probably dates from the 15<sup>th</sup> century, though this one now has a corrugated iron roof in place of its original thatch. This barn is of 5 bays and, still clearly visible, are a series of rebates cut into the main frames that are evidence of earlier *passing braces*, which are sometimes found in comparatively early medieval timber joinery.

A similar, late 14<sup>th</sup> or 15<sup>th</sup> century, double-aisled barn is at Manor Farm, Bassingbourn, immediately south of the church on North End. This barn again has passing braces from the main tie beams, passing the aisle posts, and on down to the aisle frames.



The Great Barn (1792)  
Home Farm, Wimpole

One of the more impressive barns of the area, which in normal times can also be visited, is the Great Barn at Home Farm on the Wimpole Estate. This barn dates from the late 18<sup>th</sup> century and was designed by the architect John Soane as part of a model farm built for the 3<sup>rd</sup> Earl of Hardwicke. It has 8 bays, with two threshing floors, and symmetrically arranged cart doors set in projecting porches. These projecting porches provided a degree of shelter for carts waiting to be unloaded, and also created larger threshing floors. At the time of building threshing was still done with hand flails, but early in the 19<sup>th</sup> century the Earl introduced a *Marshall's Threshing Machine*, and a descendant of that early machine was still in use for threshing oats in the 1950s.

## Granaries



18<sup>th</sup> Century Granary Rectory Farm, Whaddon.

Having extracted the grain by threshing, it was then necessary to store it, and preferably somewhere where it would not be eaten by rats and other vermin. Granaries could be provided in the form of a first floor room, incorporated over cartshed or stables, but frequently they were a freestanding timber frame structure, and raised about two feet (600mm) above the ground to keep the grain dry and discourage rats. Further protection from rats was often provided by raising the granary on *staddle stones* – short stone columns with mushroom caps that rats could not climb around.



18<sup>th</sup> Century Granary Whaggi's Farm, Arrington

Staddle Stone.

There are two surviving 18<sup>th</sup> century granaries in Whaddon, at Rectory Farm and Whaddon Grange. Both are raised on gault brick piers. The one at Rectory Farm has a corrugated iron roof, though no doubt this was originally of thatch. The Granary at Whaddon Grange has an adjoining cartshed all contained under a tiled roof, but again it is likely that the roof of this granary and cartshed was originally of thatch, and the building was tiled at some point in the 20<sup>th</sup> century.

The closest granary incorporating mushroom-shaped *staddle stones* is at Wragg's Farm, at the north end of Arrington on Ermine Street (and clearly visible from the road). It also dates from the 18<sup>th</sup> century and has a pyramidal roof in plain tiles capped with a stone finial.

## Dovecotes



Pigeons were originally kept as a source of fresh meat, especially in winter, but their importance declined with the increase in livestock during the eighteenth century and, in particular, the number of livestock that could be kept overwinter. The guano from the pigeons was also used for fertiliser. The right to build dovecotes was strictly controlled, possibly because the pigeons fed on standing crops, and initially this was restricted to major landowners. Later, small freeholders could build their own dovecote, and later still tenant farmers were allowed to have a dovecote with their landlords' consent.

Freestanding dovecotes were built from the Middle Ages up to the late nineteenth century, and were generally circular or square in plan.

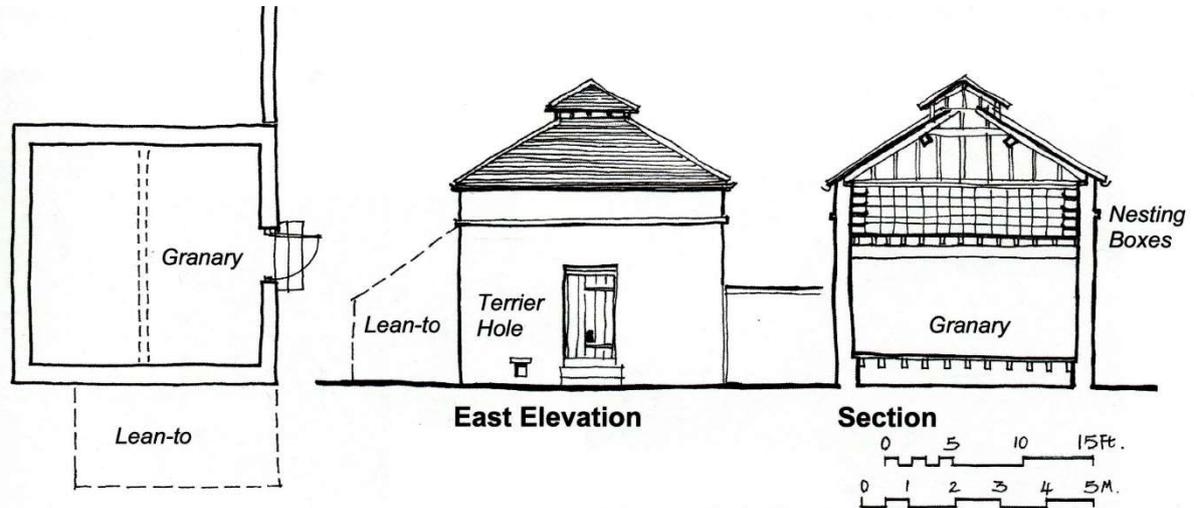
In Whaddon there is an 18<sup>th</sup> century dovecote at Rectory Farm, which was enlarged in the 19<sup>th</sup> century. Its two phases of construction are clearly visible in the contrasting brickwork, the earlier 18<sup>th</sup> century section is in soft red brickwork from Bedfordshire, whereas the 19<sup>th</sup> century element is in yellow gault brickwork. It has a pyramid roof in slate, that suggests the later phase was built after 1850 and the arrival of the railways.



