



WATER & STEAM MILLS IN ESSEX

**COMPARATIVE SURVEY OF MODERN
& INDUSTRIAL SITES and
MONUMENTS**

No. 18



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*An archaeological, architectural and historical appraisal of
post-medieval and industrial age water powered and
steam powered mills*

COMPARATIVE SURVEY OF MODERN / INDUSTRIAL SITES AND MONUMENTS No. 18

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Front cover: Little Hallingbury Mill, Gaston Green

COMPARATIVE SURVEY OF MODERN / INDUSTRIAL SITES AND MONUMENTS IN ESSEX

The survey of standing and buried remains of the more recent architectural and archaeological heritage of Essex began in 1995. Copies of the survey reports are listed below and are available for public consultation at the Essex Historic Environment Record and the Essex Records Office.

Gould, S. 1996: **The Essex Malt Industry: History, Technology and Architecture.** Comparative Survey of Modern/Industrial Sites and Monuments No.1 (Essex County Council internal typescript report).

Thorpe, S. 1996: **Military Airfields in Essex During World War Two.** Comparative Survey of Modern/Industrial Sites and Monuments No.2 (Essex County Council internal typescript report).

Gibson, S. 1997: **The Essex Lime Industry.** Comparative Survey of Modern/Industrial Sites and Monuments No.3 (Essex County Council internal typescript report).

Kemble, J. 1997: **Historic Boundary Markers in Essex.** Comparative Survey of Modern/Industrial Sites and Monuments No.4 (Essex County Council internal typescript report).

Gould, S., Crosby, T. and Gibson, S. 1997: **Malthouses in Essex Volume Two.** Comparative Survey of Modern/Industrial Sites and Monuments No.5 (Essex County Council internal typescript report).

Garwood, A. 1997: **Iron Foundries in Essex.** Comparative Survey of Modern/Industrial Sites and Monuments No.6 (Essex County Council internal typescript report).

Doyle, T. 1997: **Fields of the First. A history of aircraft landing grounds in Essex used during the First World War.** Comparative Survey of Modern/Industrial Sites and Monuments No.7 (Forward Airfield Research Publishing).

Garratt, T. 1998: **Essex Poor Law Buildings: erected and utilised following the 1834 Poor Law Amendment Act.** Comparative Survey of Modern/Industrial Sites and Monuments No.8 (Essex County Council internal typescript report).

Garwood, A. 1999: **Essex Hospitals 1800-1948.** A Study of their History, Design and Architecture. Comparative Survey of Modern/Industrial Sites and Monuments No.9 (Essex County Council internal typescript report).

Cocroft, W. and Menuge, A. 2001: **Buildings of the Radio Electronics Industry in Essex.** Comparative Survey of Modern/Industrial Sites and Monuments No.10 (Royal Commission on the Historical Monuments of England typescript report).

Kemble, J., Gould, S., and Pratt, N.L. 2001: **The Chelmer and Blackwater Navigation and Conservation Area.** Comparative Survey of Modern/Industrial Sites and Monuments No.11 (Essex County Council internal typescript report - two volumes).

Crosby, T. 1999: **The Public Water Supply Industry in Essex 1850-1939.** Comparative Survey of Modern/Industrial Sites and Monuments No.12 (Essex County Council internal typescript report).

Crosby, T. 2001: **The Essex Textile Industry**. Comparative Survey of Modern/Industrial Sites and Monuments No.13 (Essex County Council internal typescript report).

Pratt, N.L. 2002: **Road Transport in Essex 1750-1900: a survey of tollhouses, milemarkers, and signposts**. Comparative Survey of Modern/Industrial Sites and Monuments No.14 (Essex County Council internal typescript report – two volumes).

Pratt, N.L. 2003: **Road Transport in Essex 1750-1900: a survey of Road bridges**. Comparative Survey of Modern/Industrial Sites and Monuments No.15 (Essex County Council internal typescript report).

Crosby, T. 2002: **The Essex Brewing Industry**. Comparative Survey of Modern/Industrial Sites and Monuments No.16 (Essex County Council internal typescript report).

Crosby, T., Garwood, A & Corder-Birch, A. 2006: **Industrial Housing in Essex**. Comparative Survey of Modern/Industrial Sites and Monuments No. 17 (Essex County Council internal typescript report).

Garwood, A. 2008: **Water and Steam Mills in Essex**. Comparative Survey of Modern/Industrial Sites and Monuments No. 18 (Essex County Council internal typescript report).

PROGRESS OF COMPARATIVE SURVEY OF MODERN/INDUSTRIAL SITES & MONUMENTS IN ESSEX

The following sets out the work to date and future programme. Themes are selected on the basis of perceived threat together with the expertise of the individual fieldworker. Where appropriate the larger categories will be sub-divided into smaller units so that they can be effectively tackled.

<u>LIST OF CATEGORIES</u>	<u>FIELDWORK</u>	<u>REPORT</u>	<u>HER ENHANCEMENT</u>
Extractive Industry			
Brick & Tile	UNDERWAY		
Cement	UNDERWAY		
Gravel			
Manufacture			
Iron	DONE	DONE	DONE
Textiles	DONE	DONE	DONE
Lime	DONE	DONE	DONE
Glass			
Pottery	UNDERWAY		
Leather			
Salt			
Chemicals			
Explosives			
Electronics	DONE	DONE	DONE
Urban Industry			
Agriculture			
Food & Drink			
Malting	DONE	DONE	DONE
Brewing	DONE	DONE	DONE
Watermills	DONE	DONE	
Windmills			
Food Processing			
Public Utilities			
Water	DONE	DONE	DONE
Gas			
Electricity			
Oil			
Nuclear Power			
Communications			
Road	DONE	DONE	DONE
Railway	UNDERWAY		
River			
Canals	UNDERWAY		
Ports			
Aviation (military)	DONE	DONE	DONE
Aviation (civil)			
Bridges	DONE	DONE	DONE
Leisure & Recreation			
Public Buildings & Institutions			
Workhouses	DONE	DONE	DONE
Hospitals	DONE	DONE	DONE
Schools			
Prisons			
Religion			
Housing	DONE	DONE	DONE

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1. Introduction

This report details the results of an extensive county-wide survey of post-medieval and Industrial Age water and steam powered mills in Essex. The survey was undertaken to record and assess all the extant mills in Essex and provide, where appropriate, descriptions of their associated buildings (millhouses, granaries and stables), structures (sluices and weirs) and watercourses. The three main types of mill surveyed were river mills, coastal tide mills and steam mills built or later converted to corn milling, fulling, textile manufacturing or gunpowder milling. This survey did not include:

- Windmills. These will be covered in a separate report
- Demolished watermills, or sites where only the mill house, watercourses or ancillary buildings remain
- A detailed analysis of the watercourses and landscapes

This report should not be considered as a complete list of all mills or mill sites in Essex. As has been stated above, certain categories have been omitted from this survey for reasons of expediency.

The aim of the survey is to establish priorities within the surviving resource, to assess the existing statutory designations, to analyse the extent of reuse within this building category, to provide a definitive list of the best examples in Essex (in terms of architectural and technological survival) and where appropriate formulate a coherent management strategy. Assessing the significance of each site and recommending a framework for the future management will ensure that each site is fully considered and an appropriate response given should significant remains become threatened. As most watermills are already listed or lie within conservation areas existing designations should ensure that a sympathetic approach is taken to guard against unnecessary demolition and/or insensitive works. Although designation should be sufficient to preserve the historic, architectural and technological integrity of a mill, it is also clear that in many cases the list descriptions, carried out over the last 20-30 years, may no longer accurately represent of the current state of the building. In such cases the descriptions and the Historic Environment Record (HER) need to be updated to provide accurate baseline information for future conservation advice.

This survey identifies the existence of the remaining buildings on a particular site, describes their external character, features, architecture, history and in the few cases where internal access was available their technological standing. It also comments upon completeness of the building/s, group value, condition, present use and importance. At least one photograph was taken of each site and the mill and associated buildings marked onto a current OS map extract. Due to the nature of the survey just over a third or **35%** of the mills were inspected internally, therefore, where appropriate, recommendations are made that current internal configurations should be inspected, assessed and/or studied in detail through PPG 15 and PPG 16, as and when they become the subject of a planning application or pre planning enquiry.

Planning Policy Guidance Note 16 (DoE 1990) notes that “developers and local authorities should take into account archaeological considerations and deal with them from the beginning of the Development Control Process”. PPG 16 includes “settlements and remains from every period, from the camps of early hunter gatherers ... to the remains of early 20th century activities ... places of worship, defence installations, burial grounds, farms and fields and sites of manufacture” as examples of today's archaeological landscape. Standing buildings are an integral part of that resource and should therefore be considered in the same manner as any other buried archaeological site.

For Listed Buildings and buildings within a Conservation Area Planning Policy Guidance Note 15 (DoE and DNH 1994) adds that “local planning authorities should also consider, in all cases of alteration or demolition, whether it would be appropriate to make it a condition of consent that applicants arrange suitable programmes of recording of features that would be destroyed in the course of works for which consent is being sought”.

2. Layout of the Report

This report is divided into several sections. Section 3 summarises milling on a national level from pre-history to the post-medieval boom and collapse in the later C19. Section 4 considers the architectural characteristics, commonality of features and the consequence of the advent of steam power and steam milling. Priorities are established in Section 5; the criteria for statutory protection are critically appraised and in Section 6 sites and structures of outstanding merit have been recommended for listing or re-grading. The need for impact assessments, pre-determination and more detailed recording is also considered.

An inventory, provided at the back of the report, contains information on all the sites and is grouped by district, type and where possible ordered numerically by Essex Historic Environment Record (EHER) Number. Each assessment sheet includes a description of the building(s), their archaeological potential, the site's significance, current statutory protection, recommended action and future management strategy. Each site is also graded according to local, regional, national, major national or international importance. The textual information is supplemented by at least one photograph, a current map extract and if appropriate an early edition OS map.

3. Historic Context

When early man moved away from a nomadic hunter, gatherer existence into a more sedentary lifestyle growing cereal crops, the need to find an effective method to process grain became an imperative. Early tools such as a hammer stone were simply used to pound nuts or grains. A development, used by the Egyptians and early Romans was the saddlestone, a concave shaped stone used in conjunction with a rolling muller stone to grind the food instead of just crushing it. The next major advance was the use of hand querns, a pair of stones which like the millstones of many generations later, ground the grain by revolving about a central axis. Early hand querns have been recovered from Iron Age settlements in this country and were widespread throughout the Roman occupation. The use of querns continued for a considerable period, increasing in size with the introduction of animal powered

mills. Possibly one of the earliest references to such a mill is made by Cato (232-147 BC) when documenting a revolving mill driven by an ass. In the Roman world the wide use of querns and the plentiful supply of slaves, removed the need to develop water powered mills and was actively discouraged by Vespian (AD 69-79) fearing the loss of laborious repetitive work and therefore results of widespread unemployment. The Greeks on the other had developed a simple form of watermill by the C1 BC. This 'Greek Mill' consisted of a vertical shaft on which a horizontal wheel with blades or vanes was mounted. The shaft passed through the lower bed stone and was wedged into an upper stone, causing it to rotate. Similar horizontal mills were developed in China from C3 AD and were still widely used in Norway during the C18 and C19s. The latter became known as Norse Mills and examples of horizontal Norse mills have been uncovered in northern Scotland, the Shetlands, Orkneys, Faeroes and Western Isles (Syson, 1980). Click Mill in Orkney and Southvoe Mill in Shetland are two such examples (Cossons, 1975).

The use of a vertical wheel turning on a horizontal shaft is first recorded between 20-13 BC by the Roman engineer Marcus Vitruvius in his work '*De Architectura*', who describes large diameter wheels used as 'engines for raising water'. Such wheels were probably much the same as the vertical waterwheels used extensively from the C18 onwards and similar to those which survive today. Despite their greater efficiency the vertical wheel, later becoming known as the Vitruvian wheel after Marcus Vitruvius, was not widely developed until after the abolition of slavery in the C4 AD. Therefore in Britain very few Roman watermills have been recorded. However a number of sites, presumably supplying the garrisons and built due to the shortage of local labour, have been excavated along the length of Hadrian's Wall, at Haltwhistle Burn and Chesters in Tynedale, Northumberland and at Willowford Bridge on the River Irthing, Carlisle, Cumbria. Closer to Essex, evidence for a C3-C4 watermill was unearthed during the excavation of a Roman Corridor building at Wherwell in the Test Valley, Hampshire (Lyll, 1912), A late Roman (c.4th century) leat system and sluice/weir associated with a probable watermill and industrial complex (HHER 0779) were uncovered along the west bank of the River Chess, near Solesbridge, Chorleywood, Hertfordshire (Bryant, forthcoming) while two C4 watermills were revealed in Ickham and in Well, near Canterbury, Kent (Young, 1975). Although the remains of a Roman watermill has yet to be uncovered in Essex, a system of ancient man-made watercourses (leats) along the Cressing Brook, near the Rivenhall Roman Villa, point toward a high status Roman domestic complex, farmstead and associated watermill (EHER 8070).

Numerous references to watermills appear in the Saxon charters but the physical remains or archaeological evidence for these buildings is sparse. Possibly the most important, based on the extent of investigation, is a mid C8 (AD 733-766) horizontal mill identified during excavations on the south side of Bolebridge Street, Tamworth. This revealed a multi-phase building, incorporating a substantial structure constructed of oak baulks and retaining the leat, wheel site, sluice gates and the outlet into the river (Rahtz & Sheridan, 1981). Excavations in Old Windsor by Dr Brian Hope-Taylor uncovered a C9 mill with a triple vertical-wheeled mill powered by a leat taken off the Thames with a secondary horizontal-wheeled mill above (Hope-Taylor 1958), while indicators suggesting the presence of Saxon watermills have been found on excavations in Reepham, Norfolk (NHER 3147) and at Wickham Bonhunt in Essex (EHER 186).

The Domesday survey of 1080-1086 is the first attempt to quantify mills on a national level and records about 6000 watermills in England, mostly located to the south and east of the Trent and Severn. However this figure should be treated with caution as Domesday excluded some northern counties; no mention is made of Northumberland, Lancashire or Cumbria, while cursory attention was given to Cornwall. The true number of Domesday mills in Essex also remains uncertain although it can be confidently placed between 200 sites (Hogden, 1939) and 225 sites (Marriage & Fell-Smith). Both Norse Mills and Vitruvian mills would have been in use at this time although it is likely that the vertical wheels of the latter would have predominated. As watermills were valued as a means to raise income many sites passed into the hands of or were built by the lord of the manor. To further ensure their mills were adequately employed it was not uncommon for manorial landlords to prohibit the use or possession of hand querns. In addition to being forced to grind their corn at the landlords mill the tenants also suffered 'Soke Rights' a form of taxation where the manorial miller would take a proportion of the flour, usually one bowlful from every two bushels of grain or a sixteenth by volume (Syson, 1980). The other predominant mill and alternative to the manorial site were monastic mills, built, in the case of the Benedictine, Cluniac and Cistercian orders, to serve large communities of monks and hired labour. There are references to watermills at important monastic sites such as Fountains, Kirkstall and Rievaulx Abbeys and in Essex to watermills built by the Premonstratensian Order at Beeleigh Abbey in 1189 (EHER 38244) and by the Cistercian Order at Coggeshall Abbey in 1140 (EHER 8660). Although neither of these early medieval mills survive today, both sites continued in milling following the upheaval of the dissolution, passed into private hands and were inevitably rebuilt on or near to the original site on several occasions. Because of the requirements of fall and flow watermill sites are amongst some of the most continuously used by industry and consequently many of the mills that stand today occupy the same site or are very near to their Domesday predecessor.

From the C15 various English Corn Laws were introduced to help maintain adequate domestic supplies of grain and to stabilize the price at a profitable level. This was achieved by placing taxes on both import and exports and fixing quotas. The effect was to raise bread prices and give some home grain producers substantial financial advantages over foreign producers. This virtual monopoly continued until the Corn Laws were repealed by Robert Peel in 1846. Peel's free trade policies ultimately lead to a rise in the quantity of imported wheat and the lowering of bread prices.

By the C16 water was the most important source of motive power and became an important factor in the location of Industry. For example water powered fulling mills took advantage of the many streams in the north and west of England to attract textile manufacture which had long been a cottage industry in East Anglia. By the end of the C16 waterpower was being used for many purposes i.e. pumping, hauling, ore crushing, rolling metals, milling gunpowder and many other industrial applications. As uses for waterpower in industry expanded, so did investment and the study of waterwheel design and technology. John Fitzherberts '*Boke of Surveying and Improvements*' published in 1539 records that it was common to build corn mills not on large rivers but sites served by a man-made millstream to a weir. He also refers to the need for an adequate fall in the tail race to avoid backwatering which may cause the wheel to slow and the superiority of breast shot and overshot wheels over undershot wheels. However, based on economics and the ease of

which it could be installed and not its efficiency the undershot wheel continued as the most popular choice of waterwheel from the C16.

Spurred on by industrialisation and the buoyant agrarian economy experienced at the turn of the C18 a period of investment, renovation and/or construction of new watermills emerges. This investment also occurs during a period when locally the cloth industry was in decline and the demand for bread to feed the burgeoning towns increased. As a result many existing fulling mills were converted over to mill flour. As industrialisation continued to grow from the early C18 onwards the waterwheel was dominant in industry and well after the steam engine became established. Waterwheels were cheaper and could power machinery early rotative steam engines could not, the latter frequently relegated to driving auxiliary apparatus. The development of the waterwheel towards its peak was brought about by the experiments of John Smeaton (1724-92). He discovered that waterwheels were more efficient by filling the buckets of an over or breastshot wheel and driving the wheel by gravity instead of by impulse. This achieved a 22% efficiency from an undershot and 63% from an overshot wheel. He also introduced the first cast-iron axle (1769) capable of dealing with the higher torsional loads generated by large-output waterwheels. The use of metal construction for the waterwheel and the main gearing became popular during the C19, with cast-iron replacing wood. As the diameter and width of the wheels and buckets increased, problems encountered with air-locks were resolved by cutting apertures into sole plates and modifications to the buckets. As a result William Fairburn claimed a 25% increase in power output while engineer General J.V Poncelet, through simple alterations to curvature of the paddles, raised the efficiency of the undershot (later also known as the Poncelet wheel) by over 20% (Cossons, 1975). Other notable late C18 engineers linked to milling include Andrew Meikle who invented the first threshing machine, John Rennie who designed a sluice gate mechanism to control head water and increase efficiency of breast shot wheels and Oliver Evans who introduced elevators and rotating augers to transport grain.

Larger wheels also presented difficulties with the levels of torque transmitted through their shafts; this was addressed in the larger industrial mills by the addition of smaller segmental or rim gears placed around the periphery of the wheel. The advantages of the smaller rim gears were that they rotated at a higher speed and diverted the bulk of the torque away from the wheel axle. The mid C19 again saw a prosperous period within agriculture, with farmers modernising their farms and adopting industrial methods. This confidence built on improved arable production and further increases in population growth provided the impetus for millers to improve and modernise their mills once more. Many of the older timber water wheels and stone drives were ripped out and replaced with more efficient wheels, cast-iron stone gears and steam powered engines. While the design and efficiency of the waterwheels within small corn mills to large industrial applications had been progressively improved upon over the last few centuries, the early C19 saw the reinvention by Benoit Fourneyron of the horizontal mill or what was to become the water turbine. Developed from c. 1840-50 by James Whitelaw (Scotch Mill) Fourneyron and Thompson (Vortex) turbines began to rapidly replace waterwheels as they were more efficient and rotated at much higher speeds. This made them more suitable for driving the faster running machinery developed following the Exhibition of 1851 and the roller mills bought in by 1870. It was comparatively easy to replace waterwheels with a turbine as they could reuse the same wheel pit and its head and tail race. It is estimated that half of

the 2000-3000 turbines installed from the mid 1800s to the turn of the century (c.1840-1900) were water wheel replacements (Hudson, 1965).

The advent of the water turbine and the rise of steam power were undoubtedly both factors but not the sole reasons for the demise of the waterwheel and traditional country corn watermill. By the latter part of the C19 steam engine began to replace waterwheels in larger industrial mills but within rural mills waterwheels continued to be used supplemented by a steam or later oil engine. The repeal of the Corn Laws in 1846 with the removal of 'protectionism' effectively opened up the markets allowing cheaper grain and flour to be imported from Europe and following the end of the American Civil War (1861-65), from the prairies of North America. Fierce competition for the miller came in the shape of large industrial flour mills built in coastal locations which took advantage of and monopolised the cheaper imported grain. These huge water turbine or steam powered flour mills were frequently highly automated and equipped with banks of highly efficient roller mills, a huge technological leap invented by Bavarian engineer, András Mechwart and introduced from Hungary in the 1870s. The abstraction of water from rivers and streams to supply the booming industries, land drainage resulting in rapid run-off and flooding and the increased requirements for drinking water and sanitary use placed great demands on water reserves and in many cases mills were robbed of sufficient water or their watercourses disappeared completely. On top of this the agricultural depression of the later C19 and early C20 and the outcome of two world wars effectively finished off small rural watermills, many were forced to close down or to survive diversify into grist mills or animal feed.

Textile Mills (taken from The Essex Textile Industry by Tony Crosby)

Whilst corn mills served the requirements of arable farming, fulling mills and later silk mills became an important part in the development of the textile industry in the region and particular in Essex.

Production of woollen cloth in Essex can be traced back to Roman and Saxon times, and was certainly well established by the medieval period. In the mid sixteenth century the Dutch introduced what was to become the main type of cloth produced in Essex, 'bays' (from which baize is derived) and 'says' (a type of serge). These were light, loosely woven cloths similar to worsteds, but which needed fulling, though not heavily. The main market for this cloth was Spain, Portugal and Latin America although a small amount was produced for the home markets. In 1700 Colchester, with its Dutch Quarter dating back to 1570 produced about half of the county's output of woollen cloth, with centres at Braintree and Bocking, Coggeshall, Halstead, Dedham, Saffron Walden and Chelmsford producing the rest.

The bay makers and say makers (clothiers) obtained their raw wool from an area stretching between Lincolnshire in the North to Kent in the South and Leicestershire and Northamptonshire in the West. The clothiers employed their own woolcombers and spinners in the surrounding villages and once spun the yarn was brought back to the clothier's warehouse before being put out to weavers. Once woven it was again brought back to the clothier before being carted to the fulling mill for cleaning, fulling to create a dense felt finish, then stretched and dried on tenterhooks.

There were booms and slumps in the trade throughout the 1700s dependent upon England's relationship with France and Spain, with, overall, a general decline in the

industry throughout that century. Inevitably the smaller centres were the first 'casualties of war', but even the larger more mechanised businesses eventually ceased production by the early nineteenth century. The reasons for the decline in the woollen trade were many and varied, and were related to the particular characteristics of the Essex trade. Thus it was too dependent upon a single product – bays and says – which had a very limited and vulnerable market. There was an unwillingness on behalf of the clothiers to diversify until the beginning of the nineteenth century, by which time it was too late. The structure of the trade, using scattered, waged labour, had many inherent weaknesses when compared with production under one management in one location. The fact that the Essex industry was slow to take up mechanisation may have been a factor in its downfall. However, there was some mechanisation in Essex with the horse powered roughing or rowing mill (for raising the nap on the cloth) introduced in 1750, the wool-mill for cleaning and loosening the wool before carding and combing was in use in 1770, Kay's Flying Shuttle was in use in the 1750s, and a Spinning Jenny in 1794.

The decline in the woollen trade, which saw many of the fulling mills converted back to corn mills, could have had potentially disastrous effects on the Essex economy, but just as soon as that industry declined, the silk industry arrived.

The silk textile industry was well established in England by the C15, although imported silk cloth had been in use long before that. During the C16 and C17 Dutch refugees had settled from time to time in the Spitalfields area of east London, just outside the City. It was to this area also that Huguenot refugees from France settled following the revocation of the Edict of Nantes (which had given the French Protestants freedom and rights) in 1685. While Spitalfields became a major centre of silk cloth production based in the attic workshops of the hand loom weavers, water powered silk throwing mills were being established in Derbyshire and east Cheshire.

While it was during the C18 that the textile industry developed the mechanisation of spinning of yarn, it was not until the late C18 early C19 that powered mechanisation of weaving cloth became wide spread. The Spitalfields industry could not however compete with the mechanised factory/mill so to protect their incomes the Spitalfields workers petitioned for fixed labour rates which resulted in the Spitalfields Act 1773 establishing fixed wages within a three mile radius. The Spitalfields silk industry then needed to find cheaper labour in order to survive. Not far from east London was an increasing pool of unemployed, skilled textile workers – the former wool spinners and weavers of Essex. Thus began a migration of the industry from east London to Essex.

In fact, even in the early years of the C18 there is reference to silk throwing at the mill at Little Hallingbury (EHER 3651) which used water power to drive a copy of Lombe's machinery used in Derby. The mill was not used for long for this purpose and soon reverted back to corn milling.

Pigot's Directory of 1839 recorded that in Coggeshall "the woollen and clothing trade, and particularly the production of a superior kind of baize, designated 'Coggeshall Whites', formerly gave celebrity to this town: these branches are not now attended to; they have been superseded by the manufacture of silk, which for many years has been carried on to a considerable extent, and at present employs numerous hands."

The same edition also records three silk manufacturers and throwsters – William Beckwith of Back Lane, John Hall of Crouch Factory and Abbey Mills, and Westmacott, Goodson & Co of Gravel Mill. The wool cloth trade dated back to the C14, was third in size only to that at Colchester and Braintree & Bocking, and had all but ceased by 1815 when there was just a small production of horse cloth. Johnson and Rudkin, former woollen clothiers, began weaving silk in the town in 1816. Eventually Johnson continued production by himself and by 1827 was using a building called “Monkwell”, adjacent to the River Blackwater (NGR TL 8496 2235, EHCR 25126) for the production of silk cloth and also as a centre for teaching the manufacture of tambour lace. A number of other names are associated with silk in Coggeshall using former woollen cloth production premises, although there is now little evidence to help identify the sites - for example it is known that one such site was in Church Street and another in Back Lane (now Queen Street).