*18<sup>th</sup> and 19<sup>th</sup> century dovecote at Rectory Farm Whaddon.*

Like granaries, dovecotes could also be built in conjunction with other farm structures, and the dovecote at Malton Farm Orwell (which is sited alongside Malton Lane) is built over a cartshed (the doors to the cartshed are modern, and I have removed them in my sketch).

At Home Farm in Fen Ditton there is an 18<sup>th</sup> century brick dovecote built over a granary, with the nesting boxes contained within an upper chamber. The floor of the granary is again raised up about 600mm and a hole in the brickwork allowed a terrier in under the granary floor to catch rats.



Plan

DOVEHOUSE & GRANARY

Plan, elevation and section of dovecote and granary at Home Farm, Fen Ditton

## Mills

Having harvested and extracted the grain it was then necessary to have it milled and, before the advent of steam, mills were powered either by wind or water.

### Windmills

Traditional windmills could take one of three forms, post mills, smock mills or tower mills, and examples of all three can be found in South Cambridgeshire. The oldest windmills were post mills, built of wood and mounted on a massive upright timber post. The whole of the superstructure of these mills could be turned on their upright post to face into the wind.



One of the earliest surviving post mills in England is at Bourn. This dates from 1636, though it has undergone a number of cycles of repair and renewal since that time, and its internal machinery dates from the 19<sup>th</sup> century. A date of 1758 is carved into one of the first floor studs and probably records one of the early cycles of repairs; further repairs were undertaken in 1874, 1933 and 1984. The mill has a large timber tiller to which a horse might be harnessed to turn the mill into the wind. The mill is now in the care of Cambridge Past Present and Future and has a number of open days each year (see [www.cambridgeppf.org](http://www.cambridgeppf.org)).

A second Post Mill is at Great Chishill close to the border with both Hertfordshire and Essex. This mill is more recent, and dates from 1819, though it incorporates parts from an earlier mill constructed on the same site in 1721. It is one of seven open-trestle post mills in the country, but this is the only one fitted with a fantail for automatic turning into the wind. This windmill is now in the care of the Great Chishill Windmill Trust, and again has a number of open days each year (see [www.greatchishillwindmill.com](http://www.greatchishillwindmill.com)).



Like post mills, smock mills are also built of timber and weatherboarded, but differ from post mills in that only the cap on top of the mill is turned to face into the wind. The milling machinery and millstones sit within a stationary tower below this rotating cap. Impington Mill is a smock mill that dates from the early 19<sup>th</sup> century. It has a tapering octagonal timber structure set on top of a brick base so as to lift the sails higher off the ground and into the wind. This mill is privately owned and has been undergoing a programme of restoration over many years. The sails (not present when I did my sketch) have now been reinstated and the internal machinery refurbished.

The final phase of development of windmills in the 19<sup>th</sup> century was the tower mill. These are similar to smock mills, in that only the cap rotates to face into the wind, but built of stone or brick which enabled the mill to be taller overall and, therefore, better to catch the wind.

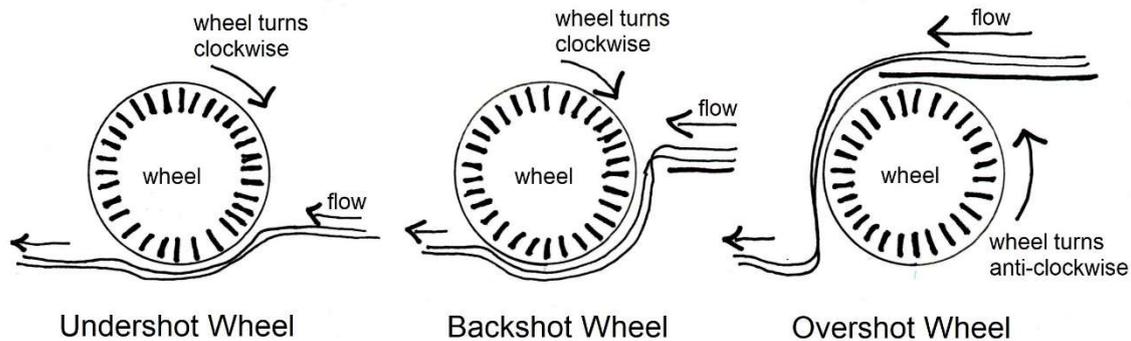


*Hooks Mill near Guilden Morden. A tower mill built in 1865 alongside an 18<sup>th</sup> century watermill that was adapted for steam in the 19<sup>th</sup> century.*

The exposed masonry on tower mills was vulnerable to damp penetration from driving rain, and many were often rendered and/or painted in tar to keep the interior dry. Advances in milling after the First World War gradually made windmills redundant and during the 1930s many fell out of use. Some continued to work into the 1950s, but ceased to be commercially viable when they required major repairs or refurbishment.