In 1818 the Coventry firm of Saywer and Hall set up business in Coggeshall, John Hall eventually running the business himself from 1827. He initially used Abbey Mill (EHER 8660) for throwing organzine and weaving ribbons (for which Coventry was a major centre of production). Hall moved production from Abbey Mill, which continued as a throwing mill until the end of the 1830s, when he built the Gravel Factory in 1827 (EHER 15837) for the production of ribbon and velvet. This mill was of three storeys, 130' x 24' and powered by an undershot water wheel for its 30 power-looms. Hall also used hand-loom weavers in Stoneham Street and for whom he built 14 cottages in Crouch Place. In 1838 Hall built the Orchard silk mill (EHER 14972) allowing him to sell the cottages in the adjacent Crouch Place (which were eventually demolished). This was a two-storey steam powered mill which had weaving on the top floor under sky-lights on 50 power-looms, with throwing and winding on the other floors. It was closed in 1877 having been run for the previous ten years or so by Stephen Brown and was sold to a seedsman, John King. Much of the site was destroyed by fire in 1920s, only the mill house, warehouse and engine house remain.

Colchester, formerly the major woollen cloth producing town and latterly a centre for clothiers, also embraced the new silk industry. In 1826, Stephen Brown built a steam powered throwing mill on a site adjacent to the River Colne in what is now St. Peter's Street (NGR TL 997 256). The main mill building was of red brick on four floors and covered an area of 81 ft by 39 ft, while there were also other four-storey buildings and a single-storey winding shed plus engine house and chimney. Weaving also took place here and there were up to 160 power-looms in the mill. The mill was lit by gas from 1827. Silk production ceased in 1879 and the site was adapted to use by a brewery for malting and storage until the First World War. The site has now been redeveloped and there are no extant remains of the mill.

Chelmsford's silk industry was initially an extension of Hall's Coggeshall business. As his business flourished he opened factories and depots in Tiptree, Inworth and Maldon, and he built not only the warehouse in Hall Street, Chelmsford in 1861 (EHER 15572) but also the housing in the street (which was named after him). When Hall's business collapsed in 1863, the Chelmsford site was closed and then sold to Courtaulds in 1865 who used it as a silk mill until 1893. In 1899 it was rented to Marconi and became his first radio factory.

Braintree and Bocking, along with Halstead became the centres of the Courtauld family silk business, but whereas they dominated Halstead and Bocking other manufacturers were also active in Braintree. In common with most of the Essex silk industry, that in Braintree had its roots in Spitalfields. Amongst the master weavers there was the firm of Walters, one of whom, Daniel, took over Pound End Mill in South Street (EHER 15836) in 1821-22 from Courtaulds who had built it in 1818. There was a four-horse mill powering the winding machines, with handlooms used for weaving. Weaving was also 'put out' to be undertaken in local cottages. In 1861 Walters built a new factory in Black Notley, but he had already bought the land on the south side of South Street opposite Pound End Mill where he began erecting New Mills (EHER 15098). It was built in two or three phases, being extended each time, during the 1860s. The Black Notley factory was dismantled and re-erected alongside New Mills in 1869 and itself was extended, while Pound End Mill became just a store. Weaving was undertaken on this site and outwork was able to cease, hence the distinctive fenestration. Jacquard looms were used here from the 1830s and around 1870 power looms were introduced; power-looms and Jacquard looms were built on site in the machine shop using castings made at the Rayne Foundry (EHER 15301). Walters' business went into liquidation in 1894. Meanwhile another Spitalfields textile family, the Warners, who can be traced back to the late C17 were building a prosperous business in east London. In May 1895 Warner and Sons took over New Mills from Walters. Power-loom weaving ceased, only to be re-introduced in 1918.

The woollen cloth trade in Essex was extensive but had all but totally ceased by the end of the eighteenth century. This primarily domestic industry was succeeded at the start of the nineteenth century by the silk industry, a major industry within certain market towns throughout the nineteenth century, which was in turn succeeded by the artificial silk industry (rayon) at the beginning of the twentieth century. The nineteenth century heyday of the silk industry, its use of former water powered corn mill sites and its industrial factory scale has meant that built evidence of the industry remains. The survival rate is, however, variable with some sites including the whole of the Braintree Mill (EHER 15833) and most of the Bocking (EHER 15835) and Halstead (EHER 9441) Mill sites having been demolished. In contrast however most sites do survive and are protected by listed building or conservation area status. Likewise, most of the weavers' cottages and workers' housing are also protected.

4. Architecture of Essex Mills

The architectural style of the water and steam mills in Essex is principally dictated by the age and functional use of the building. The majority of river mills across the county are simple timber-framed corn mills or former fulling mills, built to a vernacular style and using traditional locally sourced materials such as timber weatherboard and clay plain tiles. The same vernacular tradition is seen in the coastal tide mills, but less so in the C19 mills as the tradition becomes diluted by the effects of industrialisation and the expansion of the railway networks thus providing greater availability of non-local products and materials.

The mills of East Anglia adopt a similar architectural signature and although there are great variations in size, height and how they were positioned in relation to the mill stream or leat, many post-medieval river mills are characterised by their outward appearance of stark white or (rarely) blue washed weatherboarded elevations and red plain tile Mansard roofs. Typically the lower storey was built in brick to carry the weight of the building, its apparatus and to cope with the stresses imposed by the waterwheel. The Mansard roof was fashionable in domestic architecture during the C17 and C18 and its use continued in mills as its structure was well suited to accommodate the corn bins and the attic stage necessary for grain storage. Therefore many mills belonging to this period were built with a Mansard roof, and examples can be seen at Hartford End (EHER 37124) Abbey Mill (EHER 8660) and Alderford Mill (EHER 29113), however, there use was not absolute as contemporary common pitch plain tile roofs were erected at Codham (EHER 28239) and Pentlow (EHER 27882) mills to name just two. Due to the height of a Mansard roof and the use of the roof space for grain storage, the roofline was frequently interrupted by dormer windows. These windows, like one of the more characteristic features of the corn mills, the lucam, could take a multitude of roof forms from simple pitched gables as seen at Alderford (EHER 29113), catslides, flats or even as at Overshot Mill (EHER 28687) small Gambrel roofs. The lucam (a projecting enclosed hoist) could either be cantilevered out from the roof above or below the eaves line to the front or rear or alternatively oversail from a gable end. Typically lucams were weatherboarded and supported from below by braces, arched, straight or occasionally serpentine (see Wethersfield EHER 28226). During the next century the Mansard was almost abandoned all together in preference for the planer common pitched slated roofs synonymous with industrialised Victorian mills.

Due to the combustible nature of flour and cheaper and greater availability of brick there emerged during the C19 a general trend away from traditional building techniques and the use of timber-framing (which were more susceptible to extensive fire damage) toward the use of brick and slate. Similar developments also occurred in other industries prone to fire damage, where fire break walls, fire proof doors and jack arches became a safety feature common to many later C19 malhouses and granaries. Additionally the popularity of brickwork coincides with the repeal of the Brick Tax (1851) and mechanisation of brick making, two factors that had a profound effect on the cost of a previously expensive building materials. Of course there were exceptions, the C19 Littlebury Mill, Stanford Rivers (EHER 33349) and Hallingbury Mills (EHER 3651) were both timber-framed, while conversely two brick built mills at Hartford End-Camsix Mill (EHER 37124) and Pentlow Mill (EHER 27882) both date from the C18. The C19 brick and slate mills where generally larger and built with an

emphasis on height to accommodate the dressing machines and roller mills necessary to produce white flour (popular in the later C19) and to house the steam plant. Greys (Docwras) Mill (EHER 25409) and Wakes Colne Mill (EHER 32728) are good examples of large C19 water and steam powered brick built mills, while Kings Mill, Great Chesterford (EHER 15065), Parndon Mill (EHER 31724) and East Mills, Colchester (EHER 31171) represent a further development into huge factory-like steam-powered brick and slate roller flour mills. Stylistically the latter no longer resemble their antecedents, are functionally ambiguous in that they could easily be confused with a granary or a warehouse, but remain as monuments to the response by industry to capitalise on cheaper imported grain and road and rail infrastructures. The use of large multi-storey mills had been a characteristic of northern textile mills since the beginning of the C18 while the introduction of fire proofing, brick floors and cast-iron supports became a feature more common to mills of the later C18. Other notable developments which emerged during this period was the replacement of the timber beams with cast-iron joists, followed by complete iron-framed structures and by the later C19 steel-framed structures with curtain walling, no longer requiring load bearing external walls.

Whilst corn mills got larger and more industrialised they still broadly worked on the same gravity fed principles set out in the design of the traditional weatherboarded mills of the C18. In almost all examples, the typical river corn mill was built over three floors or three and a half floors if the attic stage is included. Each floor has a distinct function and is named accordingly e.g. Spout Floor, Stone Floor and Bin Floor. Working from the top and with the gravity fed process, the upper storey (2nd floor) including the attic space is the **Bin Floor**. This invariably contains a series of grain bins and hoppers flanking a raised axial stage or catwalk running the length of the building. The grain bins were manually filled with sacks of corn (wheat) or meal via either the external hoist or lucam or by an internal sack hoist. The grain from the bins is gravity fed via chutes to the millstones located on the **Stone Floor** below. The millstones are usually grouped like satellites around the upright shaft, although an alternative to the traditional layout, a linear arrangement appears to become more popular during the C19 with examples installed at Bulford Mill (EHER 29968), Wakes Colne Mill (EHER 32728) and the demolished Writtle Mill (EHER 40756). Auxiliary driven machinery for processing the meal such as bolters, screens or grindstones and more traditional apparatus, sack scales, meal compactors and millstone lifting and dressing tools would frequently be found on the stone floor. The meal from the stones is collected within the **tun** and passes again by gravity down chutes or spouts to be sacked on the ground or **Spout Floor**. Here the miller controls the grade of the meal by adjusting the speed of the stones and the distance between the runner and bed stones using **tentering gears**. The **hursting**, main stone drive (**wallower, spur wheel, upright shaft, stone nuts**) and essentially the pit wheel and waterwheel are within and controlled from the Spout Floor. Once sacked the meal can be raised through the body of the building via the sack hoist and stored within one of the many bins in the attic. If need be it can also be re-milled and pass through the whole procedure once again. Therefore, as built, most mills retain a simple legibility common to all. However, this simplicity can and is confused by technological developments, such as the introduction of roller milling and incorporation of flour silos, water tanks and steam plant. As the markets for white flour grew, roller mills were introduced into existing mills to work alongside the stones or replaced them. At Bulford Mill (EHER 29968) the miller retained the in-line

millstones and worked them in tandem with roller mills accommodated on a separate floor above. Alternatively the likes of Garrett (Hoe Mill), Meeson (Battlesbridge), Ridley (Felsted) and Marriage (Chelmsford) abandoned their river mills to establish new steam roller mills served by the railway network or a coastal location.

Essex does not possess examples of large multi-storey, multi-wheeled 'Satanic' industrial mills typical of the C19 textile industry and cotton manufacturers of northern England. Possibly the only mills of comparable stature are the textile (silk) mills, New Mills (EHER 15098) and Townsford Mill (EHER 26109) both built and worked by Courtauld and Warners in Braintree and Halstead, and Halls former silk mill, Abbey Mill (EHER 8660) in Coggeshall. Although these mills date from or were reworked during the C19 and took advantage of non-local building materials brought in by rail, generally they still followed the local vernacular style, using a timber-frame construction and colour washed horizontal weatherboarding typical of post-medieval watermills. The most distinctive architectural departure from this model, driven by function, was the use of continuous bands of glazing or weavers windows extending the length of the building and designed to illuminate the working floors and as textile mills, no requirement for a lucam or associated loading doors. Whilst New Mills (EHER 15098) and the smaller Pound End Mill (EHER 15836) were purpose built for textile manufacture and steam power the earlier Townsford (EHER 26109) and Abbey Mills (EHER 8660) were both initially water powered fulling or corn mills, later converted to silk and textile. This change is certainly evident in Abbey Mill which depicts a C19 adaptation to silk milling with the insertion of weavers windows and the subsequent addition of loading doors and millstones typical of a corn mill. The scale on which steam power was used varied considerably, mills such as New Mills were built with a huge centralised engine and boiler house delivering power to drive the line shafting and many looms, a handsome two-storey brick and slate engine house and stack shares the façade alongside the watermill at Baythorne End (EHER 29452), although the norm for many country watermills entailed the addition of a small unassuming brick engine and boiler house added out of sight to provide power when water levels were inadequate.

Specific process required specialised design. This is well attested in the development of steam powered gun-powder incorporation mills at Waltham Abbey Royal Gunpowder Factory (WARGPF). The uptake of steam power in preference to water power was slow due mainly to the additional risks of heat and fire, factors which could prove disastrous for a manufacturer of explosives and absent in water power. The use of the **edge runner** incorporating mill underdriven by a central waterwheel or alternatively a horse powered edge runner mill were the principal type of mill used from the late C17 through to the C19. The introduction of steam powered incorporation mills dates from 1857, shortly after the end of the Crimean War (1854-56) and as a response to advances in armaments technology and the requirements of greater amounts of powder for ever larger ordnance. These new brick built mills with Italianate styling and modern milling technology were far in advance of their simple timber framed predecessors. Reminiscent of textile mills and by use of polychromatic brickwork, contemporary Ordnance buildings at RSAF Enfield and Royal Arsenal Woolwich, the early incorporation mills consisted of a tall central engine house, flanked by a mechanics shop, incorporation mills within trapezium shaped bays and a boiler house and stack to the rear. The mills were powered by parallel drive shafts housed, as was common in textile mills since the turn of the

C19, in under floor drive-shaft alleys, a system with the advantage of removing the mill gearing from the powder-laden atmosphere of the mill rooms. Up to date fireproofing techniques were employed with their design, including the use of cast-iron pillars, compression members and fire proof roof structures capable of surviving minor 'blows'. By 1861 the symmetrical T shaped plan comprising two but later three mills either side of a central engine house, boiler house, stack and coal yard to the rear became the prototype for the subsequent steam powered mills at Waltham Abbey up until 1889. They adopted the same Italianate architectural treatment and perhaps reflect the arrangement of an earlier Rocket Factory built at the Royal Arsenal, Woolwich in 1814. The engine house originally contained a steam powered beam engine which drove the edge-runners (steel wheels) used to incorporate the gunpowder mixture into '**mill cake**'. Positioned either side of the beam engine were cast-iron flywheels connected to drive shafts, which in common with the earlier incorporating mills, ran within underground tunnels or 'shaft alleys'. The drive shafts were connected via a series of gears and clutches to upright shafts which in turn drove the incorporating mills. The internal dividing walls between the mill bays were brick built while external walls were lightweight wooden panels designed to direct the force of an explosion away and so protect the incorporating mills (Cocroft, 2000).

5. Priorities

The priorities are based on a comparative assessment of all known surviving watermills, steam mills and tide mills in the county. It considers those afforded statutory protection at present, those that may require a re-assessment or re-grading of their present designation and those that merit future protection/preservation through listing, conservation area status, addition to a local list or recognition within Local Development Frameworks.

River mills in common with windmills were and still are a familiar and important part of the Essex landscape. Although none of the early Domesday or manorial mills survive, in many cases their sites have evolved and continued in use to the present day. These historic sites and those charting the development of milling into the post-medieval and industrial ages retain significant potential for the archaeological investigation and study of mill sites, their architecture and technologies. While this report considers each sites in terms of its archaeological value, it mainly concentrates on the recording, assessment and recommendations of the extant built resource

The mills are broadly divided into two main sections, a) water powered mills including river and tide mills and b) steam powered mills. Each mill is assessed comparatively within its own group and graded in terms of its architectural, historic and technological significance. The priority grading ranges from

- * Sites of Local Significance (low)
- ** Sites of Regional/National Significance (med)
- *** Sites of National Significance (med-high)
- **** Sites of Major National/International Significance (high)

5.1 Sites of local significance (*) and low priority

As one would expect none of the mills in this category are listed buildings, although the historic and architectural importance of a number has been recognised through incorporation within a Conservation Area e.g. Barnards Mill, De Veres Mill and Earls Colne, Crape Mill). From this group of 17 sites, the majority, 13, are steam mills while just four are watermills. All are in residential or some form of commercial use, apart from two sites, Robinsbrooke and Stambridge Mills, which are either derelict or redundant, awaiting redevelopment. Those in a residential/commercial use have all been subjected to modernisation, unsympathetic alterations affecting original materials, spatial integrity and loss of milling technology. As such these sites are of local significance only, are low priority and do not warrant statutory protection. However, these buildings still contribute toward the character and heritage to their respected settlements/areas and should be recognised within future Local Development Documents (LDD). Where they fall within areas affected by large scale development (such as Thames Gateway or Stansted G2 etc) their importance should be considered as part of the Master Plan Development (MPD)

*/** Watermills of Local Significance only

EHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
8690	Pointwell Mill, Pointwell Lane, Coggeshall	None	Addition to local list and recognition in Local Development Document
8615	Langley Mill, Elms Road Greenstead Green	None	Addition to local list and recognition in Local Development Document
17826	Robinsbrooke Mill, Robinsbrooke Road, Coggeshall	None	Addition to local list and recognition in Local Development Document
2638	Crockleford Mill, Crockleford Hill, Ardleigh	None	Addition to local list and recognition in Local Development Document

*/** Steam Mills of Local Significance only

EHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
	De Veres Mill	Conservation Area	Addition to local list and recognition in Local Development Document
15063	Rayleigh Mill (Greens) Station Road, Fullbridge	None	Addition to local list and recognition in Local Development Document
40672	Stambridge Mill, Mill Road Stambridge	None	Addition to local list and recognition in Local Development Document

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40673	Bradfield Mill, Steam Mill Road, Bradfield	None	Addition to local list and recognition in Local Development Document
5122	Baker Street Steam Mill, Baker Street, Orsett	None	Addition to local list and recognition in Local Development Document
40675	Barnards Mill, South Street, Saffron Walden	Conservation Area	Addition to local list and recognition in Local Development Document
40702	Wendens Steam Mill Wendens Ambo	None	Addition to local list and recognition in Local Development Document
15105	Hatfield Heath Steam Mill Stortford Road, Hatfield Heath	None	Addition to local list and recognition in Local Development Document
15838	Earls Colne Crape Mill, Foundry Lane, Earls Colne	Conservation Area	Addition to local list and recognition in Local Development Document
40763	East Hanningford Steam Mill, The Tye, East Hanningfield	Conservation Area	Addition to local list and recognition in Local Development Document
40674	Great Clacton (Bromleys') Steam Mill, 355 Old Road	None	Addition to local list and recognition in Local Development Document
15065	Kings Mill, London Road, Great Chesterford	Conservation Area	Addition to local list and recognition in Local Development Document
40671	Meesons Steam Mill, Hawk Hill, Rettenden	Conservation Area	Addition to local list and recognition in Local Development Document

5.2 Sites of Regional/National Significance (**/***)

The majority of the mills in this category already have statutory protection through listing at Grade II and many are also included within Conservation Areas. From this group of 26 sites, 19 are post-medieval watermills while seven are Industrial Age steam mills. Only one (Belchamp Mill) of the 19 watermills and one (Chelmer Mill) of the six steam mills have not been converted to residential use, office use or for storage. All of the mills have been significantly affected by subsequent re-use and none retain any or very few original fixtures, fittings or technologies of note. The loss of associated buildings, unsympathetic accretions and in the case of the river mills, removal of water management structures and apparatus are additional factors affecting their overall significance. The exception is Chelmer Mill which remains as part of a modern flour mill (Marriages) complex and potentially still retains important original and/or later milling technologies.

/ Watermills of Regional/National Significance

EHF NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
28467	Borley Mill Borley Hall, Borley	Grade II	Maintain Current Status
40509	Belchamp Mill, Hall Rd, Belchamp Walter	Conservation Area	Addition to local list and recognition in Local Development Document
29452	Baythorne Mill, Baythorne End, Mill Road, Birdbrook	Grade II	Maintain Current Status
36493	Bran End Mill, The Broadway, Bran End	Grade II	Maintain Current Status
39094	Blue Mill, Blue Mill Lane Woodham Walter	Grade II	Maintain Current Status
31527	Barnes Mill, Mill View Road	Grade II Conservation Area	Maintain Current Status
28713	Chalkney Mill, Colchester Road, Earls Colne	Grade II	Maintain Current Status
30651	Croxtons Mill, Blasford Hill Little Waltham	Grade II	Maintain Current Status
2568	Cannock Mill, Old Heath Road, Colchester	Grade II	Maintain Current Status
15088	Dedham (Clovers) Mill, Mill Lane	Conservation Area	Addition to local list and recognition in Local Development Document
46090	Elmbridge Mill, Mill End, Little Easton	None	Addition to local list and recognition in Local Development Document
37138	Felsted (Abchill) Mill, Mill Road	Grade II	Maintain Current Status
25409	Greys (Docwra's) Mill, Kelvedon	Grade II Conservation Area	Maintain Current Status
29680	Hulls Mill, Hulls Mill Road, Great Maplestead	Grade II	Maintain Current Status
31579	Hylands Mill, Off Bekeswell Lane	Grade II	Maintain Current Status
15063	Langford Mill, Maldon Road	Conservation Area	Consider listing at Grade II

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31724	Little Parndon Mill, Parndon Mill Lane	Grade II	Maintain Current Status
35127	Olde Tide Mill, Chelmsford Road	Grade II Conservation Area	Maintain Current Status
33639	Roydon Mill	Grade II	Maintain Current Status

****/** Steam Mills of Regional/National Significance**

EHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
26703	Black (or Princesgate) Mill, Princes Road	Grade II	Maintain Current Status
37073	The Mill (Steam), Cock Green	Grade II	Maintain Current Status
15082	Chelmer Mill, Hoffman Way	None	Consider listing at Grade II Local Development Document
38283 *40720	Fullbridge Mill, Mill Lane, Fullbridge	Grade II Conservation Area	Maintain Current Status *Include 40720 in Local Development Document
15083	The Old Silk Mill, Hall Street	Grade II Conservation Area	Maintain Current Status
26195	North (Frost) Mill, Mill Chase, Halstead	Grade II Conservation Area	Maintain Current Status
34560	Phoenix Steam Mill, Station Road	Grade II Conservation Area	Maintain Current Status

5.3 Sites of National Significance (*)**

All of the mills in this category already enjoy statutory protection through listing at both Grade II and Grade II* with many also included within Conservation Areas. From this group of 19 sites, 16 are watermills, just three are steam mills and of the total, only four mills (Kings [Littlebury], Passingford, Littlebury [Stanford Rivers] and Shirburn) are not in residential or commercial use. As a group a number of factors set these buildings apart from those of the previous category. This may be the extent to which their technology, spatial layout, fixtures and fittings survives, as seen at Blue and Kings Mills (Littlebury), the age of the mills timber-framing with early examples at Wethersfield and Little Braxted, the mills architectural treatment (Hartford End, Pentlow and East Mills), their group value geographically and functionally, such as the textile and silk mills at Townsford, Pound and New Mills, their innovative design and construction (Wakes Colne Mill) or their potential for

technological survival (Shirburn and Passingford Mills). Most of these sites share group value with associated buildings, granaries, mill houses etc, they retain their character whether it be a traditional weatherboarded river mill or a vast brick and slate flour mill and in the main have not been blighted by unsympathetic accretions.

*** Watermills of National Significance

EHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
29020	Blue Mill, Wickham Hill, Witham	Grade II*	Maintain Current Status
27946	Bradford (Canes) Mill, Convent Hill	Grade II* Conservation Area	Maintain Current Status
37124	Hartford End (Camsix) Mill, Hartford End	Grade II*	Maintain Current Status
35636	Littlebury (Kings) Mill, Mill Lane	Grade II Conservation Area	Maintain Current Status
33349	Littlebury Mill, Off Romford Road	Grade II	Maintain Current Status
32482	Layer Mill Lane, Layer de la Haye	Grade II	Maintain Current Status
38918	Little Braxted Mill, Little Braxted Lane	Grade II	Maintain Current Status
15084	Moulsham Mill, Parkway Chelmsford	Grade II Conservation Area	Maintain Current Status
28687	Overshot Mill, Mill Lane, Colne Engaine	Grade II	Maintain Current Status
34059	Passingford Bridge Mill, Ongar Road	Grade II	Maintain Current Status Remain on BARR
27882	Pentlow Mill, Pentlow Lane	Grade II	Maintain Current Status
34614	Shirburn Mill, Mill Hill, Lawford	Grade II	Maintain Current Status
31618	Springfield Mill, Victoria Road Chelmsford	Grade II	Maintain Current Status
26109	Townsford Mill, Causeway, Halstead	Grade II* Conservation Area	Maintain Current Status

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32728	Wakes Colne Mill, Colchester Road	Grade II Conservation Area	Maintain Current Status
28226	Wethersfield Mill, Braintree Road, Wethersfield	Grade II	Maintain Current Status

*** Steam Mills of National Significance

EHHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
31171	East Mill, East Street Colchester	Grade II Conservation Area	Maintain Current Status
15098	New Mills, South Street, Braintree	Grade II Conservation Area	Maintain Current Status
15836	Pound End Mill, South Street, Braintree	Grade II Conservation Area	Maintain Current Status

5.4 Sites of Major National and International Significance (***/**)

This category includes the premier examples of both water and steam mills in the county. All are assessed as having major national or international significance based on the completeness of the mills and their technology, their architecture, historic association, group value or innovative design. All enjoy statutory protection through listing at Grade I, Grade II, Grade II* or as a scheduled monument, while many also lie within designated Conservation Areas. The group of 18 sites comprise 13 river mills, one tide mill, one water-powered press and three steam powered gunpowder mills. Conversion to residential or commercial use is not as prevalent within this group and as such their structural and technological integrity remains almost or completely intact. Examples thought to have high levels of preservation include the redundant but much neglected watermills at Codham and Spring Valley and following a recent internal inspection the remarkably complete but equally neglected Tilty Mill. All three of these mills have in the past or still appear on the Essex Historic Buildings at Risk Register. Where mills in this group have been redeveloped the schemes have been guided by the principal of retaining as much of the buildings character and milling technology, offset with the need to provide a habitable, domestic space. Easterford and Bulford Mills probably best demonstrate this sympathetic ideology, although the conversion scheme for Town Mill was arguably less successful. Abbey Mill in common with Fyfield Mill has been lovingly restored by its owners. They are both superb examples of what can be achieved through hard work and dedication and are regularly opened to the public. Alderford Mill is presently under restoration to bring it back to a full working condition while Fyfield Mill and Thorington Tide Mill have been fully restored and at present are the only two mills in county fully capable of milling by traditional methods. Thorington is the only working tide mill in the region and one of only a handful of working tide mills across the country and northern Europe. Whilst the conservation and restoration back to, or something approaching its original working condition is for many, the ultimate goal and accordingly survival of original structures, technologies and fittings is of the up-most importance, other criteria such as architecture, rarity and innovation

need to be considered when assessing significance. The importance of Bourne Mill is attested by its historic associations, ostentatious architectural treatment and duality of function, the latter remaining unparalleled on a local level with very few comparable examples nationwide. Other rarities include an intact beam engine, boiler and steam gear that survives at Beeleigh Mill and the exceptional group of steam powered gunpowder mills and the gunpowder press at the former Royal Gunpowder Mills in Waltham Abbey. The Group C mills at Waltham Abbey are particularly significant due to their innovative design which became the model for later incorporating mills and pioneered many important developments in the process. They are the first T plan steam-powered incorporating mill to survive on a national, international and most probably global level.

The level of designation in this category is recognition of the importance of these buildings on a national or international level. All are rightly protected and should continue to remain so. From the 12 mills that have not been significantly affected by conversion, seven (Alderford, Thorrington, Beeleigh, Bourne, C, D-F & E gunpowder mills) are in the ownership of local government, a heritage trust or form part of a major tourist attraction and accordingly their future looks assured. However, the five mills outside this group, including Abbey, Codham, Fyfield, Spring Valley and Tilty Mills are at most risk from residential schemes. This group should be maintained, conserved and cherished with proposals for residential re-use looked upon as the most inappropriate option and one that is only considered following exhaustive attempts to find a more sympathetic alternative.

*** /**** Watermills & Steam Mills of Major National Significance

EHHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
8660	Abbey Mill, Abbey Lane, Coggeshall	Grade I Conservation Area	Maintain Current Status
29113	Alderford Mill, Alderford Street, Sible Hedingham	Grade II* Conservation Area	Maintain Current Status
29968	Bulford Mill, Bulford Mill Lane, Cressing	Grade II	Consider re-grading to Grade II*
38244	Beeleigh Mill, Abbey Turning Maldon	Grade II* Conservation Area	Maintain Current Status
28239	Codham Mill, Codhams Lane, Wethersfield	Grade II	Internal inspection & poss. re-grading to II*
8243	Easterford (Rogers) Mill, Swan Street, Kelvedon	Grade II* Conservation Area	Maintain Current Status
32981	Fyfield Mill, Queen Street	Grade II	Consider re-grading to Grade II*

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3651	Hallingbury Mill, Old Mill Lane, Gaston Green	Grade II*	Maintain Current Status
30204	Stisted Mill, Kings Lane, Stisted	Grade II Conservation Area	Consider up-grading to Grade II*
34555	Spring Valley Mill, Spring Valley Lane	Grade II*	Maintain Current Status Remain on BARR
37114	Tilty Mill, Tilty	Grade II*	Maintain Current Status Remain on BARR
36671	Town Mill, Mill Lane	Grade II* Conservation Area	Maintain Current Status
34148, 34149 & 34151	Waltham Abbey Gunpowder Works (Group D, F & G) Incorporation Mills (L153, L145 & L148)	Grades II & II* Conservation Area	Maintain Current Status
34150	Waltham Abbey Gunpowder Works (Group E) Incorporation Mills (L149)	Grade II* Conservation Area	Maintain Current Status
3450	Waltham Abbey Gunpowder Works Press and Pump House (L103/L104)	SM Conservation Area	Maintain Current Status

**** Watermills and Steam Mills of International Significance

EHER NO.	SITE NAME	CURRENT STATUS	RECOMMENDED ACTION
31074	Bourne Mill, Bourne Road Colchester	Grade I	Maintain Current Status
34312	Thorrington Tide Mill, Brightlingsea Road	Grade II*	Maintain Current Status
34152	Waltham Abbey Gunpowder Works (Group C) Incorporation Mills (L157)	Grade I Conservation Area	Maintain Current Status

6. Designations

Of the 81 extant sites identified during the survey of water and steam mills 59 sites or 73% are listed while one is a scheduled monument. Of these 59 sites, three mills (5%) are Grade I, 14 mills or 23% are Grade II* and 42 mills or 71% are Grade II listed. Thirty-three mills or 40% of the total fall within a conservation area, 24 of the 33 are listed while nine are solely protected through conservation area status. As one mill site is also scheduled, from the total of 81 sites surveyed a considerable 69 mill sites or 85% of the surviving resource enjoys statutory protection through either listing, scheduling or conservation area designation, leaving only 12 sites or 14% without any form of statutory protection. Furthermore many related mill buildings or structures without a specific designation may also be protected by curtilage listing as a consequence of their association and/or proximity to a listed mill.

If designation is examined by building type then of the 51 watermills surveyed, 42 mills or 82% of the total are presently listed. As would be expected a high percentage (71%) are listed at Grade II, while a considerable number, equivalent to 24% or 10 sites, are listed at Grade II* and two sites at Grade I. Whilst the levels of designation is not as marked in steam mills, 14 of the 27 sites or 52% of those surveyed are listed, with 10 at Grade II, 3 at Grade II* and 1 at Grade I. All three tide mills are listed, 2 at Grade II and 1 at Grade II*.

Based on these figures it is clear that the current levels of listing and conservation area designation for watermills and steam mills is robust and in the main, sufficient. However taking into consideration the numbers which are now in residential or office use and the impact this has had upon the integrity of this finite resource, recommendations will be made for two new listings, four changes in current gradings and one proposal for conservation area designation. It also became apparent during fieldwork that many of the listed building descriptions are now out of date and no longer provide an accurate representation of the present structures. Most of the inaccuracies stem from modern alterations undertaken during or after conversion and include not just superficial changes to the exterior of the buildings but also the removal, relocation or alteration of significant components of milling technology.

6.1 Recommendations for listing

A little over 25% or 21 of the total sites surveyed during the project are not listed while 12 of that total are without any form of statutory protection (i.e. listing or conservation area). From the 21 unlisted water and steam mills only 2 mills, Chelmer Mill and Langford Mill stand out as potential candidates for listing.

Chelmer Mill (EHER 15082) along with the adjacent former Hoffmans Ball Bearing Works (EHER 40668) and the listed Marconi New Street Works (EHER 15671) form an important group of C19 and early C20 industrial buildings built within the former heart of industrial Chelmsford. The steam mill of c.1900 appears to survive in a remarkably unaltered condition with many of the features depicted on the original building plan and elevation drawings (ERO D/F 8/630) still present. In addition to group value and survival, Chelmer Mill and the adjacent Clerks Office were built to the designs of the notable Chelmsford and London based architect Fredrick Chancellor & Son. The quality of many of Chancellors commissions has already

been recognised through listing, including churches, almshouses, halls and numerous alterations or additions to ecclesiastical buildings, but few of his industrial buildings either survive or are listed. Chelmer Mill is one of only two mills in Essex designed and built by F. Chancellor & Sons and as such should be considered for listing at Grade II.

The other surviving Chancellor designed mill, **Langford Mill** (EHER 40154) should also be considered for listing at Grade II. It is unusual to find such a large late Victorian stone (as distinct from roller) mill in such good exterior preservation. Although its significance has already been compromised by the removal of its milling technology (a common occurrence in many listed watermills) the building has not suffered unduly from modern accretions and retains a distinct architectural integrity and legibility. It also forms part of a small group of associated historic industrial buildings and monuments in Langford, including Langford Mill House, Mill Cottage and the abandoned Langford Cut.

6.2 Recommendations for re-grading

As a result of new information gathered during the project, particularly with regard to inaccuracies in existing list descriptions and the comparative importance of surviving technologies, recommendations will be made for four mill sites, currently listed Grade II, to be re-graded to Grade II*. Of the four proposed sites, Bulford Mill (EHER 29968) and Stisted Mill (EHER 30204) are presently in residential use, Fyfield Mill (EHER 32981) has been restored back to a working condition while Codham Mill (EHER 28239) is redundant. All four mills rate alongside the top 15 mills in the county assessed as being of major national or international importance.

Bulford Mill (EHER 29968) is one of a handful of watermills in Essex that still retain a significant amount of its milling technology, fixtures, fittings and spatial integrity. The turbine, in-line drive, stones, mill office and many auxiliary milling machines, chutes and other milling paraphernalia, commonly lost during conversion, remain. Associated buildings such as the attached engine house survives as does an original millers dray once in use at the mill. In addition to this remarkable preservation of mill and contents, Bulford Mill lies central to a group of associated mill and farm buildings, including a listed mill house, a granary, stables, cart lodge and barn and within an increasing rare historic landscape incorporating the watercourse, its mill marsh, leat bank and tenterfields, the latter associated with its original use as a fulling mill. Taking into account the inaccurate list description which should attribute an C18 build date to the mill, Bulford survives as one of the most important mills in the county and should accordingly be re-graded to Grade II*.

Codham Mill (EHER 28239) still remains an unknown factor due to the reticence of the present owner to allow access into the property. However based on recent conversations with the owner, the general lack of attention and alterations to the mill and mill house it seems likely that the wooden waterwheel, iron pit wheel with wooden cogs, wooden main shaft and 3 pairs of stones, reported by Booker in 1972 still remain, albeit in a poor condition. Codham Mill is one of only a few mills in Essex that remain unconverted (residential or commercial) and still holds the potential to operate once more under its own (water) power. It therefore survives as one of the most important timber-framed watermills in the county and therefore to bring it in line

with mills of comparable survival, such as Spring Valley and Tilty Mills, it should be re-graded to Grade II*.

Stisted Mill (EHER 30204) is unique as it survives as the only watermill in Essex and probably one of a very few in the region with overdriven stones. As the mill still retains its main mill gearing from waterwheel to stones and features such as a working sack-hoist, it is one of only a handful of mills in the county that retain the ability to operate once more by water or steam power. Given the survival of its milling apparatus and the unusual arrangement of overdriven stones Stisted Mill should be upgraded to Grade II* to bring it in line with other mills of equivalent technological and architectural integrity.

Fyfield Mill (EHER 32981) is a very good example of a well maintained and lovingly restored watermill that retains many unusual and increasingly rare attributes. It is one of the smallest watermills in the region and following years of sympathetic restoration retains the only working turbine in the East of England. The turbine, which is a rare example of the undershot type, stone drive and a single set of stones are all fully functional and as such Fyfield is one of only 3 watermills in Essex that are at present operational. Fyfield Mill has been identified as one of the most significant surviving watermills in Essex which merits higher levels of protection through re-grading Grade II*.

6.3 Recommendations for Conservation Area extension

Thirty-three mills or 40% of the total mills lie within a conservation area. Twenty-four of the 33 are listed while 9 are protected through conservation area status only. Nine of the 21 unlisted mills lie in conservation areas, leaving just 12 sites without listed building or conservation area designation. Only one site from this group of 9 undesignated sites, has the required architectural and historical merit, and a location on the fringe of an existing conservation area, that could readily facilitate its inclusion

Bromleys Steam Mill (EHER 40674) is one of 27 extant steam mills identified during the survey and one of 3 in the Tendring District. Although it has been internally altered and the engine house has been removed (as is common) the building still retains its architectural character and legibility. It has demonstrable associations with the development of the resort of Clacton-on-Sea during the C19 and the work and success of local entrepreneur Henry Bromley. The steam mill along with the adjacent C17 or C18 plastered mill house share group value and together contribute to the historic character and street scene of Old Road. To insure against unsympathetic alteration or indiscriminate demolition of this group of locally important buildings, a slight extension of the Great Clacton Conservation Area along Old Road is proposed to incorporate both buildings (see below).



Proposed extension to the Great Clacton Conservation Area

6.4 Listed Building Descriptions

Whilst it may be anticipated that many small discrepancies will exist between the existing statutory listed building descriptions and the present condition of the buildings and that most of these inaccuracies relate to superficial changes to the exterior of the buildings, i.e. changes in fenestration, cladding and roofing materials, a number of sites have been identified where either significant modern alterations have been carried since the listing survey or that the original listing was incorrect. The more significant examples include:

- **Blue Mills** (EHER 29020) Blue mills is clearly a complicated structure built over a number of chronological phases. The timber framing and earlier roof structure are typical of the C18 while parts of the extant mill machinery can be dated to the later C18. The suggested C19 construction date should be re-examined.
- **Bulford Mill** (EHER 29968) A fulling mill is recorded at Bulford in 1780 and again in 1804. It was converted to corn by 1813 and remained so until 1947. Additionally the red brick walls and an internal post and beam timber structure that supports the floors show many features typical of the C18. The suggested C19 date in the listing is therefore inaccurate
- **Old Hylands Mill** (EHER 31579) Documentary and cartographic evidence clearly shows that Old Hylands Mill, referred to in the list description as C18,

was built in the later C19, between 1874 and 1897, the compilation dates for the 1st and 2nd edition OS maps.

- **Felsted Mill** (EHER 37138) The iron mill wheel and 4 pairs of stones mentioned in the list description are no longer extant.
- **Bourne Mill** (EHER 31074) The reference to the '*The interior, which has been converted into a dwelling house, retains the mill machinery - 3 great grindstones*' is no longer accurate as the stones and all evidence of its latter conversion to residential use have been removed.
- **Olde Tide Mill** (EHER 35127) The list description for Olde Mill tide mill in fact describes the granary and not the tide mill, which has been rebuilt.
- **New Mills** (EHER 15098) Attributes New Mills to George Courtauld in 1810. They were in fact built by Daniel Walters in 1859.
- Both list descriptions for **Fringringhoe Tide Mill** (EHER 15143) and **Town Mill** (EHER 36671) are out of date as they describe the mills prior to their residential conversion.

6.5 Buildings at Risk

The Historic Buildings at Risk Register is produced annually by Essex County Council working with local planning authorities and English Heritage. It is produced in line with governmental expectations regarding the positive management of the historic environment and contains details of listed (and curtilage) buildings known or vulnerable to be 'at risk' through neglect or decay. It is clear from the field visits made to all 59 of the listed mills, that most are weather-tight, well maintained and generally in good order. While the repair and upkeep of these buildings can be place significant pressures on the owners, those mills on the BARR are eligible for financial assistance to undertake repairs, whilst some monies are also available from Government through English Heritage, but these are mainly directed toward Grade II* and Grade I buildings only. The current VAT laws do not encourage repair as VAT is reclaimable on materials for new build only and not on materials used to repair or restore existing buildings. A change in this law would certainly help and maybe encourage owners of listed buildings at risk to maintain and repair their buildings.

Only seven sites or 12% of all the listed mills have cause for concern over their present condition and maintenance. Four sites, namely Passingford Mill (EHER 34059), Spring Valley Mill (EHER 34555), Tilty Mill (EHER 37114) and the Bridge at Hartford End Mill (EHER 37126) are presently on the Buildings at Risk Register and following inspection should remain so. However, the condition of three sites, Codham Mill (EHER 28239), Phoenix Steam Mill (EHER 34560) and Layer Mill (EHER 32482) are of concern.

Whilst Codham Mill (EHER 28239) has recently been removed from the register after the owner addressed the problem of invasive ivy, the mill still appears unkempt, the weatherboarding needs painting while some of the mill house windows and particularly the two mill house brick stacks need urgent repair. Structural movement

and brick cracking is evident across the southern gable wall, particularly across the upper floors of Phoenix Mill (EHER 34560), while it is questionable whether the Mansard roof at Layer Mill (EHER 32482) is fully weathertight as it has been covered with a waterproof paint. Such treatments are short term and undoubtedly the roof will require more thorough attention in the near future. All three sites need to be carefully monitored in the future with a view to encouraging the owners to carry out the appropriate repairs. If their condition continues to deteriorate then they should be added to the at risk register.

DISTRICT	Watermills	Steam Mills	Tide Mills	District Total
Braintree	21	5	/	26
Brentwood	/	1	/	1
Chelmsford	5	4	/	9
Colchester	6	1	1	8
Epping	5	3	/	8
Harlow	1	/	/	1
Maldon	3	3	/	6
Rochford	/	1	1	2
Tendring	2	3	1	6
Thurrock	/	1	/	1
Uttlesford	8	5	/	13
TOTAL	51	27	3	81

Table 1: Distribution by District and type

7. Discussion

Through on-site assessments of the buildings/sites external character, features, architecture and in some cases technology, an appraisal of their relative historic, architectural and group significance has been completed. The survey assessed some 81 mill sites from all over the county. The vast majority, 51 sites, are conventional watermills built near to the many streams, rivers and canals that cross the county. 27 sites are purpose built steam mills (excluding watermill sites with auxiliary steam power) and 3 sites are tide mills (see Table 1 and Figs. I & II). Fifty-nine sites already enjoy statutory protection through listing, one is a scheduled monument, while 33 lie within a designated Conservation Area. Notably designation is not as prevalent in the steam mills as of the 27 survivors only 14 are listed. A significant 68 sites, comprising 59 listed mills and 9 unlisted mills within conservation areas, or 84% of the total remaining mills, are protected through listed building or conservation area status. Based on these figures it is clear that the current levels of statutory protection covering watermills, steam mills and tide mills is robust and in the main, sufficient. However, based on the assessments made during the field survey two sites, Chelmer Mill (EHER 15082) and Langford Mill (EHER 40154), both built to designs by Fredric Chancellor, are recommended for listing at Grade II, while four sites including Bulford Mill (EHER 29968), Stisted Mill (EHER 30204), Fyfield Mill (EHER 32981) and Codham Mill (EHER 28239) should be considered for re-grading to Grade II* and one currently undesignated site Bromleys Mill (EHER 40674) and its adjacent Mill House should be incorporated into the existing Great Clacton conservation area (see sections 6.1-6.3).

Whilst it is clear that a significant percentage of the remaining mills enjoy statutory protection many of these buildings now only retain little in the way of original fixtures and fittings or milling apparatus. It was common that milling machinery was sold off after the mill closed and that the buildings re-use, whether it be for commercial, residential or both, inevitably resulted in the removal of the milling technology and subdivision of internal spaces. **Table 2.** shows the distribution by district and mill re-use as recorded by the survey during 2007-2008. The fields recorded represent Residential conversion, Commercial/business use including office, light industrial and Other comprising restored, unused or derelict. It shows that 39 mills or 48% of the 81 sites in the survey are now in residential use and that 22 mills or 27% of the total have been converted to business (essentially office) use. Twenty mills or 25% fall into the category of Other i.e. restored, in the process of restoration, unused or derelict. Of these 20 sites 9 or 11% lie un-used or in a derelict condition, four form part of the tourist attractions at the Waltham Abbey Gunpowder Mills, while seven sites or 8%, including Abbey (EHER 8660), Alderford (EHER 29113), Beeleigh (EHER 38244), Blue (EHER 29020), Bourne (EHER 31074), Fyfield (EHER 32981) and Thorrington (EHER 34312) have been conserved or are in the process of conservation back to operational use. From these 7 mills, only 3 (Thorrington, Abbey and Fyfield Mills) still have enough technology in place to mill corn under their own power.

DISTRICT	Residential	Commercial	Other	District Total
Braintree	16	5	5	26
Brentwood	1	/	/	1
Chelmsford	2	7	/	9
Colchester	6	1	1	8
Epping	1	/	7	8
Harlow	/	1	/	1
Maldon	2	3	1	6
Rochford	/	1	1	2
Tendring	1	2	3	6
Thurrock	1	/	/	1
Uttlesford	9	2	2	13
TOTAL	39	22	20	81

Table 2. Current use (2007-2008) by District

Although a small number of mills were converted as early as the late C19, and an increasing number during the interwar period, the pace of re-use quickens following the end of the Second World War. Whilst demolition of dis-used or derelict mill buildings was commonplace, particularly post war, with over 45 watermills demolished across Essex during the C20 alone, the increased move toward residential re-use, particularly during the second half of the C20 is noticeable if the records from John Bookers survey of watermills in early 1970s is contrasted against the figures shown in **Table 2.** While Bookers survey concentrated on watermills and omitted many of the steam mills, particularly those that were undesignated, comparisons between the two data sets can still be made if analysed by percentage. In **Table 3.** the mills are grouped under three categories, those which have been converted to residential use, those in a commercial i.e. light industrial or farm use and those that are disused and/or derelict. The figures show that just 11 or 19.5% of

the 56 surveyed were in residential use during the early 1970s, 22 or 39.5% were in commercial use while 23 or a considerable 41% were either disused and/or derelict.

DISTRICT	Surveyed	Residential	Commercial/Working	Other
Braintree	18	6	3	9
Brentwood	1	/	1	/
Chelmsford	4	/	2	2
Colchester	5	2	2	1
Epping	3	/	2	1
Harlow	/	/	/	/
Maldon	6	1	3	2
Rochford	2	/	1	1
Tendring	6	/	4	2
Thurrock	/	/	/	/
Uttlesford	11	2	4	5
TOTAL	56	11	22	23

Table 3. Mill use during the early 1970s

The loss of the many disused watermills through demolition was the main concern highlighted by Hervey Benham in *'Some Essex Watermills'* during the 1970s. Fortunately demolition no longer features as the main threat to surviving watermills, as most are in some form of use with only one semi-collapsed example under any threat. This report has also shown that Benhams initial concerns over planners antipathy towards mills and unwillingness to consider alternative uses did change, as today the vast majority of the surviving watermills are in either residential or business use. Since the 1970s residential conversion has more than doubled from 19% to 48%, while mills that were derelict or unused have significantly fallen from 41% to just 11%. The reversal in these figures speak for themselves, with many disused mills converted into dwellings or offices. Whilst re-use is always preferable to demolition or chronic dereliction, proposed schemes for the conversion or re-use of this remaining 11% should be fully informed at an early stage, through the use of historic building impact assessments to ensure that future design proposals are sympathetic to the fabric of the building, its surviving technological and spatial integrity.

Benham was correct in his assumption that *'In twenty years from now the watermills, at present regarded with such indifference, will be recognised as one of the most fascinating and rewarding features of our heritage'*. Fortunately attitudes towards these buildings and the historic environment has also changed for the good and demolition has been replaced by conservation. Encouragingly the mills identified by Benham as deserving special priority i.e. Thorington, Abbey, Town, Great Bardfield, Easterford, Codham, Spring Valley and Bourne Mills, are pretty much the same as those singled out as the most important Essex Mills in this report, although Great Bardfield Mill has since been destroyed through fire and two of the mills, Town and Easterford have been converted as part of a residential schemes.

Although listing does provide protection against inappropriate alteration, there are many examples, particularly those which have been in use as dwellings for a long period, which have been subjected to alterations that dilute the character of the buildings e.g. removal of original technology or use of inappropriate materials. For a

small number of listed mills re-use and subsequent 'maintenance' has so significantly altered their integrity and character that they are no more historically or architecturally significant than their unlisted counterparts. It is therefore critical that the statutory protection for the remaining listed mills is upheld and adhered to, that their character is not eroded through 'gradual' change and that the best examples remain in their present original condition and are not compromised by unsympathetic proposals for residential or other use.

However, finding an alternative to commercial or residential use which does not impact upon the integrity of those few intact examples that survive is not straight forward. Whilst in a ideal world all of the remaining unaltered mills could be restored and brought back to a working condition, the financial investment on part of the owner without significant public subsidy is both too onerous in the first part and without long term financial reward i.e. watermills as museums or curios that open for a few days a year are far less an attractive proposition than conversion. There is no easy solution and the arguments between conservation and preservation through re-use, as the only alternative to chronic dereliction, will continue. As some of the best surviving watermills and windmills in Essex are those owned and restored by the County Council or the National Trust it may be suggested that to secure the future of the likes of Codham, Spring Valley or Tilty Mills that the onus is placed on organisations such as English Heritage, Local Government or Independent Trusts to take a custodial role and save for the nation, these important, irreplaceable buildings.

While watermills can be protected through planning system, can be conserved or taken into trusts, they are increasingly facing a new and potentially much more catastrophic threat. Global Warming and its effects on weather patterns causing extremes in weather, increases in rainfall, flooding and potential sea level rises will all have a significant impact upon watermills across the region. Damage to the buildings caused by floodwaters, the erosion of river banks and river courses plus the disincentive to own, maintain and insure a building liable to regular and prolonged bouts of flooding are just a few of the potential challenges the owners and custodians of river and tide mills will have to face in the future.

8. Conclusions

From as far back as the Roman period the East Anglian region has been an important agricultural area, and one frequently described as the bread basket of the nation. From the C15 various English Corn Laws were introduced to help maintain domestic supplies of grain, curb imports and stabilize the price at a profitable level. The effect was to raise bread prices and give home grain producers substantial financial advantages over foreign competitors. This virtual monopoly, the growth of industrialisation and the buoyant agrarian economy at the turn of the C18 resulted in a period of investment by landlords with the construction or renovation of new watermills. This investment and growth coincides with a period when the local cloth industry was in decline and the demand for bread to feed the burgeoning towns had increased.