## Watermills

Watermills are generally of three basic types, *undershot*, *backshot* or *overshot*. The difference is how the water is fed onto the wheel, and this governed the overall power and efficiency of the mill.



In an undershot mill, the water flows under the waterwheel to turn it, and while this does not require a significant difference in height in the water level either side of the mill, it is also the least efficient. In a backshot mill the water is delivered onto the mid-point of the waterwheel, significantly increasing the power available. The most efficient watermills are overshot, where the water is delivered over the top of the waterwheel, but this requires a significant height difference between the water in the mill pond and the 'tail race' – the water flowing downstream away from the mill. Generally speaking overshot mills are normally only found in upland areas, where it is more common to find the steeply falling streams needed to achieve the height difference in water levels either side of the mill. In the relatively flat topography of Cambridgeshire it was more normal for mills to be undershot, though some were backshot.



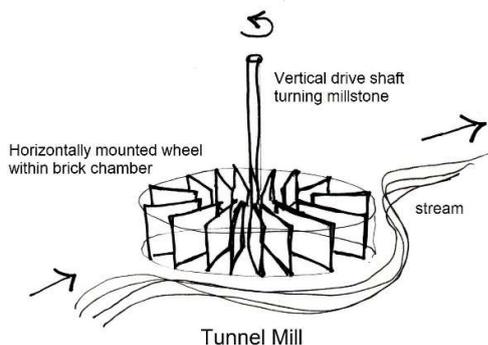
Houghton Mill (now in the care of the National Trust) is the last surviving watermill on the River Ouse. There has been a mill on this site since 974 AD and the current mill dates from the 17<sup>th</sup> century, with major rebuilding taking place in both the 18<sup>th</sup> and 19<sup>th</sup> centuries.

At one time it had three backshot waterwheels driving eight pairs of grinding stones, but milling ceased in 1930 and in 1931 two of the wheels were removed and replaced by modern sluices to control the water on the river. One wheel remains on the north side. The mill became a Youth Hostel, and was then given to the National Trust in 1939.

The miller's cottage at Hinxton watermill dates from the 17<sup>th</sup> century with additions dated 1766, and the adjoining mill also dates from the late 18<sup>th</sup> century with 19<sup>th</sup> century alterations. The mill originally had a single undershot wheel, but this was removed in 1914 and replaced by a 'Little Giant' water powered turbine made in Ontario, USA. The mill was last used in 1950 and is now in the care of Cambridge Past Present and Future, with a number of open days each year (see [www.cambridgeppf.org](http://www.cambridgeppf.org)).



There are a number of other watermills in the area, mostly in private ownership, and many now converted to residential use. Shepreth Mill dates from the mid-18<sup>th</sup> century and has a single undershot wheel, and similarly Topcliffe Mill, off North End in Meldreth, dates from c.1740 with c.1840 additions and an undershot wheel. Both of these mills are timber-framed with weatherboarding, while Bulbeck Mill in Barrington is of brick under a slate roof and dates from c.1810 with 1863 alterations. Its undershot wheel has since been removed. Sheene Mill in Melbourn is another site with a long history of milling, and a watermill was recorded here in the Domesday Book. The current mill dates from the late 17<sup>th</sup> century, then altered and extended in 1833. Once again it had an undershot wheel.



There is also a record of a watermill in Whaddon. This was a *tunnel mill* – a relatively primitive and ineffective arrangement in which a paddle-wheel was mounted horizontally within a brick chamber set into the flowing water running through a brick lined tunnel, and with a direct drive shaft to the millstones above. It was probably built in the 17<sup>th</sup> century, however nothing of this mill remains today.



Common to both windmills and watermills was the risk of explosion caused by flour dust, and to counter that risk elaborate precautions were taken to avoid creating sparks. The millstones could be adjusted to within millimetres of each other, but would not be allowed to touch, and it was essential that metal components could not come into direct contact with each other within the moving machinery. Therefore the teeth for some cogs within the machinery were made of wood, often applewood, and would need to be replaced as they wore down.

*Left: Replacement teeth in applewood as part of the refurbishment of the machinery at Impington Smock Mill*

Most mills operated two different types of millstone depending on what was being ground. Millstones cut from a single lump of millstone grit from the northern Peak District were used for milling barley, but flour was processed on French burr stones, which were harder and better for finer grinding. These French stones were not made in one piece like those from the Peak District, but were cut in sections and bound together with iron bands. Only the upper (runner) stone revolved.

*Right: Composite French millstone bound with metal hoops at Great Chishill Post Mill*