The reasons for the decline in the Essex woollen trade was related to the particular characteristics of the industry. It was too dependent upon a single product (bays and says) which had a very limited and vulnerable market, the structure of the trade,

using scattered, waged labour, had many inherent weaknesses, it was slow to take up mechanisation and its reticence to diversify was too little, too late. A extract from an estate surveyors report of Bourne Mill dated 1797-8 ably demonstrates this decline: *'The mill is for the sole purpose of fulling baize, flannel etc, the demand for which is at present very small.....if trade should continue bad, it may be of advantage to the Estate to put a pair of low millstones to grind corn, in the mill'*. Unsurprisingly many of these underworked or redundant fulling mills, themselves adapted from corn mills as part of the growth in the textile industry during in the C17, were converted back to mill flour. **Figure I.** shows the distribution of river and tide mills across Essex and particularly the geographic variation between fulling and corn mills, with concentrations of fulling mills built or adapted in the woollen industry heartland between Braintree and Colchester in north and north east Essex. This is also the case with the woollen industries successor, the silk industry, which developed during the C19 with centres at Coggeshall, Braintree and Halstead. Accordingly fewer fulling mills or silk throwing mills are recorded in the west of the county which appears to be more arable focused.

The mid C19 again saw a prosperous 'golden' period within agriculture, with landowners modernising their farms and adopting industrial methods. This confidence built on enhanced arable production brought about by improvements in crop rotation, use of fertilisers and better land drainage, plus larger markets due to increases in population growth, together provided the impetus for landowners to improve and modernise their mills once more. Many of the older timber water wheels and stone drives were ripped out, such was the case with Town Mill in Stebbing, and replaced with more efficient and stronger iron wheels, cast-iron stone drives and auxiliary steam power.

The rise of steam power was undoubtedly a factor, but it was not the sole reason for the demise of the traditional country watermill. By the latter part of the C19 the steam engine began to replace waterwheels in larger industrial mills but within rural mills waterwheels continued to be used supplemented by a steam or later oil engine. The repeal of the Corn Laws in 1846 with the removal of 'protectionism' effectively opened up the markets allowing cheaper grain and flour to be imported from Europe and following the end of the American Civil War (1861-65), from the prairies of North America. Fierce competition for the miller came in the shape of large industrial flour mills built in coastal locations which took advantage of and monopolised the cheaper imported grain, while at the same time steam mills were built along or near to the developing railway networks. **Figure II.** shows the locations of all the steam mills recorded in the survey and clearly demonstrates the move toward the coast, with steam mills at Maldon, Battlesbridge and Stambridge or the railway network with steam mills built along the major rail arteries between London, Cambridge and Ipswich and many branch lines. Typically these industrialised steam flour mills were more automated, using integrated grain conveyor systems, silo storage and roller mills, a huge technological leap introduced from Hungary in the 1870s. The abstraction of water from rivers and streams to supply the booming industries, land drainage resulting in rapid run-off and flooding and the increased requirements for drinking water and sanitary use placed great demands on water reserves and in many cases mills were robbed of sufficient water or their watercourses disappeared completely. On top of this the agricultural depression of the later C19 and early C20 and the outcome of two world wars effectively finished off small rural watermills,

many were forced to close down or survive by diversifying into grist mills or animal feed. By the 1950s only a handful of watermills remained in operational use, the subsequent decades saw a continued decline in use, a period of increased demolition of redundant buildings with the loss of the likes of Wickham, Sandford and Writtle Mills (see Appendix II) and latterly re-use in a residential or commercial context. Today there are no commercially operated privately owned watermills in the county and only two steam mills (Marriages Chelmer Mill and Greens Rayleigh Mill) remain part of an on-going milling business.

Whilst the majority of the watermills and a number of the steam mills enjoy statutory protection, just under two-thirds of those visited were not inspected internally. As has already been touched upon, many of the listed building descriptions are no longer accurate, therefore when the opportunity arises all those sites identified should be internally assessed so that appropriate future management strategies, based on a fully informed appraisal of significance, can be put in place.

While this report details all the known extant water and steam powered corn, flour, textile and gunpowder mills in Essex, there remains a considerable number of known mill sites that no longer or partially survive. Many such sites still retain associated buildings or structures (mill house or wheel pits) water management systems (sluices and weirs) and water courses (leats, back channels, mill pools) that merit study and assessment in their own right. Whilst many historic mill houses and associated structures (through curtilage) are listed, much of what survives remains unclear, un-assessed and outside statutory protection. A future study of demolished watermill sites would address this gap and complement this survey to provide a fuller assessment of watermills and their sites in the county. Although not comprehensive, a record of many mill sites from Domesday Mills through to those that stood within living memory is provided in Appendix II.

9. Recommended Future Policy

The Council will seek sympathetic schemes of re-use for those buildings and structures associated with the heritage of the District/Borough that are recognised as being of local, regional, national and/or international significance. Proposals that fail to appreciate the special character of a building/ or building complex or that result in the loss of a sites historic integrity will not normally be accepted. In order to understand the original purpose/function and evolution of a structure or structures the District may require an impact assessment to be submitted as a part of the planning application. Where the history and significance of a site is known the District may require a detailed building record to be made prior to conversion or alteration taking place.

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APPENDIX I: Glossary of Terms

Bed stone	The bottom stationary stone of a pair of mil stones
Brayer or Bray	Beam supporting one end of the <i>bridgetree</i> and forming part of the leverage system of the tentering gear
Breastshot	Type of waterwheel designed to receive the water at or just above the height of the axle.
Bridgetree	Beam supporting the stone spindle
Cog pit	Area partially enclosing the pit wheel
Connecting rod	Shaft linking the crankshaft to a piston or rocker
Compass arm wheel	Wooden wheel with arms (spokes) slotted through the axle
Corning	Process whereby ' <i>mill cake</i> ' or pressed gunpowder is reduced to grains by use of a corning sieve or alternatively used to describe the process of granulation using rollers
Crown wheel	Cogged wheel on the upright shaft- to turn the drive by 90 degrees (vertical to horizontal)
Crankshaft	'Cranked' shaft used to convert linear force into rotational force
Damsel	Three or four sided spindle which agitates the shoe
Disengagement Jacks	See stone nut jack
Double shut	A system of two gates controlling through-put of water to the waterwheel
Edge-runner	Vertically mounted millstone or runner
Floats	The paddles which stick out from the rim of the waterwheel
Flywheel	Wheel attached to a revolving shaft used to regulate motion or accumulate power
Foot bearing	Bearing taking the weight of the upright shaft or spindle
French burr	Quartz stone pieces used to construct millstones. Often used for grinding wheat
Great spur wheel	The main driving wheel for the millstones, mounted on the upright shaft
Headrace	The stretch of leat feeding into the wheel pit
High breast shot	Type of waterwheel designed to receive the water above the height of the axle but not above the full height of the wheel
Hopper	Wooden funnel supported by the horse used to guide the grain into the shoe
Horse	Timber structure supporting the shoe and hopper
Hursting	Strong frame supporting the weight of the millstones above
Incorporation (mill)	Term used to describe the mixing of ingredients of gunpowder which may be achieved by the use of a pestle and mortar, ball mills, <i>edge runners</i> and stamp mills.
Layshaft	Secondary shaft engaging with the crown wheel to provide drive to auxiliary machinery and the sack hoist
Leat	Water channel usually man made diverting water from the main watercourse to the mill
Line shaft	A shaft used to transmit power from one area to another

Lucam	Dormer like projection from the roof structure allowing external loading of grain into the bins at the top of the mill
Mill cake	Term given to powder at the end of incorporation
Pellet powder	Pressed powder used in large bore guns and mining charges
Pentrough or Penstock	A tank or trough holding and directing water to an overshot wheel
Pit wheel	Large toothed wheel on the waterwheel shaft, driving the wallower
Pitch back	Similar to an overshot wheel designed to receive water above the full height of the wheel but along the rear of the wheel to turn the wheel back or anti-clockwise.
Runner stone	Upper driven stone
Sack hoist	Mechanism allowing sacks to be raised by chain through the mill
Shoe	Sloping trough which guide the grain into the eye of the runner stone
Sole board	Flat plate or boarding covering the waterwheel between the floats/paddles, to prevent water running through the wheel.
Sluice	Vertically mounted board or gate used to control the amount of water to the waterwheel
Spouts	Wooden ducts or chutes delivering the meal from the tuns
Starts	Short arms protruding from the waterwheel which support the floats
Stone furniture	The mechanism which controls the flow of grain to the stones, including the horse, hopper and shoe
Stone nut	A small gear driving the stone spindle and millstones from the great spur wheel
Stone nut jack	Mechanism to raise the stone nut to disconnect the nut from the great spur wheel and therefore drive to the millstones
Stone spindle	Upright shaft carrying the stone nut and driving the runner stone
Tentering gear	The system to control the fineness of the flour by altering the gap between the stones
Tun/Vat	Wooden casing enclosing the millstones
Twist pegs	Knob which alters the angle of the shoe and regulates the rate of grain fed to the stones
Undershot	Type of waterwheel designed to receive water well below the axle height
Upright shaft	Main vertical drive shaft taking the power from the pitwheel via the wallower
Wallower	Bevelled gear on the upright shaft engaging with the pit wheel
Waterwheel	Vertically mounted on the horizontal drive shaft or axle and powered by the flow of water

APPENDIX II: Demolished Water and Steam Mills.

References to demolished water and steam mills encountered during the project.
Approximate demolition dates shown in brackets

BRAINTREE

Mills demolished/burnt down during the C20	Mills demolished in the C19
9374 Blackwater Mill (1953)	46084 Ashen Mill (1870s)
Blyth Mill (1971)	Chipping Hill (1887)
Box Mill (1926)	Halstead Paper Mill (1889)
Black Notley (- 1939)	9476 Pebmarsh Silk Mill (1894)
15833 Braintree Mill	46083 Liston Mill (1887)
29421 Great Bardfield Mill (2000 +)	15837 Gravel Mill (Coggeshall)
46080 Great Henny Mill (1910 +)	46096 Megs Mill (Braintree) (1843 +)
Colneford Mill	
46091 Rye Mill	Others
6451 Rayne Mill (1908)	14972 Orchard Mill (Coggeshall)
15109 Straits Mill (1973 +)	8691 Feering Mill
Newlands Manor steam mill (1930)	18249 Castle Hedingham Mill
14067 Newlands Manor Watermill (1948)	Dairy Hill Mill (Terling)
14972 Orchard Mill	18473 Earls Colne Mill (Domesday)
15834 Panfield Lane Mill	9295 Gestingthorpe (Domesday)
Terling Mill	6112 Hatfield Peverel Mill (Domesday)
46092 West Mill (Coggeshall) (1945 +)	8070 Rivenhall (Roman)
White Notley Mill (1907 +)	6485 Shalford
Whites Mill (1917)	1598 Sturmer (Domesday)
	14046 Howbridge Mill (Witham)
	46095 Stonebridge Hill Mill

BRENTWOOD

19248 Kelvedon Hatch Mill (Domesday)

CHELMSFORD

Mills demolished/burnt down during the C20	Mills demolished in the C18 & C19
40756 Writtle Mill (2000 +)	Pengy Mill
46117 Broomfield Mill (1918 +)	46110 Langleys Mill (Gt Waltham)
Boreham Mill (1930s)	Great Newarks Mill
Bishops Hall Mill (1930)	46114 Little Baddow (Johnsons) Mill (1875 +)
Hoe Mill (1924)	
46111 Howe St Mill (1928)	Others
Little Waltham Mill (c.1900)	1163 Pleshey Castle Mill
	46117 Margaretting Mill
46113 Sandford Mill (1945 +)	
Rainsford End Skin & Oil Mill (1939)	
46109	
40441 Roxwell Mill (2000 +)	
46116 Husketts (Paper) Mill (1905)	
40756 Townfield Steam Mill (1969)	

COLCHESTER

Mills demolished/burnt down during the C20

46098	Argents or Newbridge Mill (1960)
46100	Ford Street Mill (1920-30)
11766	Fulling Mill (Boggis) (1928)
46099	Lower Mill (1903)
	Middle Mill (Castle Park) (1950-60)
46102	Wormingford Mill (1929)
2730	Boxted Mill (1925)
46087	Langham Mill (1930s)
46098	Newbridge Mill (W. Bergholt)

Others

11782	Spring Lane Lexden
9160	Mount Bures (Domesday)

Mills demolished in the C18 & C19

Cooks Hall Mill (1873)
Distillery Mill (1896)
Oil Mill (S. Chaplin) (1898)
Stanway Fulling Mill (1800 +)
Birch Fulling Mill (1800 +)
Bavesbrook Fulling Mill (1837 +)
Mersea Stroud Tide Mill (1769)
Hythe Tide Mill (1707-77)
North Mill (1768)
Browns Mill

EPPING

Mills demolished during the C19-C20

46107	Sheering Mill (1897 +)		Others
3842-4	Waltham Abbey Mills (1907 +)	4410	Rookwood Hall Mill
	Sewardstone Mill (late C19)	4013	Woolston Hall Mill
			Curtis Mill

HARLOW

Mills demolished/burnt down during the C20

46108	Latton Mill (1920-39)		Others
31622	Harlow Mill	3784	Nettleswell Mill
40709	Burnt Mill		

MALDON

Mills demolished/burnt down during the C20

46120	Great Braxted Mill (1930s)		Others
40232	Heybridge Tide Mill (1955)	7943	Lawling Mill (Domesday)
40099	Hoe Mill (1914)		
46119	Wickham Mill (1975)		
46118	Langford Mill		

ROCHFORD

Mills demolished/burnt down during the C20

Tide Mill (1964)
Matthews Provender Mill

TENDRING

Mills demolished/burnt down during the C20

- 46103** St Osyth's Tide Mill (1962)
3320 Walton Tide Mill (1921)
46105 Mill Farm Ramsay (1970)
46105 Pestles Hall Mill (1786)

Others

- 2875** Little Holland Watermill

Mills demolished in the C18 & C19

- Brightlingsea Tide Mill (1726-77)

UTTLESFORD

Mills demolished/burnt down during the C20

- 46112** Waples Mill (1920 +)
46089 Bentfield Mill (Farnham)
 Folly Mill (Thaxted)
249 Wendens Corn Mill (1924 +)
46112 Whaypules Mill (High Roding)
 Chapel Hill Corn Mill (1900+)

Others

- 113** Clavering Castle
18674 Great Dunmow
1341 Lindsell Mill (Domesday)
1242 Little Dunmow (Monastic)
4602 Takely Mill

Mills demolished in the C17 and later

- 40766** Hospital Farm Mill (1600-50)

APPENDIX III: Distribution Maps

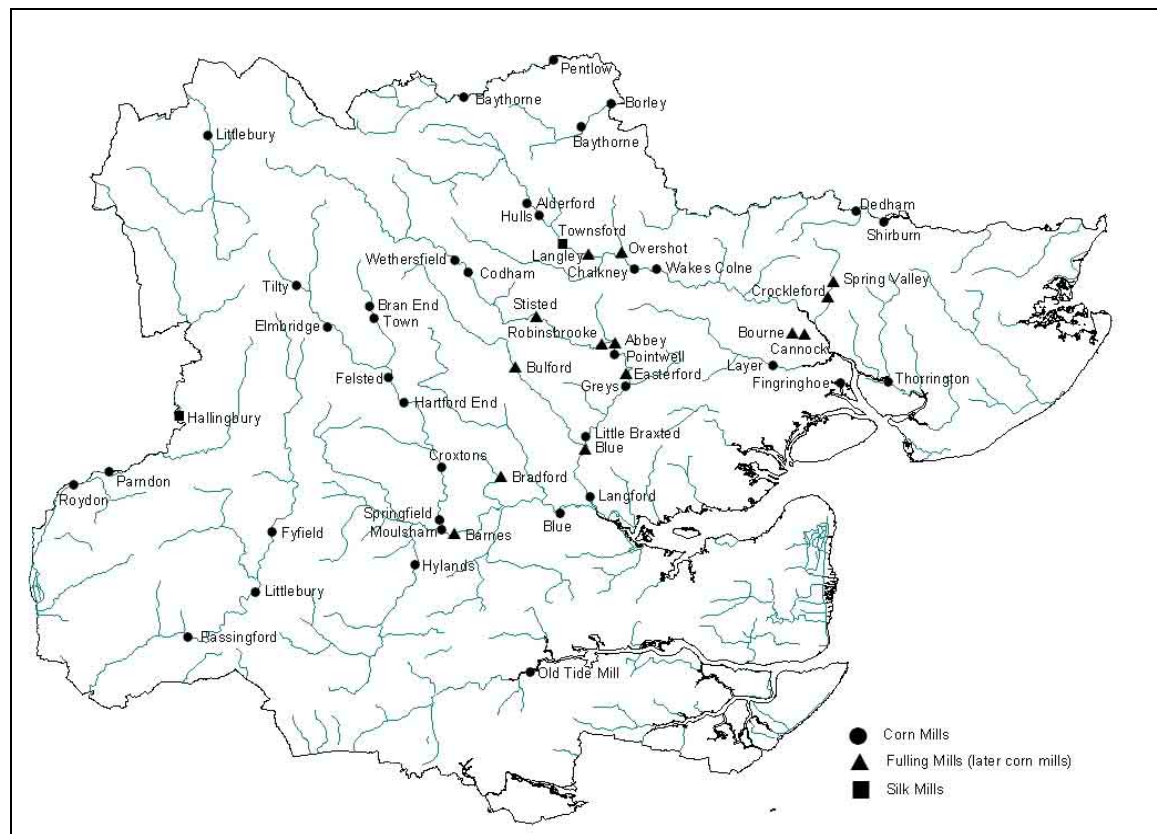


Figure I: Distribution of extant River and Tide Mills

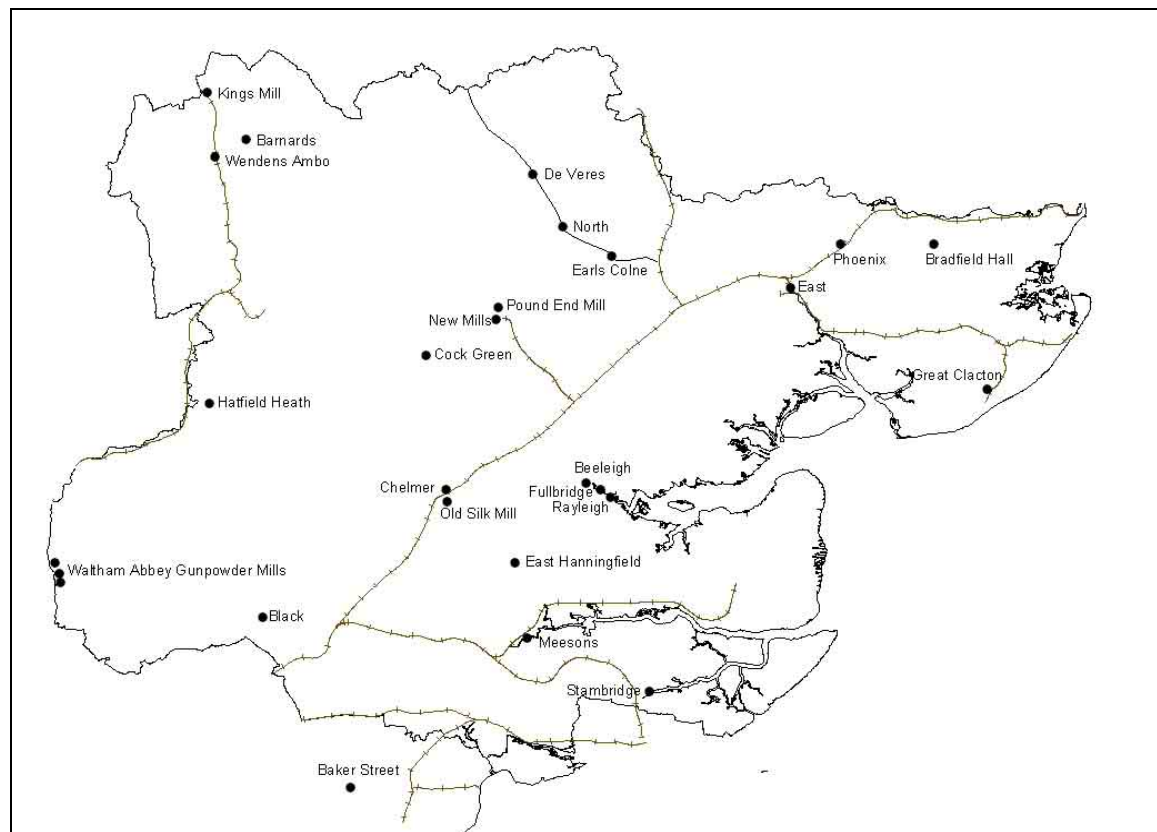


Figure II: Distribution of extant Steam Mills

INVENTORY

The inventory contains an individual record sheet for each site assessed during the survey. The record sheet is based on present knowledge and gives a brief site description, assesses its archaeological potential, significance and status, and identifies the need for future management and action. Sites are graded as follows:-

- 0 of low importance or demolished.
- * of local importance
- ** regional importance
- *** national importance
- **** major national or international importance

A current, and where possible earlier, Ordnance Survey map extract is provided for each site and at least one black and white photograph is included. The records are held in the Essex Historic Environment Record (EHER) at County Hall, Chelmsford.

BRAINTREE DISTRICT

EHER	Site Name	Grade
Watermills		
8660	Abbey Mill, Abbey Lane, Coggeshall	****
29113	Alderford Mill, Alderford Street, Sible Hedingham	***/*
29452	Baythorne Mill, Baythorne End, Birdbrook	**
40509	Belchamp Mill, Hall Road, Belchamp Walter	*/**
29020	Blue Mills, Wickham Hill, Witham	***
28467	Borley Mill, Borley Hall, Borley	*
27946	Bradford Mill, Convent Hill, Bocking	**/*
29968	Bulford Mill, Bulford Lane, Cressing	***
28713	Chalkney Mill, Colchester Road, Earls Colne	*/**
28239	Codham Mill, Codhams Lane, Wethersfield	***/*
8243	Easterford (Rogers) Mill, Swan Street, Kelvedon	***
25409	Greys (Docwras) Mill, Kelvedon	**
29680	Hulls Mill, Hulls Mill Lane, Great Maplestead	**/*
8615	Langley Mill, Elms Hall Road, Greenstead Green	*
28687	Overshot Mill, Mill Lane, Colne Engaine	**/*
27882	Pentlow Mill, Pentlow Lane, Pentlow	**/*
8690	Pointwell Mill, Pointwell Lane, Coggeshall	*/**
17826	Robinsbrook Mill, Robinsbrook Road, Coggeshall	*
30204	Stisted Mill, Kings Lane, Stitsted	***
26109	Townsford Mill, The Causeway, Halstead	**/*
28226	Wethersfield Mill, Braintree Road, Wethersfield	***
Steam Mills		
15838	Crape Factory, Foundry Lane, Earls Colne	*
45362	De Veres Mill, Castle Hedingham	*
15098	New Mills, South Street, Braintree	**/*
26195	North (Frosts) Mill, Mill Chase, Halstead	**
15836	Pound End Mill, South Street, Braintree	**/*



SITE NAME Abbey Mill, Abbey Lane, Coggeshall

PARISH Coggeshall **DISTRICT** Braintree

NGR TL 85543 22144 **EH** 8660
RIVER Blackwater **EH** 116049

CURRENT STATUS **Con. Area** Yes **Listed Grade:** I **EBAR** No

STATUTORY LIST DESCRIPTION

02/05/1953

Watermill. C17/18, altered in C19. Timber framed, weatherboarded, roofed with handmade red plain tiles. Single range aligned E-W, approximately 39 metres long, incorporating a cottage with axial stack, gig-house and stables at E end. Mid-C19 lean-to engine-house of red brick in Flemish bond, roofed with slate, near middle of N side, and chimney to N of it. Single-storey lean-to extension at E end, roofed with corrugated iron. 2 storeys, and loft floor in gambrel roof. The S elevation has on the ground floor 6 early C19 fixed lights and one horizontal sash, all of small panes, and one late C19 sash of 4 lights; and on the first floor 12 C19 casements and a continuous line of 22 early C19 fixed lights and casements; much handmade glass, some of it green; 6 skylights. Plain boarded doors on ground and first floor; C19 flush 4-panel door to cottage; double vehicle doors and halved door to gig-house and stable. Roof half-hipped. Wrought iron weathervane with gilt fish at W end. The structure has numerous screw-bolted knees. The chimney has square first and second stages, round above; on the first stage is an inscription 'B.A. Feb. 26, 1857' (possibly for Robert Bridge Appleford); the second stage has an arched recess in each side. Breast-shot wheel 3.84 metres in diameter with iron paddles. Sluice gates renewed c.1977. 4 pairs of French burr stones. Cast iron pit wheel embossed with 'A. Clubb, millwright, 1840' (of Colchester). Mechanism complete and in working order in 1987, with all ancillary equipment, fully described by H. Benham in *Some Essex Water Mills*, 1976, 62-4. There is a history of fulling on this site. It is not known whether the present mill was originally built for fulling, but from 1820 it was opened as a silk-throwing mill for John Hall, formerly of Coventry. In 1839 this business was transferred to the Gravel Factory in West Street, Coggeshall, and the mill was bought by the Appleford family and converted to corn-grinding. Many of the windows date from the Hall period, but there is no trace of the working equipment. The mill remained in commercial use by the Appleford family until 1960, adapted for steam in 1857 or earlier. The steam engine and related equipment has been removed, and the height of the chimney has been reduced.

JOHN BOOKERS SURVEY

Worked occasionally as a grist mill by water power, until about 1960 and capable of working again with little re-adjustment. C17 mill said to have been built as a Huguenot silk mill in place of the mill associated with the Cistercian Abbey. Large long and weatherboarded with tiled Mansard roof and longitudinal windows. Noted widely (Pevsner. N. 1954) as one of the beauty spots of Essex. The mill house stands a little distance to the W and is C18 with C19 alterations. The mill was used by Sawyer & Hall, silk throwers of Gt. Coggeshall in 1819 and probably reverted back to its earlier role of corn milling after c. 1838 when Hall concentrated on silk manufacture in a steam factory sited in the centre of Coggeshall. The mill had a steam engine for some years but this was relatively short lived.

Present Use: Residential but milling being reconsidered

Condition: V. Good

SOURCES: (D/DBW T 19), Pevsner, N. 1954, *The Buildings of England*

SITE BACKGROUND:

Abbey Mill stands upon a stretch of the Blackwater possibly diverted by the monks of Coggeshall Abbey by 1230 but not long after the Abbey was founded by King Stephen in 1140. The Abbey became Cistercian by 1148 and was dissolved by 1538. After the dissolution a mill on this site was used as a fulling mill and was subsequently rebuilt by Flemish refugees in C17 for weaving. This association with the textile industry remained until it was finally converted to a corn mill around 1840. It continued in this vein until it finally closed in 1960. The present incarnation of Abbey Mill is thought to date from the C17 although it is mainly C18 with a considerable C19 reworking. This later reworking is evident with the introduction of the continuous glazing or 'weavers windows' at first floor by the Silk manufacturer John Hall around 1820 and its later re-gearing for corn milling in 1840 by Robert Appleford. The mill was bought by the Roy Ward around 1960 who set about renovating the mill buildings and maintaining it in an (partial) operational state.

Field Survey 2007

05/10/07

Abbey Mill lies at a short distance south of the monastic buildings of Coggeshall Abbey (EHER 25216-18), south-east of a small collection of C16 and C17 agricultural buildings (EHER 25213-15) and immediately east of the C15 mill house (EHER 25212). All are listed individually but together form a group of remarkable historic and architectural value. The mill is orientated E-W across the mill leat, which passes below the western bays of the mill on its journey southwards to rejoin the Blackwater, c.160m to the south. It is approximately 13 bays in length although the main milling floors are concentrated within the 7 westernmost bays, the remainder to the east comprising a cottage, wagon bay and redundant stable range. Built over 3 ½ storeys it has weatherboarded elevations and a Mansard roof with handmade plain tiles, half hips and modern roof-lights. A red brick former engine house and accompanying brick chimney stack of 1857 extends to the rear (N) and on the eastern side of the watercourse. The waterwheel is located in the penultimate bay to the west and lies parallel to the mill sluice gate and by-pass channel which run to the west of the wheel pit and beneath the adjacent end bay. Its axle follows the same long axis as the building.

GROUND FLOOR (Spout)

Measuring 12ft 7inches in diameter the 10 spoke cast-iron waterwheel comprises two circular iron frames each cast in two semi-circular halves and bolted together (4 half sections in total). It is mounted on circular section iron shaft or axle (which at present needs repair) and has sheet iron **floats** and **sole-boards** fixed to the wheel using wooden starts set in mortises. On the northern side of the wheel is a dual system for opening the **shut** to the wheel at breast height or to raise the shut to use the remaining water undershot.

The **pit wheel** in the adjacent bay to the east contains an 8 spoke cast-iron wheel with metal cogs, cast by A. Clubb, Millwright of Colchester in 1840 (Alderton & Booker, 1980). It meshes with an iron **wallower** mounted onto the base of an **iron upright shaft**, which carries a 6 spoke cast-iron **spur wheel** and 3 remaining **stone nuts** with wooden cogs. There were originally 4 stone nuts but the NW nut is now missing. Of the 3 survivors 2 still have lever type **tentering gears** and one simply uses a nut. A jack beneath the wallower allows it to be disengaged so that the spur wheel could be driven independently using steam power. The whole drive mechanism lies central to the 7 milling bays and is supported within a heavy softwood **hursting** which is enclosed and segregated from the (spout) floor using pine matchboarding. A grain elevator adjacent and to the east of the hursting and close to the flour chutes or spouts rises through the floor above to connect with a large silk screen **bolter or grader** located on the bin floor (second floor). At a short

distance to the east is the **sack hoist** while a millers office remains close to the main entrance.

Where visible the timber frame is primary braced softwood construction using heavy binding joists with chamfers and stopped ends. There is much reused timber within the timber frame and later reworking of floors, as there are many replacement common floor joists, some tenoned into the binding joists while others lie over their backs. The original straight flights to all floors remain.

FIRST FLOOR (Stone)

Central to the first floor and mounted upon a timber staging are four sets of French Burr millstones. All four are grouped together around the upright shaft and remain in-situ, although the **runner stone** has been removed from the NE set, but lies adjacent. The western two of the four stones still have their hexagonal **tuns** and some **furniture**, but the SE set of stones now has a (later) part timber, part steel circular tun with furniture. Two hexagonal tuns, presumably original to the eastern pair are stored close-by. The stones are French Burrs manufactured by Coombe & Co. London. A 6 spoke iron **crown wheel** sits on top of the upright shaft and drives via a bevel gear a layshaft aligned N-S between the crown wheel and northern rear wall. Pulleys and leather belts attached to the layshaft drove auxiliary machinery on this floor including an extant grindstone and the **sack hoist bollard** on the floor above. The layshaft in turn could also be driven independently by steam power, to power the sack hoist and auxiliary machinery, when the waterwheel was disengaged. A bell mechanism to warn against the stones running dry is situated above the crown wheel. An extensive collection of miller's tools, spare pulleys and various types of balance scales are exhibited on this floor.

Two loading doors along the south front are situated in the bays either side of the central bank of stones. A sack slide used when hoisting the sacks up to the bins on the attic floor or for loading carts with sacks of flour is still present to the rear of the eastern doorway. On this floor the interior of the walls are clad up to window sill level using pine match boarding with a bead detail along the soffit. Where exposed the main timber frame has been lime-washed. The windows, inserted during its use as a silk mill, are continuous or weavers windows synonymous with the textile industry and similar to those used in the textiles mills of Courtauld and Warners in Braintree and Halstead. Each softwood window frame is dowelled together and has a central chamfered mullion with two panes of 6 fixed lights either side.

SECOND FLOOR (Bin)

The flour elevator to the east of the stones terminates at this level and feeds via a chute into a large silk screen bolter located along the rear northern wall. Adjacent to the elevator head is the sack hoist bollard, driven from the layshaft below and driving the sack hoist mechanism and pulleys located in the bays to the east. A raised axial walkway, extending the length of the 7 western bays of the roofspace, lies central to a series of grain bins built into the roof structure between the walkway and the eaves. The lower roof plane of the Mansard roof is primary braced while the upper adopts common rafters rising to a ridge board. The trusses are queen post (to allow access along the central walkway) with lower raking struts. In the upper roof there are two tiers of side purlins, the lower supported by the raking struts and the upper via a horizontal brace nailed between the queen strut and the common rafter. Further support is provided to the upper purlin by intermediate queen struts rising from the central walkway. Given the lightweight construction, extent of reused timbers and use of a ridge board, a C19 reworking of the C18 Mansard roof may be suggested.

Present Use: Unused but well maintained and periodically open to the public.
Condition: Very Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill, Stable, Cottage	C18/C19	Timber	High
Engine House	C19	Brick	Med-High
Chimney Stack	C19	Brick	Med-High
Integral Sluice	C19/C20	Iron/Timber	Med
Mill House	C15	Timber	Med-High

ARCHAEOLOGICAL POTENTIAL

Abbey Mill is unusual in that it still retains much of the technology, fixtures and fittings associated with its latter use for corn milling. It also holds a huge collection of milling ephemera, including tools, fixtures and fittings and unusual examples of milling apparatus such as an intact silk screen bolter. Its interest also lies in its later adaptation to a silk mill and the subsequent re-gearing into a corn mill during the mid C19.

SITE SIGNIFICANCE

Abbey Mill is an important and early example of a C17 textile mill that has undergone many alterations to cater with its change of use. It survives as one of only a few unconverted (residential/business) watermills within the county and is nationally significant as it still retains much historic apparatus/technology original to the building and the potential to be brought back fully into working use. Abbey Mill is one of the most significant surviving mills in Essex

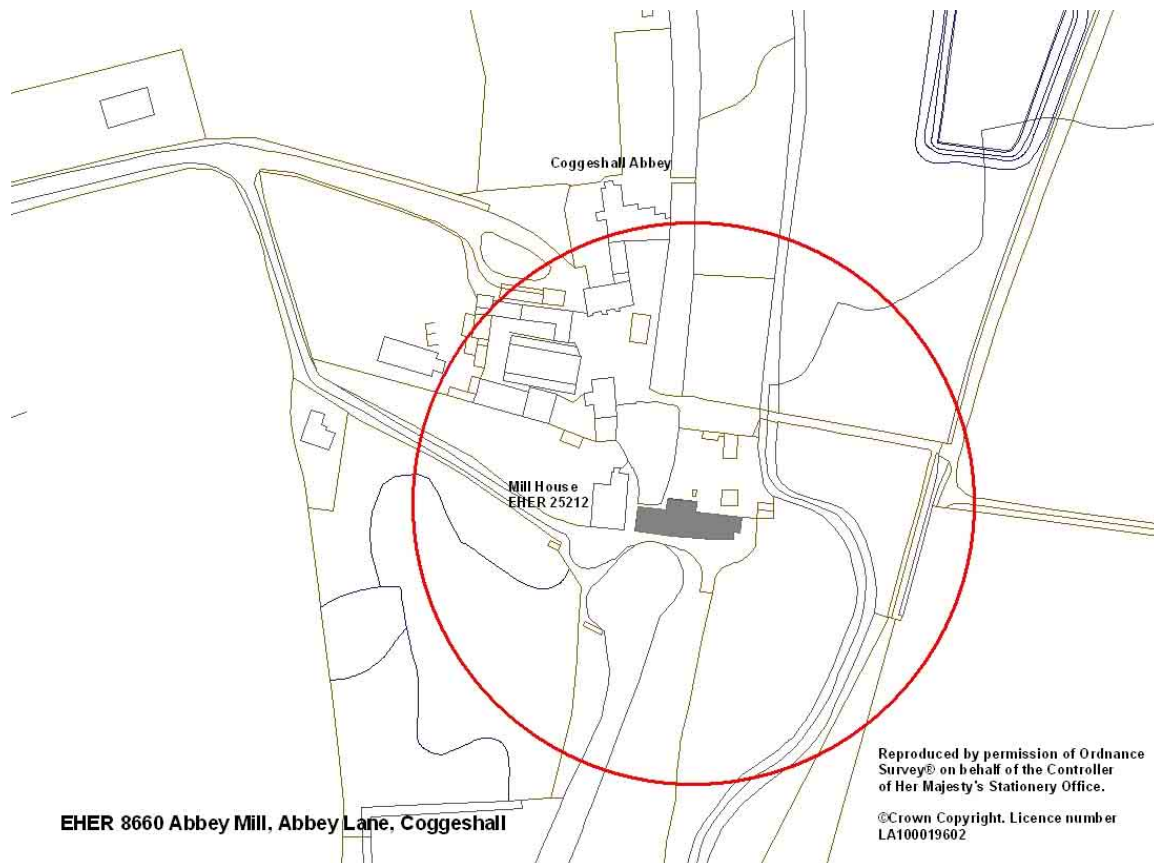
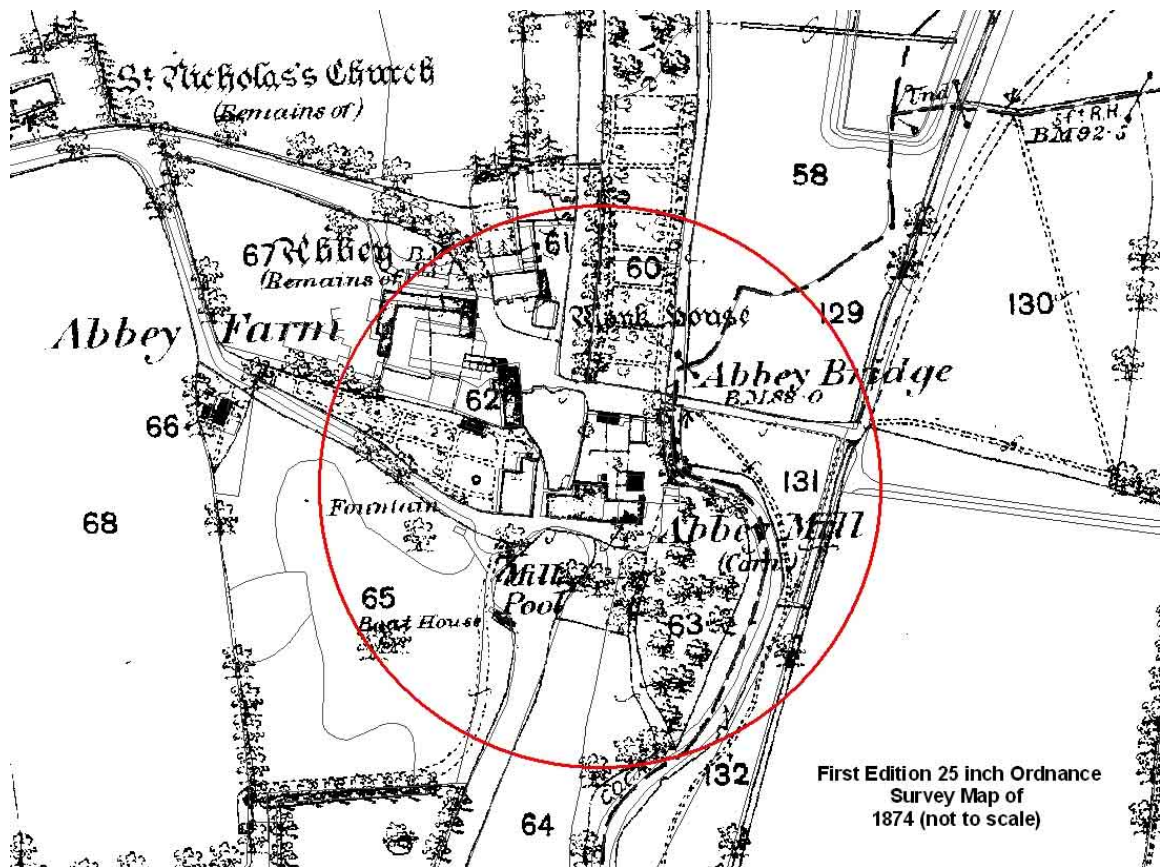
RECOMMENDED ACTION

Maintain its present level of Grade I designation. As one of the foremost watermills in the county and based on its loving restoration and continued maintenance by the Ward family. Given the significance of the mill, future proposals to convert it to residential use should be discouraged

MANAGEMENT

Prior to any significant future construction work to the mill an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features, should be carried out. A detailed study of the building and its apparatus (at RCHME level 3 or 4) may also form part of any future consent.

GRADING ****





Abbey Mill looking north-west



Abbey Mill, extant millstones and furniture

SITE NAME Alderford Mill, Alderford Street, Sible Hedingham

PARISH Sible Hedingham **DISTRICT** Braintree

NGR TL 78480 33914 **EH** 29113
RIVER Colne **EHUID** 114733

CURRENT STATUS **Con. Area** Yes **Listed Grade** II* **EBAR** No

STATUTORY LIST DESCRIPTION

21/06/1962

Water mill. C18. Timber-framed and weatherboarded. Red tiled gambrel roof with two gabled dormers to east and west and gabled weatherboarded hoist loft to south. Two storeys and loft. South face, three-light ground floor windows, vertically boarded first floor door, small-paned window to hoist loft. East face has angled two-storey weatherboarded extension to left with corrugated iron roof, single storey red brick slate extension to right with dog tooth eaves cornice and round-headed iron window with glazed margins. C20 single storey infill lean-to between these extensions. Two 3-light windows to first floor, small paned casements to dormers. North face has three 2 window ranges with an apex window of various small paned casements, casements with transoms and pivot casements. Brick facing to base. West face has small single storey weatherboard and grey slate gabled extension to south with entrance door and small paned casement. Brick facing to north base. Two window range to ground floor, that to right now blocked. Vertically boarded door. Three small-paned vertically sliding sash windows to first floor. Two small paned windows to door. Interior has complete machinery, including probably C17 wooden undershot wheel, great compass arm, great spur wheel and wooden vertical shaft. C19 cast iron wallower. First floor has 2 pairs of millstones, vertical shaft and wooden crown wheel driving layshaft with pulleys. Second floor has grain bin partitions and pulleys.

JOHN BOOKERS SURVEY

28/07/1971

Traditional design with Mansard roof and weatherboarding. Cast iron waterwheel with wooden paddles and iron semi sunk pit wheel, in the middle of the building; wheel probably breast shot. Cast iron bearings, wooden shaft, cast iron wallower, wooden spur wheel engaging stone nuts, with mechanism for taking out of (disengaging) gear. Engine house thought to have housed steam engine; some shafting remains with Hoffmans bearings; some pulleys also remain, one with belt intact to grist mill on first floor. Large wooden stanchions with remains of ironwork, exist at N end, probably once part of crown wheel housing to turn drive through 90 degrees to stones on the first floor. In entrance to mill is L. B .7 Briton mill (grinder) and nearby iron sack-feed from mixer. At the N. end of the 1st floor are 2 stones (one steam powered), one with ironwork from Corcoran (no. 4587), the other with no markings. Two water powered stones are by Tinsley Maker (Ipswich) and Hughes and Son (Dover Road, London). Two spare stones in recess beside north end, one not marked the other by Hughes and Son. Also Hunt crusher U128 mark BMH Improved Corn Crushing mill, worked by pulley drive taken from the crown wheel, which also worked the sack hoist, grist mill, also by Hunt (The Premier No.3), worked by a pulley from below. The second floor contained storage bins, a lucam and chutes to crusher, grist mill and stones. Currently occupied by H.J. Rawlinson Ltd., Corn and Agricultural Merchants.

Present Use: Office Use/mill disused

Condition: Unusually complete within

ERO SOURCES: (D/CT 174)

SITE BACKGROUND:

From the 16th century and probably earlier Alderford Mill belonged to the manor of Castle Hedingham. In 1585 Edward De Vere leased it for a term of 1000 years to Matthew Alyston of Sible Hedingham. As the mill does not lie close to any of the Hedingham Manors it is doubtful whether it is of Domesday origin. The mill was acquired in 1846 by miller Edward Mumford in an agreement with John Lawrence and Richard Dobson Chevely. In 1849 Mumford was declared bankrupt and the mill passed to William Sandle who sold it in 1869 to local miller Thomas Eley. Eley mortgaged the mill to help pay off a debt of £3200 owed to Francis Whitlock, Arthur Bentall Collis and George Goodchild but ended up relinquishing the mill to them by 1872. A deed recording the transfer records a 'newly erected engine and all those buildings and improvements newly erected'. This included a new coal store, boiler house and steam engine, together with the necessary driving mechanisms to power two additional sets of stones. Following the death of Eley in 1888 the mill was sold to William Bishop of Highgate. Williams brother Frederick Bishop inherited the mill on Williams death in 1911 and consequently the mill passed to Fredericks son, also Frederick, in 1915, who sold it to Robert Gatward of Castle Hedingham in 1921. Two years later Gatward sold to Harold John and Harry Stanley Rawlinson. During the 1930s the steam engine was dispensed with and a new Rushton and Hornsby oil engine fitted. In 1941 H.S. Rawlinson transferred his interests to his brother H.J. Rawlinson who by 1956 became a limited company, H.J Rawlinson Ltd. During the 1950s the traditional grinding methods were abandoned and the mill was converted to use electric crushers for animal feeds (Andrews, D & Wood, G)

Field Survey 2007

10/07/07

Alderford Mill lies to the SE of Sible Hedingham and along Alderford Street. It is built astride the River Colne and to the south and west of its by-pass leat. The mill is no longer in use but (unusually) survives in an 'unconverted' state and is at present in the process of being conserved by the Essex County Councils Mill Team. Orientated NE-SW across the river, Alderford is a 3½ storey, part brick but mainly timber framed and weatherboarded mill with a plain tiled Mansard roof. The mill dates to the C18, as characterised by its roof structure and timber framing, but was subsequently extended by two bays (E) during the C19 when it was adapted to steam milling. Later accretions, mainly added to the southern elevation, comprise a C19 brick built engine/boiler house and chimney, a small canted, weatherboarded extension incorporating a mixing silo and between the two a central 'pole barn' style lean-to. To the south is small yard retained within a brick-built boundary wall and to the north is a small solitary gable ended office. The main roof incorporates an oversailing **lucam** with straight braces projecting from the western end and pairs of gable dormers built into both roof pitches above upper purlin level. An off centre taking-in door is situated below the lucam at first floor. The windows are mainly C20 timber multi-paned sashes built into the long walls and the northern end wall, although a departure from this are the original C19 iron-framed arch-headed fixed glazed windows lighting the engine and boiler house.

Ground (Spout) Floor

The entire ground floor and wheel pit is brick built and supports a soft wood primary braced timber frame of seven unequal bays. Repairs in 1994/5 included the rebuilding of much of the brick plinth wall which had been weakened through the action of frost and shrubs. This was replaced in metre sections and tied into the main structure using stainless steel rods. The foundations of the mill office were completely rebuilt and the brickworks and roofs of the steam engine house and coal store were repaired. The brickwork in the wheel pit was repaired following the removal of the shaft and new bottom ends were scarfed into the **hursting**. During

this work the National Rivers Authority (NRA) renewed the mill sluice as the old sluice had become damaged.

The **wheel pit**, **water wheel** and hursting are situated within the central two bays of the current floor plan. The **low breastshot** waterwheel is cast-iron with **wooden paddles** (currently being replaced). The wheel is set onto a timber axle shaft and comprises four 'half' castings bolted together about the shaft and braced laterally. The shut is situated immediately north of the wheel pit and is operated using a hand cranked worm gear mechanism. To the west is a cast-iron **pit wheel**, cast-iron **wallower**, timber **upright shaft**, **great spur wheel** and two cast-iron **stone nuts** (with **tentering gears**) underdriving a pair of stones on the floor above. The two later easternmost bays, probably built around the 1870s when the engine house was added, still retain the line shafting and pulleys, steam driven from the adjacent engine house to the south and the timber hursting which formerly supported the drive to a pair of stones above. Therefore by the later C19 the watermill worked four pairs of stones, two traditionally driven by water power and two driven by steam. The steam engine and boiler (post 1872) were accommodated within a two bay brick range with an adjoining coal store and stack abutting the rebuilt southern wall of the eastern bays. The engine house was carefully built and featured a number of architectural embellishments including a dentil eaves band and ornate arch headed windows with marginal glazing. The steam engine and boiler were finally removed during the 1930s following the installation of a Rushton and Hornsby oil engine.

First (Stone) Floor

As below the first floor comprises five irregular sized C18 bays, with two particularly narrow bays (c. 1.8m-2m) at the western end, plus two larger unequal C19 bays to the east. The binding joists of the older framing all have chamfers with stopped ends and are supported by timber knees bolted between the joist and storey post. There is a noticeable change in the extension (E), which is built with plain storey posts and uses iron brackets to support the binding joists. Also the common floor joists are tennoned into binding joists within the older range but simply laid over the back of the joist in the extension. The absence of empty mortises in the soffit of the binding joist at the junction with the later extension and the correct assembly of the floor joists in its eastern face, indicate that the C18 building did not finish at this bay but had continued for at least another bay to the east. Therefore during the C19 works the C18 end frame and possibly another bay were completely removed and two new bays were built up to the existing frame.

Central to the stone floor is the upright shaft capped by a **wooden crown wheel**, which drove via a bevel gear the sack hoist mechanism and, attached to the same shaft, a number of pulleys powering (through belts) auxiliary machinery (a corn crusher and grist mill by Hunts of Earls Colne). Immediately west of the crown wheel are two pairs of French Burrs by Hughes and Sons, London. Neither stones retained an intact set of **stone furniture** although the **tuns** partly survive and are in repair. One set of the two pairs of steam driven stones (eastern bays) did have most of its furniture and was a French Burr manufactured by Corcoran.

A light weight primary braced extension housing a large post war grain/animal feed mixing silo driven by an electric motor, is present along the southern wall of the western bay. The wall framing of the western end appears to have been rebuilt quite recently and the windows to the floor are also replacement sliding sashes with small glass panes and ovolo glazing bars.

Second (Bin) Floor and Roof

The second floor principally comprises a central raised axial gantry flanked either

side by a number of grain bins. The gantry leads to the **lucam** in the western gable and is punctuated centrally by a **sack trap** and hoist. A sack hoist bollard survives below the level of the gantry and adjacent to the straight flight along the northern wall. The internal **sack hoist mechanism**, pulleys and sack chain remain while some of the pulleys working the hoist in the lucam also survive within the roof structure. The roof is a side purlin construction with raking struts and collars at bay intervals. Additional strengthening, possibly incorporated to counter the loading caused by the grain bins, is provided by timber knees bolted between the tie beam and principal rafter (lower) and by intermediate struts added below the purlins on each side. The dormers appear to be later additions to the roof structure, although inspection was impeded by the lining out of the internal roof structure with lathe and plaster panels.

The renovated sluice gate with two boarded gates and a ratchet type winding mechanism is still in operation to the NW of the mill.

Condition: Fair-Good

Current Use: Presently disused but undergoing restoration back to a working mill.

ARCHAEOLOGICAL POTENTIAL

Alderford mill is unusual in that it is a small country mill that still retains much of the heavy technology and associated C19 fixtures and fittings relating to its use as a corn mill. Also as the mill has not latterly been reused in a residential or commercial context, it preserves its internal spatial integrity and many features demonstrating the chronological and technological development of the building.

SITE SIGNIFICANCE

Alderford mill is an important example of a typical C18 country mill that like many mills across Essex developed hand in hand with markets and technological innovations. Today it survives as one of only a few unconverted (residential/business) watermills within the county and is nationally significant in that it still retains much of the historic apparatus/technology original to the building which has been conserved through the tireless work of the ECC Mills Team. Recently the waterwheel turned under its own power for the first since the 1950s and now forms part of a very select number of watermills within Essex that have the necessary gearing and are still capable of working under water power. As such Alderford mill is one of the most important watermills in Essex and in the country.

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18/C19	Brick/Timber	High (Grade II*)
Engine House	C19	Brick	Med-High
Sluice	C20	Iron/Timber	Low-Med

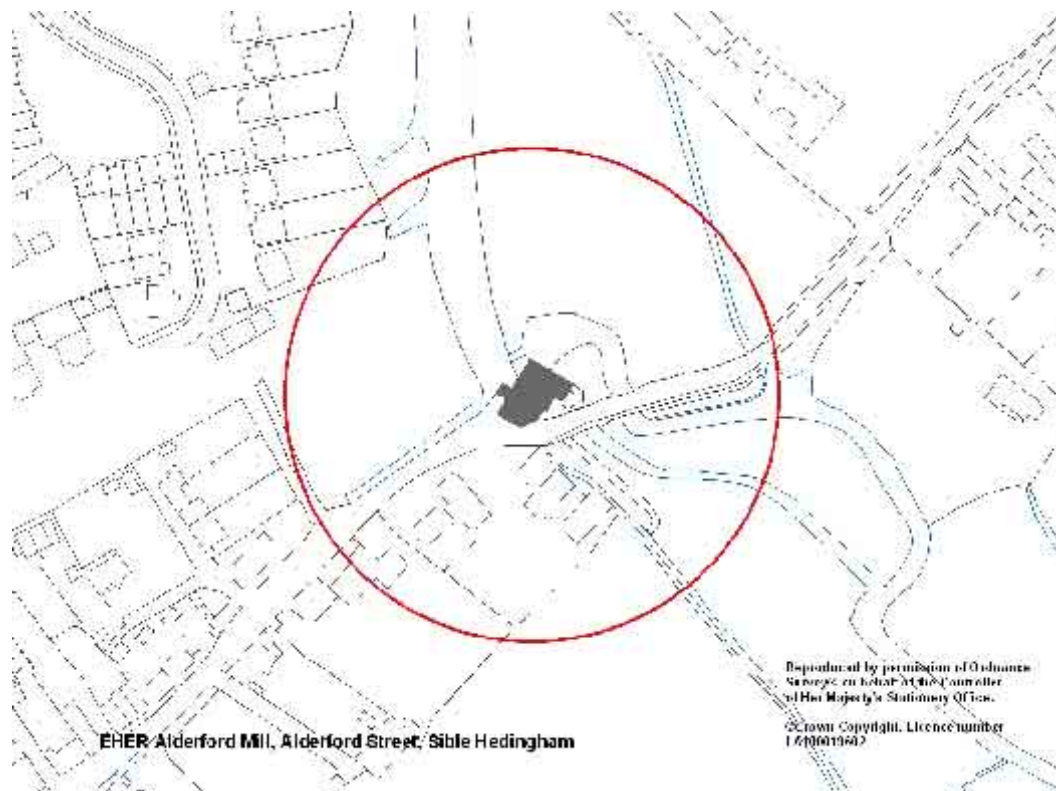
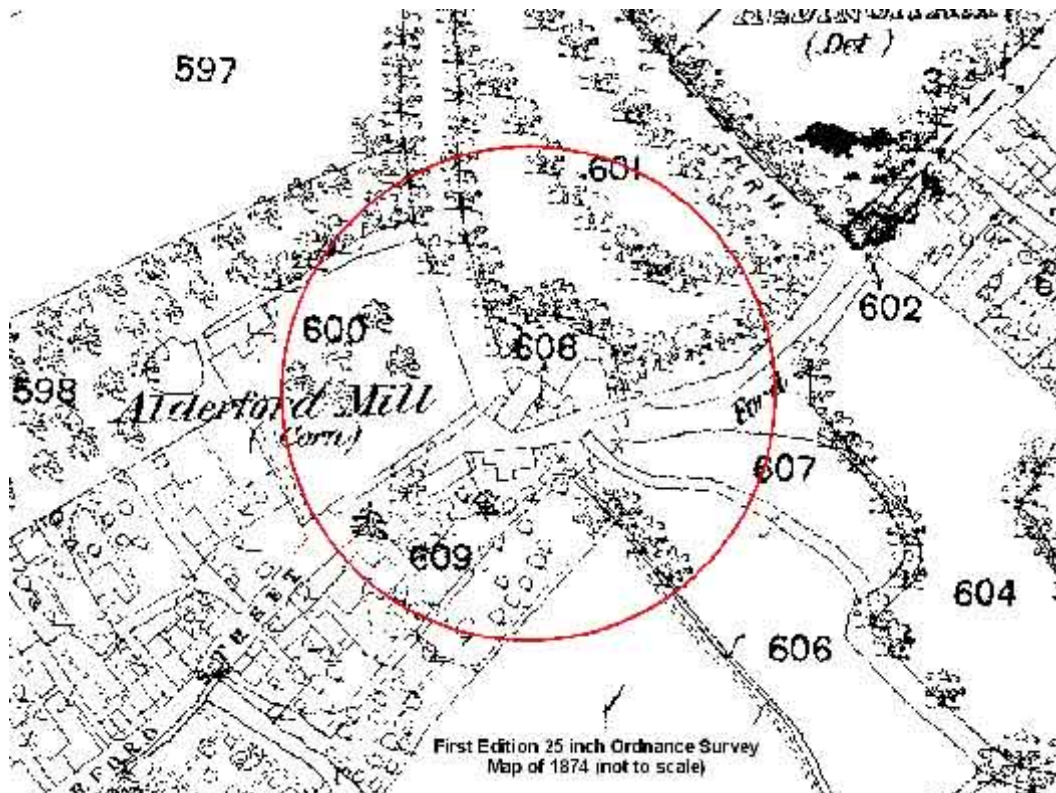
RECOMMENDED ACTION

Maintain current Grade II* status.

MANAGEMENT

Alderford Mill is presently in the process of full restoration back to a working watermill by the County Councils Mills Team. Its future, along with a small number of other watermills and windmills owned and maintained by ECC, looks assured. The restoration of this important mill back to a working use should be fully documented and published in an appropriate journal.

GRADING ***/**





Alderford Mill looking north-east



Alderford Mill Stone Floor during conservation works

SITE NAME	Baythorne Mill, Baythorne End, Mill Road, Birdbrook		
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PARISH	Birdbrook	DISTRICT	Braintree
NGR	TL 72338 43012	EH	29452
RIVER	Stour	EHUID	114081

CURRENT STATUS	Con. Area	No	Listed	Grade II	EBAR	No
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STATUTORY LIST DESCRIPTION

09/01/1976

Water mill, C18, extended in C19, now a house. Painted brick, Flemish bond, roofed with handmade red clay tiles and slates. Aligned NW-SE, aspect NE, with axial chimney stack at SE end. 2-storey C19 weatherboarded extension with slate roof at SE end. C19 steam engine house at NW end, with tall round chimney on square base to rear. Single-storey extension beyond, now a double garage. 2 storeys with attics. Halved boarded door and half-glazed door, one C18 casement window, 3 reproduction windows in original arched apertures. Double boarded doors over wheel-race. First floor has C20 central French windows and balcony. 2 C18 casement windows and 2 C20 casement windows in original arched apertures. String course at first-floor level, dentils under eaves, gambrel roof. Boldly projecting lucam with 2 C18 casement windows in it, and 2 swept dormers with C18 casement windows. SE extension has a half-glazed door, one C20 casement window on each floor, and scalloped eaves trim. All windows of engine house C20. Mill wheel present, not in operational order, under glass cover. Interior has exposed beams and joists on both floor, mostly original. Most of the windows, back and front, are original, with hardwood frames, wrought iron casements, and rectangular leaded glazing, with some early glass. (Some are repaired or restored in C20). Individually these are becoming rare, and a substantial set of them in their original context is particularly valuable.

JOHN BOOKERS SURVEY

03/09/1973

Late C19, white painted brick mill building with tiled roofs converted to a house. The windows have segmental heads and leaded casements. The buildings of the adjacent steam plant including the lofty chimney are still in position. It is reported that the mill ceased to work in the 1928 and the waterwheel was still present in 1965. The main building is of 2 storeys with windows set in the roof either side of the lucam.

Present Use: Private residence

ERO SOURCES: (D/DU 267/97), (D/DSh T 34), (D/DU 267/89)

SITE BACKGROUND:

Baythorne Mill lies at a short distance from the county boundary on the southern side of the River Stour and to the north of the small hamlet of Baythorne End. Baythorne Mill is a large multi period mill site comprising an C18 mill depicted in an early C18 painting of Baythorne Hall, an attached weatherboarded mill house (S) and a C19 in-line engine house (N) with an original chimney stack to the rear. The mill was converted to residential use by the later 1930s.

Field Survey 2007

09/07/07

The mill is c. 5 bay building, built over 3½ storeys (the attic accommodating 1½ storeys) and is timber framed but with a C19 brick refronting. The roof over the mill is gable ended (N-S) and is covered in plain tiles. Two catslide dormers sit either side of a central weatherboarded and gabled **lucam** built 'over purlin' and supported on curved timber brackets. The majority of windows in the façade have brick segmental arched heads and are a mixture of C19/20 iron framed and timber casements.

Central to the northern bays is a pair of double boarded doors, which allow access to the **wheel-race** and to the culverted **mill tail** which emerges via a brick arch to the front (E). The presence of tie bar braces on the northern bay suggests localised strengthening associated with the location of the mill gearing within these bays. Internally some ironmongery was kept for decorative effect, but overall few features survive. The cast-iron **pitch-back** water wheel, probably inserted during a C19 renovation of the mill, remains in situ (northern bays) but no longer turns. The timber frame is not completely softwood but is built of new and re-used timber, including some rather ornately carved pieces, used alongside Baltic pine. Built in-line to the south is a two storey part weatherboarded, part brick ?mill house (or granary) and to the north a substantial two storey steam engine and boiler house. The latter is brick built and in common with the mill has a dentil course at the eaves. It is 4-5 bays in length with a slate covered gable ended roof and a weatherboarded lean-to to front. To the rear stands an impressive and increasingly rare example of an C19 intact industrial brick chimney stack.

Present Use: Private residence

Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Watermill	Later C18	Timber	Med
Engine House	C19	Brick	Med
Chimney Stack	C19	Brick	Med
Mill house/granary	C18-19	Timber/brick	Med

ARCHAEOLOGICAL POTENTIAL

Due to the reuse of the mill and the adjacent engine and boiler house as a domestic dwelling few significant fixtures, fittings or technologies remain.

SITE SIGNIFICANCE

Baythorne Mill is not a particularly significant in the terms of its design or levels of survival and could be classed as a relatively uninteresting (technologically) given the levels of reuse and survival of internal features and spaces. However it does have some merits, preserving its waterwheel (as a feature), the steam engine house and more unusually its tall industrial chimney stack.

RECOMMENDED ACTION

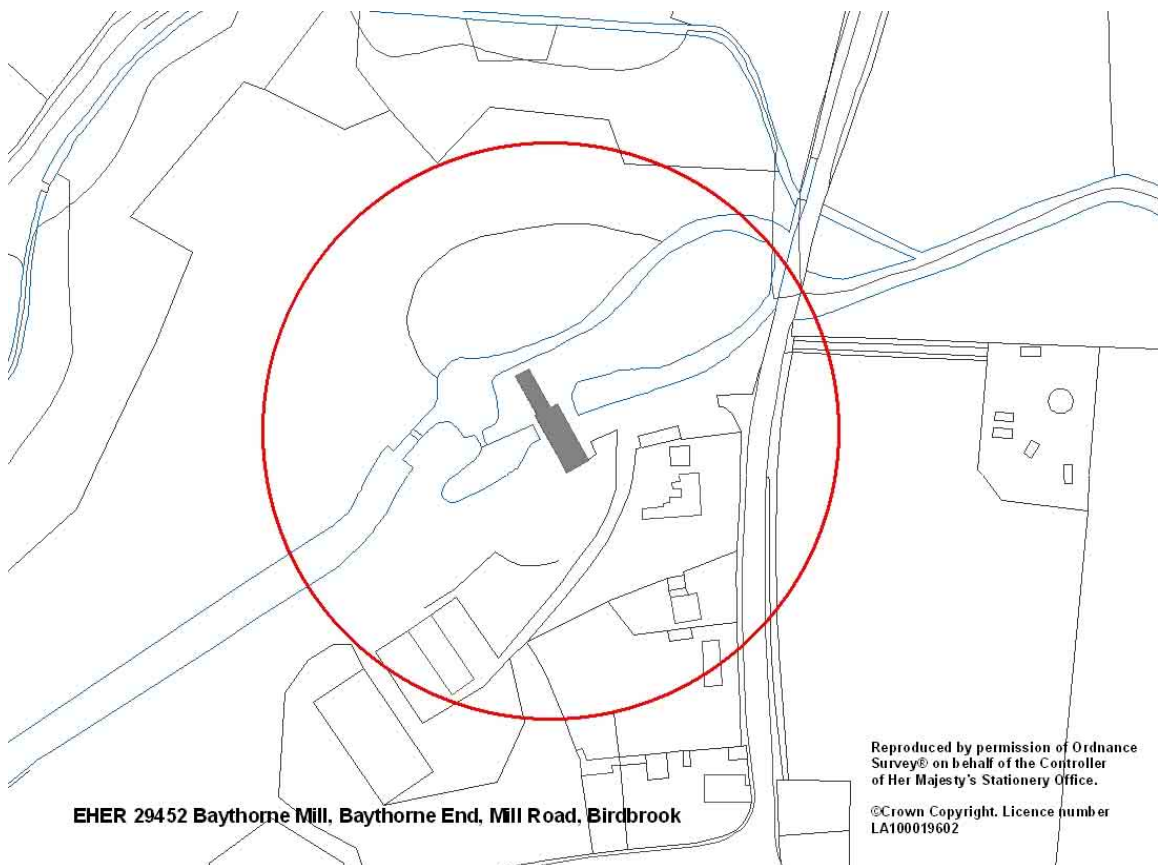
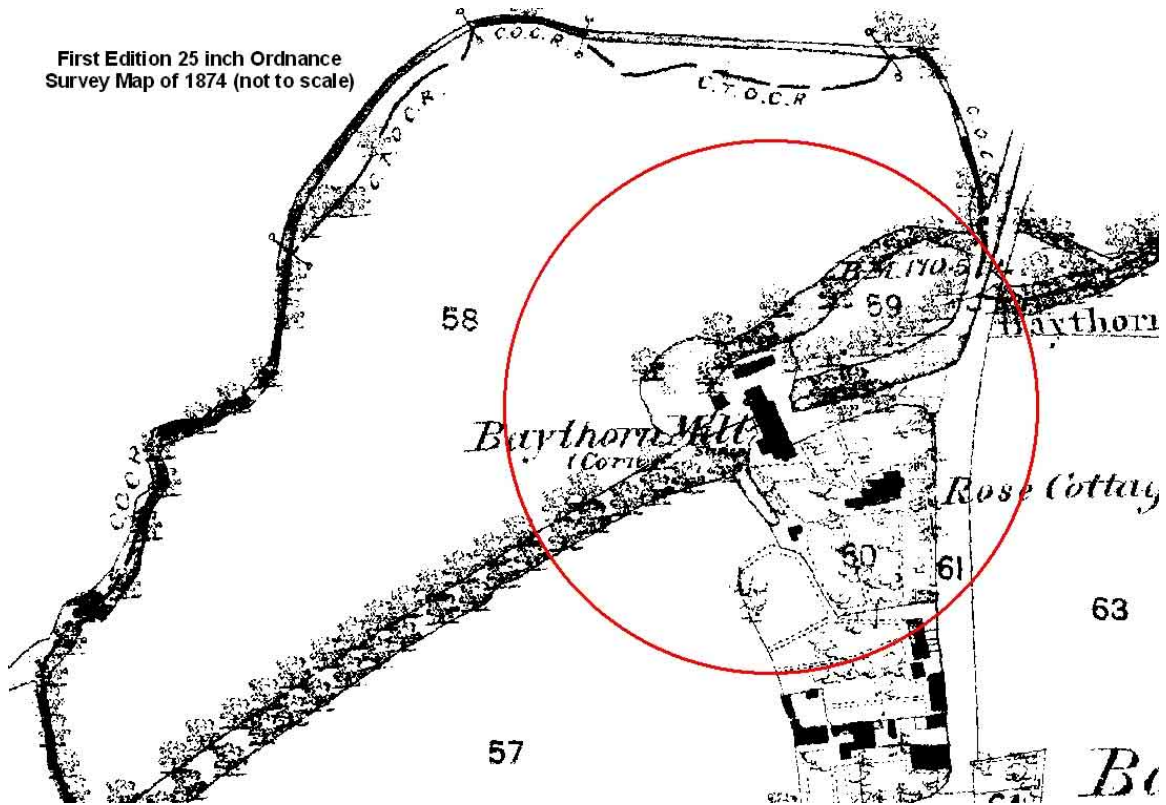
Maintain its current level of listed designation

MANAGEMENT

Baythorne Mill and the adjacent engine house are presently in use as private residences and as such they and the watercourses are well maintained. Should the opportunity present itself an internal inspection and/or historic building survey is recommended in order to assess and record levels of archaeological/historic and technological survival within the buildings

GRADING **

First Edition 25 inch Ordnance
Survey Map of 1874 (not to scale)



EHF 29452 Baythorne Mill, Baythorne End, Mill Road, Birdbrook

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Baythorne Mill and Engine House looking west-south-west

SITE NAME Belchamp Mill, Hall Rd , Belchamp Walter			
PARISH	Belchamp Walter	DISTRICT	Braintree
NGR	TL 82745 40469	HER	40509
RIVER	Belchamp Brook	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY: NA

SITE BACKGROUND:

This building is an interesting example of a small manorial water mill, in contrast to the large multi-storey water mills which are still a familiar sight today. It is not very old: its fabric, which is of at least three phases, is mainly 19th-century with part of the west wall datable to the 18th century. There can be no doubt that the present building shares the site of a much older mill (Andrews, 2005)

Field Survey 2007

18/06/07

A small three bay, two storey, half brick and half timber-framed watermill lying at a short distance south of the mill house and immediately west of the mill pond. Presently covered with corrugated iron sheeting its roof is gable ended but incorporates a catslide which projects out over a centrally positioned **lucam** along the eastern elevation. The mill adopts a simple rectangular plan but unusually is built into an earthen bank which conceals the majority of its western lower storey, particularly the NW bay and the path of the mill tail. A low brick lean-to with a corrugated roof projects from the northern wall out over the former wheel pit. The upper storey, including the lucam, is weatherboarded and the lower is mainly built in C19 red brick, although the brickwork of the western wall appears to be earlier. The external C19 brickwork is painted using bitumous paint and laid in an irregular English Bond. At ground floor in the eastern wall there is a heck-type (halved) door opening into the southern bay with a taking-in door immediately above. There are no openings in the central bay below the lucam but a large hatch door is present to the north and in the former area of the **hursting**. Small windows in the lucam, northern and southern bays are later additions and supplement a pair of unusual and elaborate two-centred arch headed windows present in the southern gable end wall. Access from the west is gained via a door which opens directly into the northern bay at first floor level. A length of brickwork which presently is battering back the earthen bank to the south of the mill could theoretically be the remnants of a predecessor.

The interior of the mil had been completely cleared of all technology. At ground floor no evidence of the waterwheel, the gearing to the stones, auxiliary drives or fixtures and fittings remained. A half round brick arch in the northern wall integrates the wheel pit with the body of the mill and specifically the northern bay. The first floor is supported on two heavy re-used binding joists, intentionally positioned to provide a narrower central bay to support the lucam. A sack hatch remains central to the first floor and various mountings remain attached to the floor joist soffits. The west wall is partially rendered (against the damp caused by the earthen bank) and includes an earlier blocked brick archway lying below the present west door. No access to the first floor was gained but the roof, dating to the C19, was seen to be a side purlin construction with a ridge plank. The mill is starting to suffer from a lack of maintenance. The brickwork shows signs of localised subsidence in the form of cracking, some small areas of weatherboarding are missing and the corrugated roof, although weathertight appears to be nearing the end of its life. The adjacent mill house was mainly destroyed following a chimney fire in the early 1990s. Although

damage to the roof and upper storey was extensive the mill house was rebuilt in 1992, incorporating the remnants of the surviving timber frame.

Present Use: Disused

Condition: Fair but deteriorating

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Later C19	Brick/timber	Med-Low
Outbuildings/sheds	Later C19	Brick	Low
Mill house	C20 (1992)	Timber	Low

ARCHAEOLOGICAL POTENTIAL

Although the building appears to have been altered little externally, internally the milling apparatus, fixtures and fittings have been completely removed while the mill leat and tail have been backfilled. However as three-quarters of the ground floor was hidden below an inserted floor evidence of technological features or earlier processes may well survive below the present floor surface.

SITE SIGNIFICANCE

Its diminutive size, continued use of timber farming in preference to brick during the later C19 and the unusual almost church-like arched headed windows are characteristics that set this manorial mill apart from many of the mills featured in this survey. Ultimately the mill has been compromised by the removal of its gearing but survives as one of a small number of unconverted mills within the county.

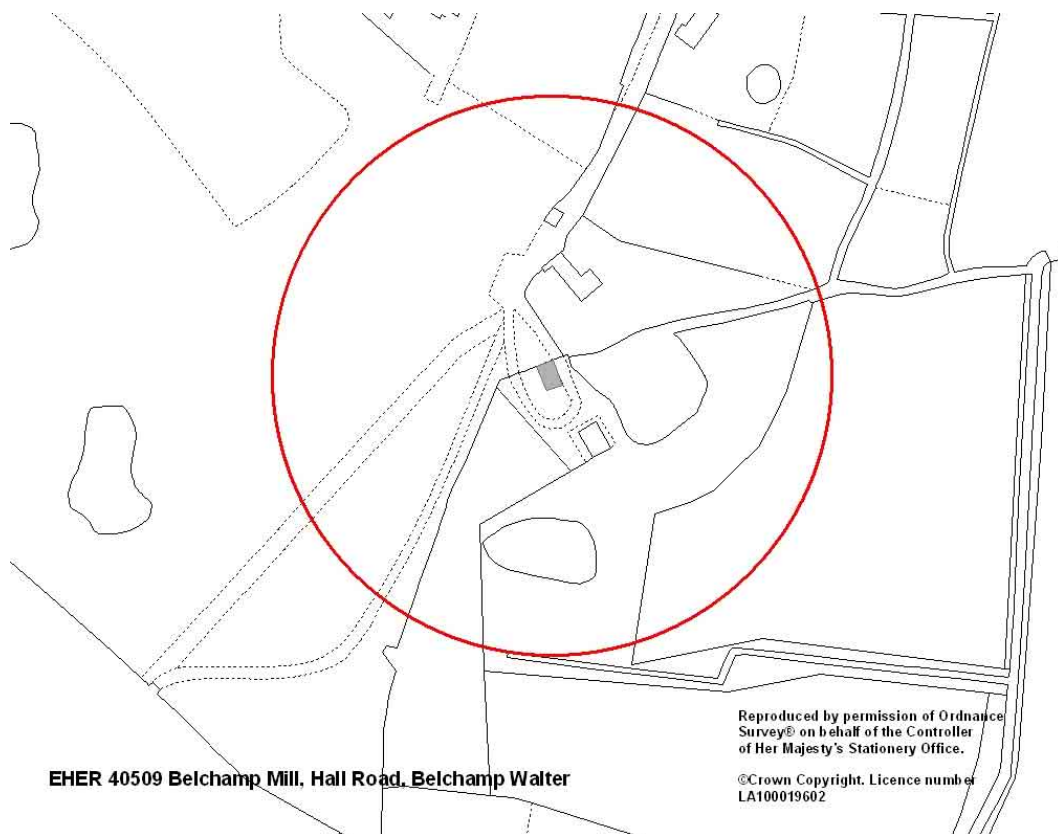
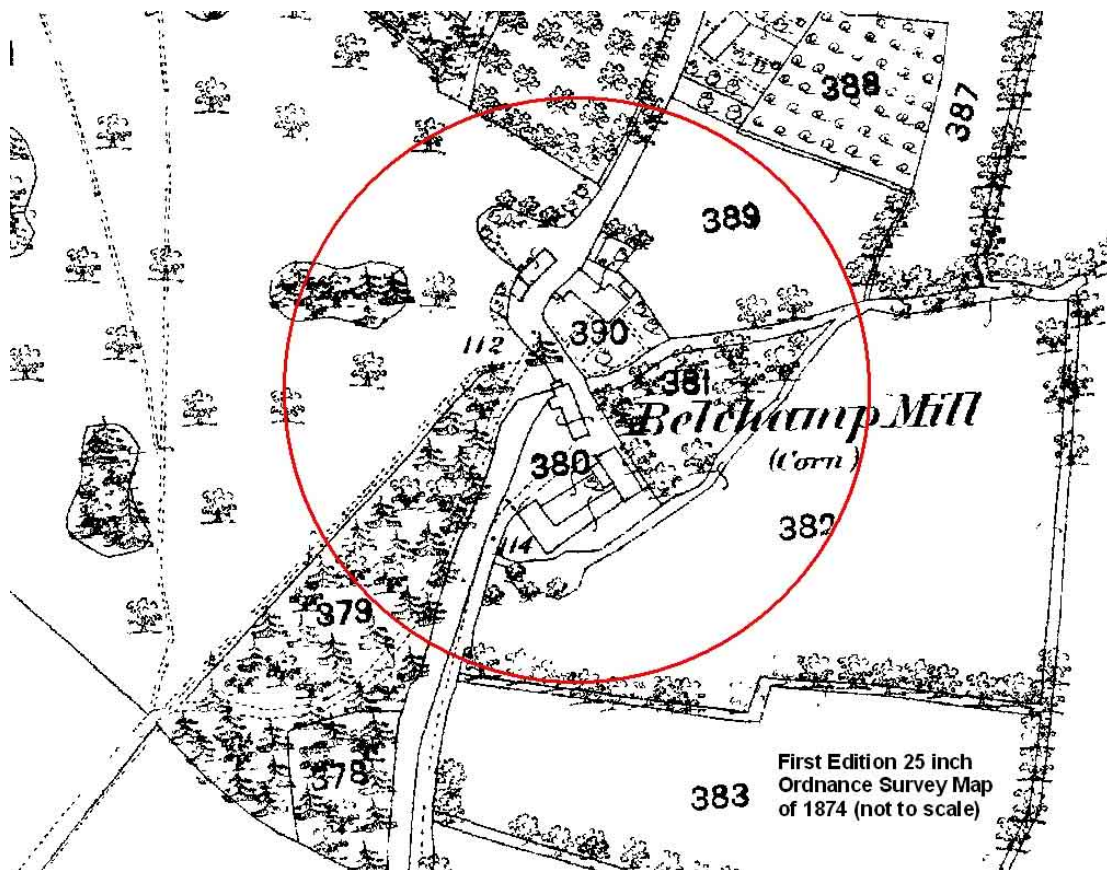
RECOMMEND ACTION

Belchamp enjoys some statutory protection through Conservation Area Designation and has some group value with the adjacent farm house, but as it stands the mill would not meet the criteria for listing.

MANAGEMENT

The mill is starting to suffer from a lack of maintenance. The brickwork shows signs of localised subsidence in the form of cracking, some small areas of weatherboarding are missing and the corrugated roof, although weathertight appears to be nearing the end of its life. The building requires some attention and investment by the owners to halt its gradual slide into dereliction. If the mill does become the subject of a planning application for residential use, recommendation should be made to record the mill at RCHME level 3 prior to the onset of works and that archaeological monitoring should be carried out during groundworks. The survey work should attempt to understand the history and development of the building and its site, and should be guided by the principle of trying to preserve as many as possible of the original features of the building.

GRADING */**



EHER 40509 Belchamp Mill, Hall Road, Belchamp Walter



Belchamp Mill looking north-west

SITE NAME	Blue Mill, Wickham Hill		
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PARISH	Witham	DISTRICT	Braintree
NGR	TL 83056 13140	EH	29020
RIVER	Blackwater	EHUID	113593

CURRENT STATUS	Con. Area	No	Listed	Grade II*	EBAR	No
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STATUTORY LIST DESCRIPTION

01/03/1950

An early C19 timber-framed and weatherboarded watermill adjoining the west end of the former Mill House, now called Mathyns. It stands back from the road in a picturesque setting with a 5 arched brick sluice way and a mill pond between the mill and the road. 2 storeys and attics. The windows are double-hung sashes with glazing bars, in cased frames. Roof slate, mansard, half hipped, with a hoist loft on the south front. The interior has fine C19 water mill machinery, not now working but repaired in 1949. Blue Mills Bridge, Blue Mills and Mathyns form a good picturesque group.

JOHN BOOKERS SURVEY

21/05/1971

C19 timber-framed and weatherboarded watermill in attractive setting, adjoining mill house known as Mathyns. On the evidence of insurance records the mill became disused after 1874 and by 1898 was used as a dynamo and accumulator for supplying electric power to the mill house. Nevertheless a waterwheel remains and some original machinery.

Present Use: Part of private residence

Condition: Good external preservation

SITE BACKGROUND:

There has been a mill on the site of Blue Mills since at least the medieval period. During its history the site has seen many changes in the buildings and the industry in which they were employed. From as early as the C15 and in a predecessor of the present building water power was harnessed to drive bellows for iron-making, but by 1542 the mill was adapted to fulling as at this date Henry Fortescue sold a 100 year lease to George Armond a cloth maker from Coggeshall. Historically the site is referred to as Machins (Machines), Mathyns (the title of the present mill house) or Blue Mills. It is possible that 'Blue' is a corruption of 'below' as the site of Blue Mills is the lowest of three mills in the Witham area.

Late C18 millers include Simon Jocelyn, John Firmin and Matthew Argent, followed by Moses Dean and by the 1820s John Pitstow who was declared bankrupt in 1822. A letter from C.G.Parker to Col. J.H. Strutt written in 1820 detailed the proposed auction of Blue Mills and its later postponement (EROD/DRA/E84), however the site was in use again by 1822 as it was insured by Kingsford and Co. of Maldon. The next millers were Joseph Bridge and Son who subsequently sold the mill in 1837 for £995 to Benjamin Dixon and Robert Walker Dixon. B.D & R.W Dixon, a milling family who already operated Wickham Mill downstream, were most probably responsible for the modernisation of Blue Mills with the installation of a new cast-iron waterwheel and the construction, in c.1869, of the brick built Mill Cottages (ERO D/HWiPb1/1/28) to the east. As the Dixons also installed a silk bolter in 1872, the mill was most likely used for both corn milling and textile preparation, the latter taking advantage of the buoyant silk and crape business of the second half of the C19. The Dixons sold the mill in 1875 to William Scrivener who may have brought in the roller plant, but in 1895 sold it for £1,680 to Dr. G.E. Grabham. The doctor converted the mill to power a

dynamo which lit the house and workshop and which still remained intact up until the 1970s.

Field Survey 2007

15/11/07

Blue Mills lies to the south-east of Witham and to the north-west of Wickham Bishops at the base of Blue Mills Hill. The principal buildings on site are all built in-line and facing south-west. They comprise a substantial later C18 brick-fronted grade II* listed mill house (EHER 29021) dated by a brick inscribed 1771 in the parapet, a ?C19 timber-framed grade II* watermill (EHER 29020) and between the two a part timber framed and part brick mill cottage. The watermill sits adjacent to a tail pool which drains into a short mill tail before it rejoins the river and passes beneath an C18 five arch grade II listed road bridge (EHER 29019). Associated outbuildings include a former stable range to the east of the house.

The watermill is a 2½ storey predominantly timber-framed and weatherboarded 6 bay mill with a double pile roof comprising a Mansard to the front and a pitched roof to the rear. Both roofs are built parallel to the long elevations and are slate covered with half hipped ends to the front and rear. A gable ended off centre **lucam** on straight braces projects out to the front, but also extends to the rear to unite the two roof pitches along the same axis. The rear range continues to the east by at least two bays and abuts a later C19 cottage also built in-line but set back from the frontage of the house and watermill. A modern lean-to glass and timber conservatory is situated within the angle of the eastern end of the mill and the rear range continuation. The windows are a mixture of styles but are generally, as those to the front, C19 multi-pane sash windows of 4x3 or 4x4 lights. Many have ovolo glazing bars and particularly those of the façade (ground floor) have been inserted into the pre-existing wall frame below the mid rail. The smaller windows of the west end are also C19 and contemporary with the mills enlargement (see below). Possibly one of the most notable and unusual features is the stable clock by Charles Frodshaw perched on the eastern gable wall below the attic window.

Internally, where the original timber-frame remains it is primary braced, the main structural members are pegged and it is constructed from a mixture of oak and pine, some of which is re-used and much having waney edges (suggesting use of smaller trees). This is typical of C18 framing as good timber is both expensive and becoming more scarce. Central to the ground floor is a line of storey posts which rise up through the building to support the floors above and ultimately the roof valley. Some modern brickwork and two modern timber joists have been inserted to support the floor toward the western end. Here a distinct departure in style is present in the spinal brick wall and the two binding joists of the western bays. Both joists are machine cut Baltic pine synonymous with the influx of timber from the Baltic regions which seems to peak during the second half of the C19. As Baltic marks are also present on adjacent wall framing an enlargement of the mill in the later C19 and around c.1880 (pers. comm.) may be inferred. The addition of the extra bay to the west also explains why the present **lucam** appears to be off-centre, as in its original form it would have been central to a 5 bay mill.

The ground (or spout) floor still retained a number of technological features including the remains of two waterwheels and associated wheel pits, a **pit wheel** and a number of pulleys and shafts. The remains of the two waterwheels lie within the two eastern bays of the rear range. All that remains of the western wheel is the circular section axle shaft and a later cast-iron pit wheel with wooden cogs. The cast-iron eastern waterwheel is almost complete, although the wooden **paddles** and a number of starts are missing. This **low breast** shot eight spoke cast-iron wheel is mounted onto an iron axle and comprises two complete rims (halves) each fabricated in

quarter sections. The eastern pit wheel no longer remains and has been replaced by a pinion used to power a heat pump. It is thought that prior to the removal of the stones, three pairs were driven by the wooden wheel and three by the iron wheel. It is clear based on the materials used in their construction that these wheels belong to different periods of development. The wooden shaft is thought to date to the earlier C18 (c.1730) while the eastern waterwheel survives as an early example of an iron wheel which may date from c.1780 (pers. comm.). The **shut** mechanism to both wheel pits still remains to the north, while to the west of the pit wheel is a pulley mechanism with a twelve inch flat leather belt that once powered auxiliary machinery on this floor and a driveshaft on the floor above. A C19 bandsaw by Wurr & Lewis, a portable grindstone and some line shafting in the western bays are the only other notable survivals at this level. No physical evidence of a traditional stone drive and **hursting** remains.

The straight flight to the first floor is no longer extant although some straight flights do still remain particularly from first to second floors. Neither the stones nor their replacement rollers remain on the first (stone) floor. This floor is dominated by a driveshaft straddling the eastern bays of the rear range. The shaft is unusual in that it is half timber and half cast-iron, connected end on end using a claw clutch. Both shafts include three belt pulleys which presumably once powered the rollers and screens on this floor. Two of the windows of the front elevation have boarded lower sections, which may have been a means to improve ventilation. A sack chute is present toward the western bays and at the junction with the C19 enlargement. The structural layout at this level is interesting in that the binding joists do not run in-line wall to wall but are joggled or off set to almost form half or intermediate bays.

The second (bin) floor is essentially divided into two levels; a lower level which mainly comprises the remains of grain bins, although a small area to the east of the bins has been reserved for the clock mechanism and a upper level with a considerable raised gangway or boarded catwalk giving access to the lucam and both the front and rear roofs. The lower half of the Mansard roof timbers (front range) i.e. up to the purlins, are waney edged, white washed and primary braced. However the upper roof (above the purlin) is a later reworking built using machine cut timber and with a ridge board. The earlier high collars have been refitted back into the upper roof while the entire roof has been clad with roof boards. The roof structure of both roofs comprise a series of raking struts which rise up from the ties below to support the outer purlins and the valley purlin at bay intervals. The upper rear roof is a pitched side purlin construction with a ridge board, suggesting a C19 date. In common with the front roof it has also seen some rafter replacement. The catwalk is set at a level just below the purlin height to enable enough head room to operate the sack hoist, of which some pulleys and its mechanism still survives.

The changes in roof profile between the front and rear ranges and the disharmony in the setting out of the binding joists as noticed on the first floor are indicators that the two parallel ranges are not wholly contemporary and would benefit from detailed analysis of the timber framing to determine an exact development sequence. However from the evidence gathered during this visit it appears the rear range, or its roof at least has been considerably reworked during the C19 and possibly at the same time it was enlarged to the west. These events show this to be a complex building dating from the C18 and not the C19 (as in the listing), which has been reworked or rebuilt many times.

Present Use: Unused but well maintained as part of residential site
Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18/C19	Timber/Brick	High
Mill House	C18	Brick	High
Bridge	C18	Brick	Med-High
Mill Cottage	C19	Brick/timber	Med (curtilage)
Stables	?C19	Timber	Med (curtilage)

ARCHAEOLOGICAL POTENTIAL

Despite its latter reuse for office accommodation Blue Mills still retains some elements of its technology and furniture but has lost most. The building is structurally intact, has not been overly compromised by unsympathetic enlargements or alterations and is clearly a complicated structure built over a number of chronological phases. The present owner has re-established the open plan nature of the working floors following its sub-division associated with a former office use. He currently has no specific long term plans for the mill but opens the mill to visitors on the annual Mill Open Days.

SITE SIGNIFICANCE

A good but typical example of an Essex country watermill. However along with the cottage, house and bridge the site has significant architectural and historic group value and is one of the more picturesque and complete mill sites in the county.

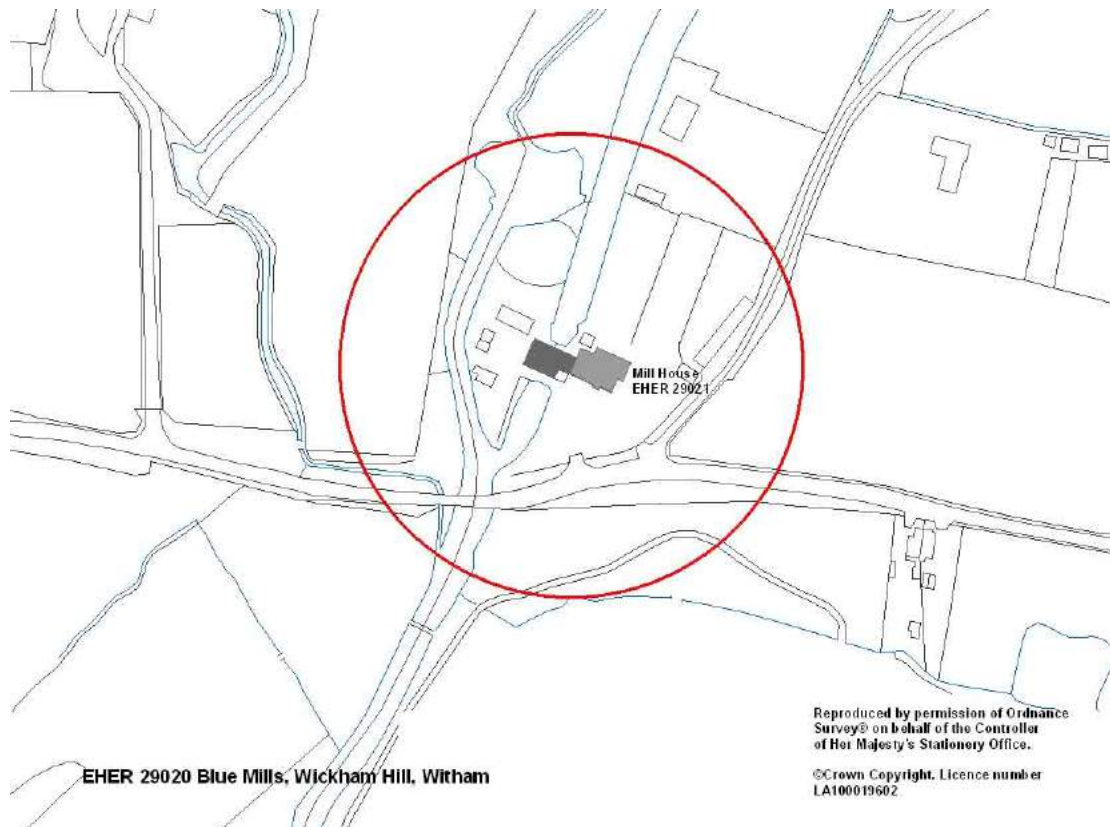
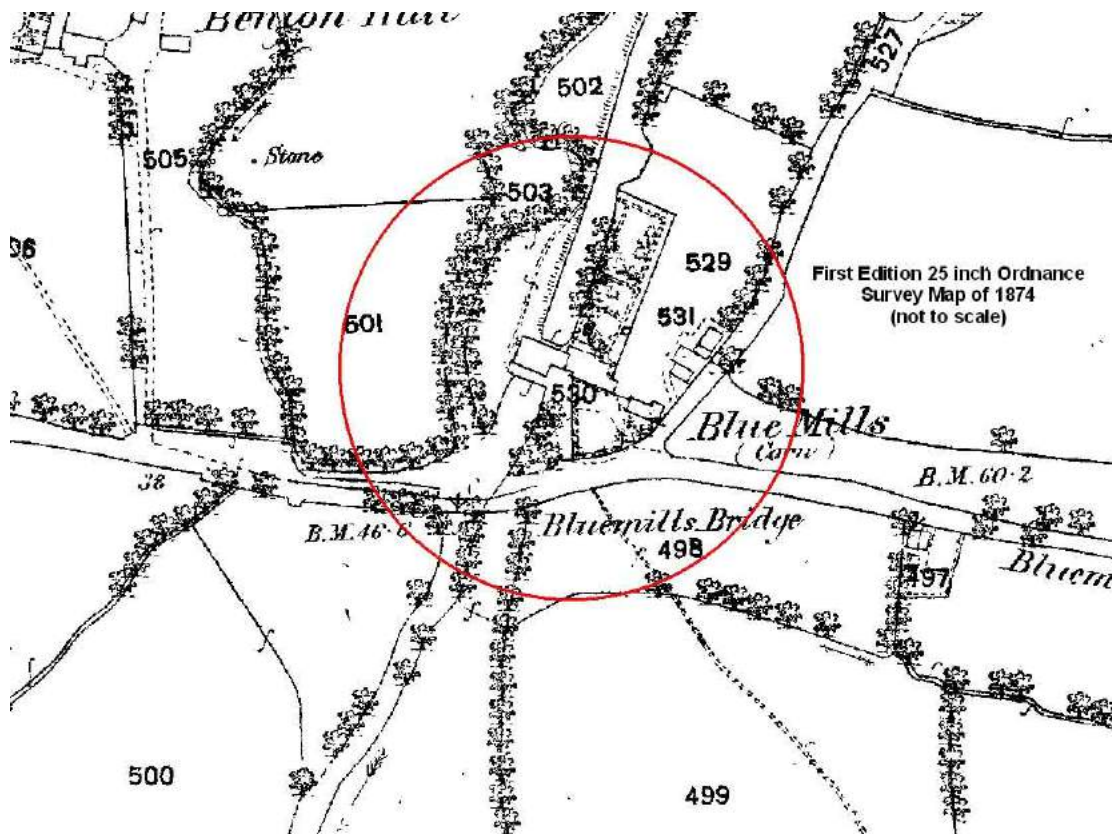
RECOMMENDED ACTION

Maintain its II* listing although the C19 date given to Blue Mills in the list description should be re-examined

MANAGEMENT

If the mill becomes the subject of a planning application for residential and/or other re-use all efforts should be made to preserve its current levels of historic integrity. Prior to any agreement an impact assessment should to be carried out to inform conservation bodies of the significance of the building, sensitivity of areas within the building, importance of its technology and the likely impacts of any proposed development on the fabric. These issues can then be addressed through mitigation.

GRADING ***





Blue Mills looking west-north-west

SITE NAME Borley Mill, Borley Hall, Borley

PARISH Borley **DISTRICT** Braintree

NGR TL 85856 42966 **EHHER** 28467
RIVER Stour **EHUID** 115756

CURRENT STATUS **Con. Area** No **Listed Grade II** **EBAR** No

STATUTORY LIST DESCRIPTION

22/08/1986

Watermill. Mid C18. Timber framed and weatherboarded with red plain tile roof. 3 storeys. 3 window range C18 and C20 vertical sliding sashes with glazing bars. Gabled lucam on arched supports, vertical sliding sash window with glazing bars. Red brick plinth. Small lean-to extension at right hand with single vertical sliding sash with glazing bars. Rear wing is of 2 parallel ranges, projecting to south west, timber framed and weatherboarded with red plain tile roof. Late C19 vertical sliding sash windows. Red brick stack.

JOHN BOOKERS SURVEY

09/02/1970

Timber framed and weatherboarded mill of c.1800. Three storeys with lucam and tiled roof. Despite completeness of external view the mill has virtually no original fittings left. Water milling ceased in 1942/3, the iron waterwheel was scrapped and motive power was then taken from a Lister diesel engine, which was superseded by electric power c. 5 years ago. The waterwheel was reportedly external and although the E. wall has been rendered there is a small brick arch, which accommodated the shaft and bearing, in the S. side wall. On the first floor are the remains of shafting and pulley/cog wheels in the ceiling but apart from a chain hoist rising through the building no early equipment survives. The mill finally closed in September 1969.

Present Use: Recently redundant

Condition: V. Good

FIELD SURVEY 2007

18/06/07

Borley mill lies immediately north of the C15 Borley Hall (EHER 28465) and at the southern end of a long sweeping track off Hall Road which in turn crosses the path of the former Marks Tey, Sudbury and Bury branch railway line. The present mill lies at short distance to the east of the natural course of the river Stour and on the south side of its mill pond, which lies within a loop fed by and draining into an earlier leat cut for a predecessor of the present mill. A sluice at the junction of the earlier leat and the head of the mill pond enables excess/flood water to be diverted back to the natural course of the Stour.

Borley mill is a large and once very productive C18 mill which dates between 1780-1812. It is built onto a brick plinth and is timber framed using Baltic pine and primary brace construction. The mill is 3½ storeys, weatherboarded with a gable ended and plain tile roof. Central to the façade at eaves level is a gabled **lucam** supported on curved brackets while projecting to the south is a two storey half brick, half timber cottage with a double pile roof. An engine house with accompanying brick stack was located against the northern elevation and to the rear of the wheel house. Following the mills closure in 1969 and its conversion to residential in 1971 the engine house was demolished although the stack, now truncated and capped, remains. During the mills conversion the wall plinths were rebuilt, the frame was repaired and where necessary replaced, new windows (mainly replica sashes) and doors were inserted and the weatherboard was replaced. Internally the straight flights, floor boards, internal spaces and all milling equipment was removed, including the remains of

shafting/pulley wheels and a chain hoist reported by Booker in 1970. The Baltic pine posts and joists are the most striking and probably the only original fabric to survive the conversion. Built in line and abutting the southern wall of the mill is the mill cottage. Reportedly it is built in two phases (C18 and C19) with each roof of the double pile representing a different build. It too has been extensively renovated. To the north of the mill is a range of former C19 stables now used for storage. Photographic evidence show the stables once incorporated a central lucam suggesting its attic storey was used as a hay loft, for additional grain storage, or both. The sluice built at the junction of the two leat systems remains in place but no longer retains its three gates. The sluice gate originally worked on a ratchet system and is similar in design to the working C19 example at Pentlow mill. The mill, associated buildings and waterway are all in good order and currently in use.

Condition: Good

Use: Residential

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Later C18	Timber	Med-Low
Stables/sheds	C19	Brick	Low
Mill cottage	Later C18/19	Brick/Timber	Low-Med
House	C20	Brick	Low
Sluice	C19	Iron	Low-Med

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of building works associated with its conversion to residential use no significant technology, fixtures or fittings survive within Borley Mill and few original external features remain. This synopsis can also be applied to the adjacent stable block and adjoining mill house. The sluice has also been compromised by later alterations.

SITE SIGNIFICANCE

A large later C18 timber framed watermill of little significance due to extent of its conversion to residential use. It does share some group value with the adjoining mill house and stable block and the site should continue to be recognised for its local historic interest.

RECOMMENDED ACTION

Maintain current level of grade II listing

MANAGEMENT

Borley mill and adjacent buildings are presently in use as a private residence and as commercial premises and as such are well maintained. Should the opportunity present itself an internal inspection is recommended and/or an historic building survey at RCHME level 3 should be recommended if the mill becomes threatened by significant alteration or demolition.

GRADING *



Borley Mill looking south-east

SITE NAME Bradford (Canes) Mill, Convent Hill

PARISH Braintree **DISTRICT** Braintree

NGR TL 76248 24330 **EH** 27946
RIVER Blackwater **EH** 113669

CURRENT STATUS **Con. Area** Yes **Listed Grade** II* **EBAR** No

STATUTORY LIST DESCRIPTION

25/10/1953

A C18 timber-framed and weatherboarded mill, still in use. It stands in a picturesque position beside the River Blackwater. An irregular group of buildings. The south end has a gabled hoist loft above the 1st storey and the windows are horizontal sliding sashes with glazing bars. The windows on the east front are casements. Roofs tiled.

JOHN BOOKERS SURVEY

31/08/1973

This is probably the mill built in 1655 by John Bacon of Bocking who was referred to in that year for 'erecting a new overshoth myll upon the main streame where never any was before'. Wm Daniell of Braintree, clothier, by his will of 1671/2 bequeathed to his brother Paul Daniell, a fulling mill called Bradford Mill. This mill is also presumably the mill for which John Smeaton designed a new waterwheel in 1772. An C18 or earlier weatherboarded and tiled mill with timber-framed and plastered mill house. The mill is on two levels and much of the water wheel remains and can be seen from Bocking Bridge. There are later additions and alterations to the rear but the frontage is largely preserved and remains one of the earliest mills still in use.

Present Use: In use but not by water power

Condition: working order

ERO SOURCES: (Q/SR 364/29), (D/DU 203/29), (D/DO L1), (D/DO P2, 2A)

SITE BACKGROUND:

Bocking mill lies adjacent to the weir, mill stream, mill pond and an attractive road bridge adorned with cast-iron lamps in the shape of dolphins. Two other listed building lie within the mill complex, these include the mill house and the stables. The mill stood redundant for many years but a recent examination of the mill has revealed it to be a rare example of an 18th century fulling mill. Originally it was single storey with a loft and apparently open sided where it faced onto the river. In the 19th century the front of the building was raised in height and it assumed the characteristic appearance of a corn mill (Andrews, D). All of the listed buildings have been restored and two new houses have been built in the yard to the rear.

Between 1832 and 1888 Bocking Mill was worked by the Green family. In 1836 it had three floors, four pairs of stones and a six foot fall. When Robert Rutland Green sold up it had seven pairs of stones worked by both water and steam. For three generations it was in the hands of the Cane family, initially William Stephen Cane and then his son John Wagstaff Cane, the latter installing a gas engine to drive the four sets of stones. Until recently the mill still produced pellets and cubes for animal feed but using modern electric powered plant. The last proprietor John Cane removed the wheel but left the buckets visible in the tailrace, as a memorial to the old days (Benham,1976).

Field Survey 2007

20/07/07

Bocking Mill lies at the north eastern end of Bradford Street and at the base of Convent Hill. It overlooks Bocking Bridge and is opposite the Franciscan Convent and Chapel of Immaculate of Conception, Bocking. The mill is situated on a spit of

land between the natural course of the Blackwater (E) and the mill leat, running parallel to the west. A modern sluice and weir diverting excess water from the mill leat back to the river lies at a short distance to the north. The mill leat continues for a short distance to the south along the western side of the mill and into the wheel pit, built central to the overall range but within the rear bay of the taller front range. The section of leat south of the sluice and particularly in the area of the mill race is completely silted up.

Bocking Mill (EHER 27946) forms the principal building of a small group of three associated listed buildings including an C18 mill house (EHER 27945) and an C18 former stable block (EHER 27944). All are presently in private residential use and at the time of the survey access was not available. Orientated approximately N-S across the mill leat, Bocking Mill is a 3½ and 2½ storey, timber framed and weatherboarded mill with plain tiled gable ended roofs. It comprises two distinct sections with a tall 'mill like' range to the south and roadside and an in-line but lower gabled range to the rear (north). Although the building mainly dates to the C18 the taller roadside bays (south) were heightened during the C19 (Andrews, D).

The taller southern range incorporates an in-line over sailing **lucam** in the gable of the southern roadside elevation. Supported on straight braces, the lucam overlies a taking-in door central to the second floor and an off-centre loading door on the first floor. A large C19 2 storey lean-to projects east from the southernmost bay and forms a continuation or catslide with the main roof. It is the largest of a number of accretions to the eastern elevation. As both the lean-to and the main building are clad in the same beaded weatherboard, it seems likely the whole building was re-clad in the C19 following its heightening. The windows are mainly C19 horizontal sliding sashes with glazing bars although casements and fixed glazing with C19/20 lead lights have been inserted. The water wheel was located in the northern bay and at the junction with the lower range. The wheel pit is built in red brick in Flemish bond up to the level of the first floor and has a large brick arch over the tail. The waterwheel **floats** remain visible although Benham reports that the waterwheel had been removed by the last miller. The lower rear range worked in unison with the southern bays and is a 2 or 2½ storey timber framed and primary braced range with weatherboarded elevations and a plain tile roof. A gable dormer lies to the rear (N) of the taller front range while a small weatherboarded outshut projects east from the northern bay. Some of the windows have been recently altered but they still broadly mirror the fenestration depicted in early C20 postcards of Bocking Mill.

The mill house appears to date to the C18. It is a two storey house with a hipped Mansard roof with plain tiles and a pargetted refronting. A gable ended plastered and weatherboarded range incorporating a loading door in the rear bays extends to the rear of the main house. Immediately SW of the mill house is a brick and weatherboarded stable block with a three window range comprising sash windows under segmental brick arches and a pair of stable doors with hay storage above.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Timber	High
Mill House	C18	Timber	Med-High
Stables	C18	Brick/Timber	Med-High
Sluice	C19/C20	Iron/Timber	Med

ARCHAEOLOGICAL POTENTIAL

Due to the conversion of Bocking Mill to residential use it seems unlikely that significant levels of technology, internal fixtures or fittings will survive within the present structure. However the building clearly has a complicated functional and developmental history which merits further investigation.

SITE SIGNIFICANCE

Bocking mill has been identified as a rare example of an C18 fulling mill, typically converted to mill corn in the C19. It forms part of a group of textile/fulling mills built in the Braintree area and group value along with the listed mill house and adjacent stable block.

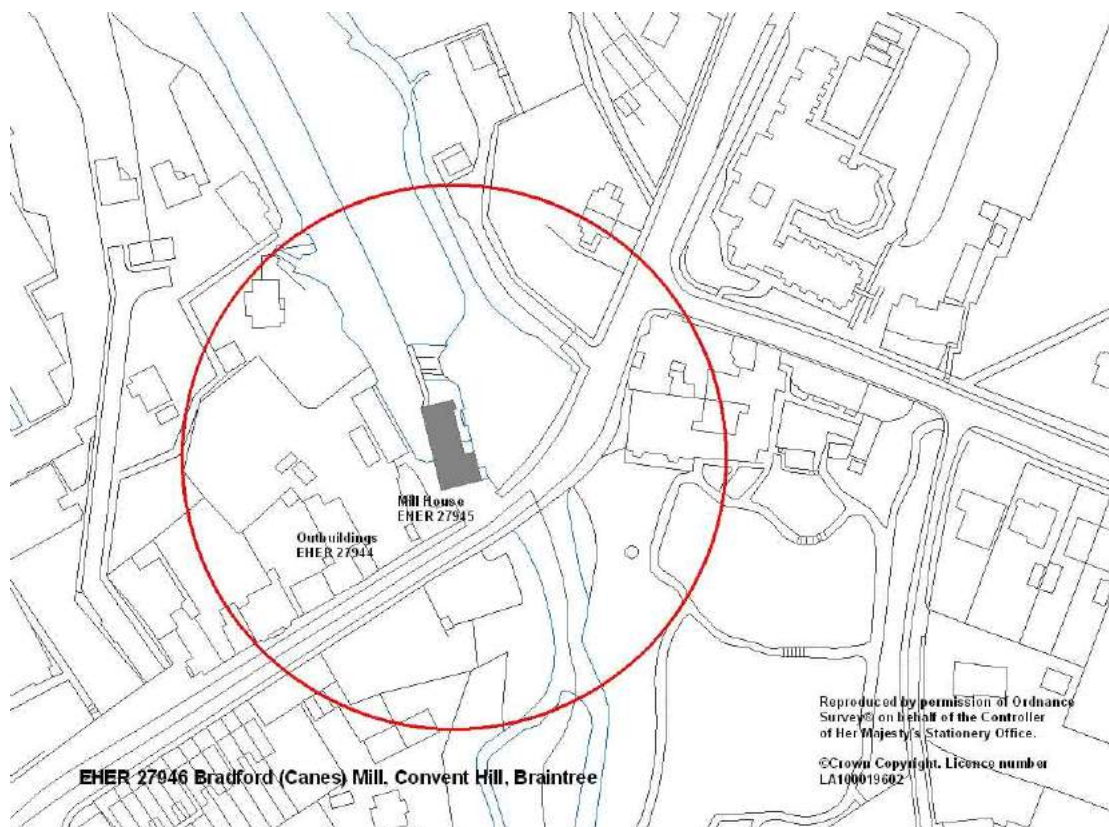
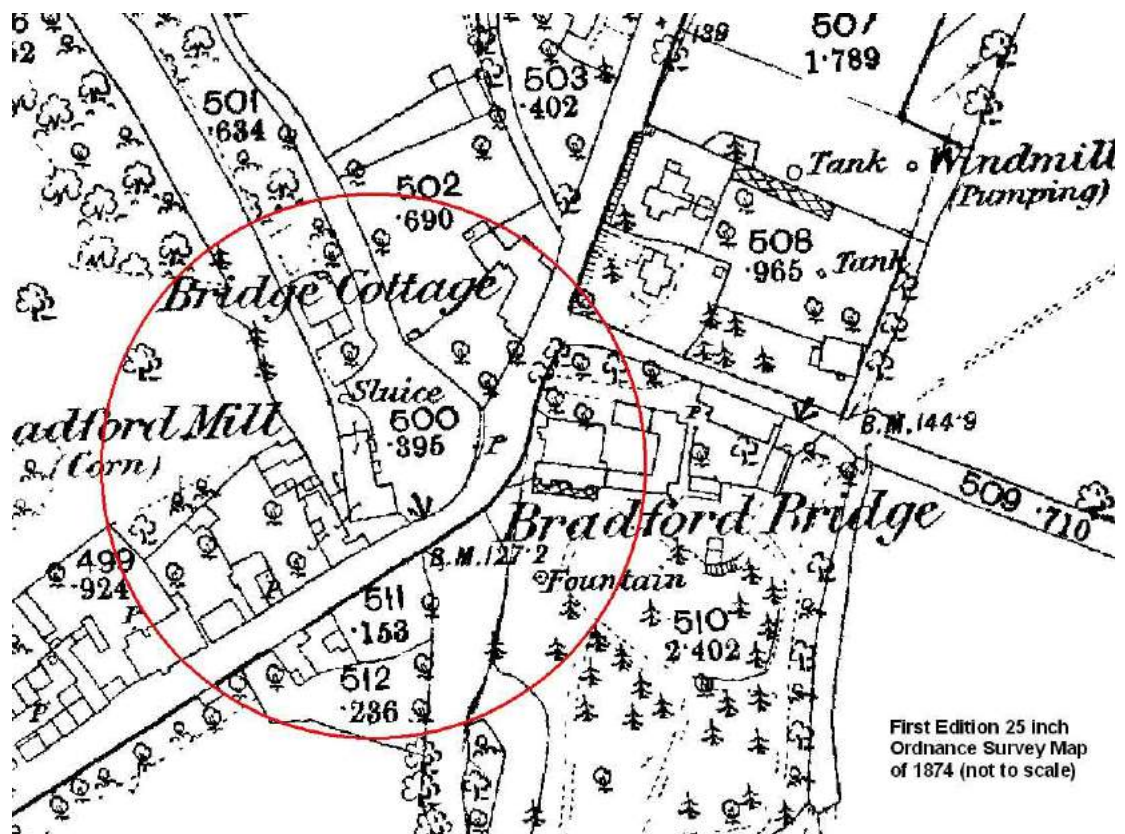
RECOMMENDED ACTION

Maintain its Grade II* Listing

MANAGEMENT

Bocking Mill is currently in private ownership, occupied and well maintained. Should the opportunity arise an internal inspection of the mill is recommended to assess internal spatial configurations and survival of technologies fixtures and fittings.

GRADING **/**





Bradford (Canes) Mill and Mill House looking west



**Bradford (Canes) Mill
looking north-north-west**

SITE NAME Bulford Mill, Bulford Mill Lane, Cressing

PARISH Cressing **DISTRICT** Braintree

NGR TL 77330 20396 **EH** 29968
RIVER Brain **EHUID** 116369

CURRENT STATUS **Con. Area** No **Listed** **Grade II** **EBAR** No

STATUTORY LIST DESCRIPTION

29/07/1988

Water and steam mill. C19. Mill mainly of red brick in English bond, partly timber framed and weatherboarded, roofed with slate; engine house of gault brick in English bond, roofed with slate. Mill of rectangular plan aligned approx. NE-SW, with road adjacent to SW and SE elevations. 4 storeys and loft. Engine house abutting at E corner, one storey. The mill is of brick on the first 3 storeys, weatherboarded above. The SE elevation has on the ground floor one plain door, on the first floor 2 tripartite sashes of 8-16-8 lights with gauged segmental arches and a loading door, on the second floor 3 similar sashes and a loading door, and on the third floor 4 small fixed lights; weatherboarded lucam with slate roof, projecting from low-pitched main roof. The NW elevation (towards Black Notley) has on the first floor 3 similar sashes, on the second floor 3 similar sashes and 2 small lights, and on the third floor one large and 4 small fixed lights; segmental arch over millrace. The NE elevation has on the ground floor one similar sash, one early C19 sash of 16 lights, and a window aperture with gauged segmental arch, reduced for a small casement; on the first floor one blocked similar aperture; on the second floor one C19 casement of 20 small lights with a segmental arch, and a blocked aperture for a loading door, with segmental arch; on the third and loft storeys 2 casements each. 2 projecting purlins in each pitch of roof. The SW elevation has on the ground floor one early C19 sash of 12 + 12 lights with a gauged segmental arch; and on the loft storey 2 casements. The engine house has in each long elevation 2 cast iron windows each with a semi-circular arch with projecting keystone, and one similar window in the NW gable end; large sliding doors occupy the whole SE end; low-pitched roof. The chimney has been demolished, but formerly stood to the NW. Bulford was a fulling mill from 1804 to 1813, and was then converted for corn. 'In 1882 it employed 16 men and boys, had 6 pairs of stones, 3 worked by an overshot wheel and 3 by an engine. In 1892 rollers were installed and next year the wheel was replaced by a turbine, after which the stones were used only for barley. With this roller plant the last miller, Francis Blyth was producing flour till 1947.' (H. Benham, *Some Essex Water Mills*, 1976, 58).

JOHN BOOKERS SURVEY

26/08/1973

An interesting and attractive building with a handsome millhouse. The mill is C19, 4 floors, the lower half in red brick and the upper timber-framed and weatherboarded with a lucam. The roof is slated. Little machinery is reported to remain but the mill pond, which is above the level of the adjacent house, is interesting as is a sluice by which water descends under the lane to the valley bottom.

Present Use: Largely disused

Condition: Fair

ERO SOURCES: (D/DA c 94-101), (D/D HF E 3), (D/F 21/5),

SITE BACKGROUND:

Records show that there has been a mill on this site since Little Domesday (1086) when it was one of two mills in Notlea owned by Count Eustace of Boulogne. As a manorial mill to Cressing it later passed into the hands of the Knights Templar. There is a reference to a 'thulling mill' in 1556 and description of a mill in the mid C17. By

1707 a mill at Bulford is in the possession of William Draper of Adgcombe Place, Surrey, who renovates or rebuilds the mill and leases it to Daniel Wade. The mill undergoes another renovation in 1780 by Thomas Nottidge and remains solely as a fulling mill until it is acquired by Joseph Savill in 1804. Savill introduced corn milling but continued with fulling reportedly 'set his fulling stocks to work there' and in 1813 'set my spinning machines to work'. Working together with his other mill in Bocking, Savill acquired many lucrative contracts including the supply of cloth to merchants as far afield as Portugal. However, his enterprise failed and by 1813 he sold to Richard Dixon who converted the mill solely to corn milling. When Dixon bought the larger Wickham Mills, Bulford passed to John Ridley (1827) and by 1848 to James Catchpole. A steam engine and house was added by 1862 just before the mill passed into the hands of William Horsenail and Henry Catchpole in 1863. In 1892 rollers, working with and not replacing the stones, were installed and in the following year (1893) a turbine replaced the 18ft diameter overshot waterwheel. From 1895-1897 Bulford was worked by Harrison and West, from 1897-1914 by Cramphorns and finally from 1914-1947 by Francis Blyth. Judge J.C. Llewellyn bought Bulford Mill and Mill House in 1947 and immediately closed down all milling operations but adapted the turbine to generate electricity for his estate. The complex of buildings at Bulford were split up in 1992 and the mill was sold to Roger Tabor, who sympathetically restored the mill to its present condition. It is now in residential use.

Field Survey 2007

12/09/07

Bulford Mill is the principal building amid a complex of mill buildings including a brick built granary, an engine shed and a fine Grade II listed Mill House (EHER 29971) with a range of stables, cart lodge and barns to the rear and along the road frontage. The mill sits within an historic landscape shaped by the requirements of the miller. To the north the mill leat runs roughly parallel and to the east of the natural meandering river course of the Brain. The mill leat bank channels water to the mill and to the overflow sluice which drains under Bulford Lane back to the River Brain, just north of the mill. Although this sluice has been rebuilt an earlier timber sluice thought to date from the C18 was recently revealed. Between the leat and the Brain is the mill marsh, which absorbs, stores and gradually releases flood water. The mill tail is culverted below Bulford Lane and along the front (west) of the Mill House to emerge c.32m south of the mill. To the north and east of the mill are the tenterfields, historically used in cloth production. A windmill working alongside Bulford Mill once stood on high ground to the rear of the mill and further along Bulford Lane, in the direction of Cressing.

Bulford Mill lies to the east of Black Notley and along Bulford Lane. It straddles the mill leat on an approximate E-W axis and lies immediately west of an C18 granary building and opposite the mill house. It is an impressive 4½ storey 4 bay mill partly built in red brick with a timber framed weatherboarded upper storey and gable ends. It has a slate covered gable ended roof with an off-centre cantilevered and gable ended lucam projecting to roadside (S). A small gault brick engine house, now used as a garage, abuts the mills NE angle and once formed part of a larger mill structure (demolished) built along the eastern end wall (see historic plate). The present main access into the mill reuses an original aperture in the east wall at first floor and replaces (functionally) the original main entrance at roadside, as this is no longer safe due to road traffic. An original cart loading door with gantry lies off centre at first floor while a wider taking in door (now French doors) is situated above and within the central bays on the second floor. The windows of the front and rear elevations comprise the original large multi pane double hung sashes with narrower side lights, arched heads and gauged brick voussoirs. They are equally spaced at bay intervals across the first and second floors (for security no windows were built at ground floor), although the symmetry is interrupted by the two working doors in the façade. The

windows of the third and attic storeys are also mainly contemporary with the building and are either smaller multi-pane sashes or casements. The brickwork is laid in English bond and includes bricks with burnt headers and diagonal 'squish' marks both consistent with an C18 date. The lower brick courses of the SW angle have been cut back and rounded off (corbelled) to facilitate the passage of larger vehicles along Bulford Lane. An examination of the main structural walls revealed that they rested on substantial step foundations and that the walls were heavily constructed at the base/ground floor levels and stepped in (narrowed) at each storey. As they stepped back they also incorporated the storey posts at bay intervals which supported the main structural floor beams.

Although the mill is now in residential use much of its heavy machinery, fixtures, fittings and equipment remain intact and for the most part in situ. Many of the millers tools are still in the mill, including the lewis, blocks for turning the stones, levelling steels, families of weights, C19 sacks with the Bull logo, a precursor to the later Clipper ensign used at Bulford and the mill ladder (as seen on historic plate). The turbine, roller mills, screens, line shafting driving the rollers, stones and auxiliary machinery, networks of chutes, three mill stones with tuns and the sack hoist are the main technological survivals. Following a visit to Bulford in 1976, Benham reports:

'From the old wheel pit the turbine shaft rises up through the mill with a bevel on the second floor to a layshaft to work a dynamo, grindstone and sack hoist. On the ground floor the shaft drove three pairs of stones by V belts, the take off for the rollers was not clear. There is no provision to disengage the drive so presumably the belts were fitted or removed as required. The arrangement is that the stones (by Whitmore and Binyon) stand in line and not the usual layout of a ring around the spur wheel'.

The wheel or turbine pit is located in the western bay at ground floor level. The external turbine gate control remains in functional use although it is now closed down to limit water to the **turbine**. An iron upright shaft from the turbine rises through the building, but on its journey power is taken off using either a system of pulleys or a bevel gears and line shafting. Built along the northern (rear) wall of the ground floor is an iron hursting supporting a series of three in line pulleys. Each pulley under-drives a set of stones and is in turn driven from the upright shaft using a number of leather V belts, some examples of which still remain in situ. The **tentering** to the stones could be adjusted at this level. By association with the mill stones it is likely that this pulley system and possibly the removed overshot wheel were manufactured and installed by Whitmore and Binyon. Whilst the lower floors were used for fulling and the upper floors for milling when the mill operated as a corn and fulling mill, all visible evidence of its fulling history appears to have been removed. Air channels built alongside the part culverted race within the building and around the basement area were included to help ventilate the ground/basement floor and help alleviate damp within the brickwork.

Three sets of in-line mill stones located toward the rear (northern) wall and within the central and eastern bays are the main feature of the first floor. The stones are French Burrs by Whitmore and Binyon and all still retain their **circular tuns** and some still have their **hoppers** and **shoes**. A part glazed and timber board millers office with contemporary furniture, still remains in the north eastern corner of the floor (which was reportedly sound proofed using old copies of Millers News). A **straight flight** to the second floor is situated in the opposite NW corner and a hatched stair to the basement (ground) in the central bay along the north wall. The majority of the straight flights were retained within the re-development, although most remain unused as a modern newel staircase was inserted along the eastern wall. Many older pine floor

boards remain on this floor and the floors above while of particular interest are the double width Elm boards which span the western bay above the wheel pit. The **roller mills** and the line shafting and take off pulleys powering both mills and ancillary apparatus were situated on the second floor. A roller mill by Robinson & Sons with an attached grindstone and wooden chutes lies central to the floor and to the rear (N) of the upright shaft. The latter meshes using a bevel gear to two lay shafts set at right angles E-W and N-S. A series of pulleys along the shafts drove floor mounted apparatus using drive belts and the wooden **sack hoist mechanism** above. Access to the third or bin floor and roof space was not possible although reportedly the grain bins are untouched apart from some slight alterations to enable access. Interestingly many still display graffiti on the lapboard partitions and a sketch of the mill showing the engine houses and square stack. The hopper bottom bases of the bins are still visible from below and many have now been re-used by inserting central 'down lights'.

Attached to the NE angle of the mill is the engine house of c.1862. It is a small gault brick building with a slate gable ended roof and tall arch headed cast-iron framed windows in its long elevations. A modern full height garage door has been inserted into the south gable wall, probably following the demolition of the building it previously butted up to. It is currently used to house the Harrison and West millers dray (cart) which was in use between 1897 & 1914. Further to the east is the granary in which a chaff cutter driven by belt from the engine house was installed in the C19 on first floor. It is now in residential use.

Source: Pers. Comm: Roger Tabor 2007

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C18	Brick/Timber	High
Engine House	C19	Brick	Med-high
Mill House	C16/C19	Timber/Brick	High
Granary	C18	Brick	Med-high
Stables/cart lodge/barn	C18/19	Brick/timber	Med
Sluice	C20/C18	Concrete/timber	Med

ARCHAEOLOGICAL POTENTIAL

Although Bulford mill has been reused as a domestic dwelling the conversion guided by the conservation team at Braintree DC was sympathetic to the building and its history and as such the mill retains many original features and much of its C19 technology, fixtures and fittings. Bulford Mil may also retain evidence of its original use as a fulling mill and potentially archaeological evidence of a former mill site.

SITE SIGNIFICANCE

Bulford Mill survives as one of an ever diminishing number of mills in Essex that still retain a significant amount of its milling technology, fixtures and fittings. Auxiliary structures such as the engine house remain as does a C19 millers dray once in use at the mill. In addition to the preservation of the mill structure and its contents Bulford Mill lies central to a group of associated mill buildings, including the listed mill house, granary, stables, cart lodge, barn and within an increasing rare historic landscape incorporating the watercourse, its mill marsh, leat bank and tenterfields, the latter associated with its original use as a fulling mill. Bulford survives as one of the most important mills in the county.

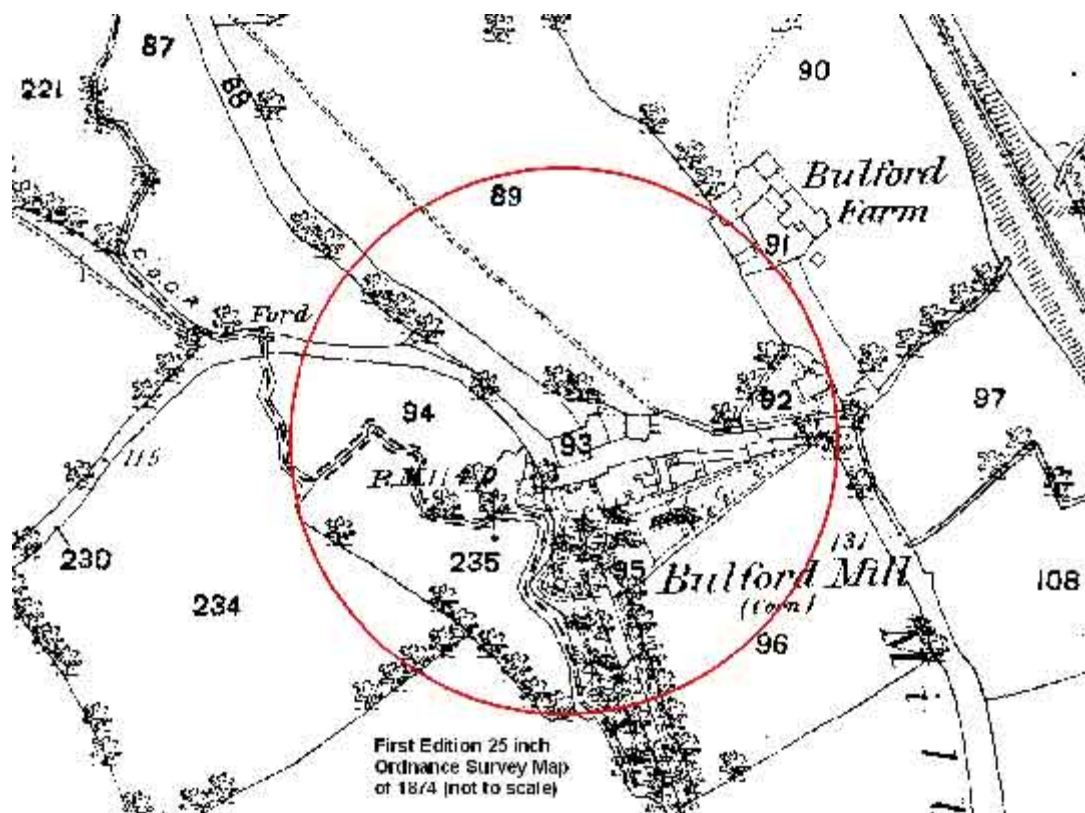
RECOMMENDED ACTION

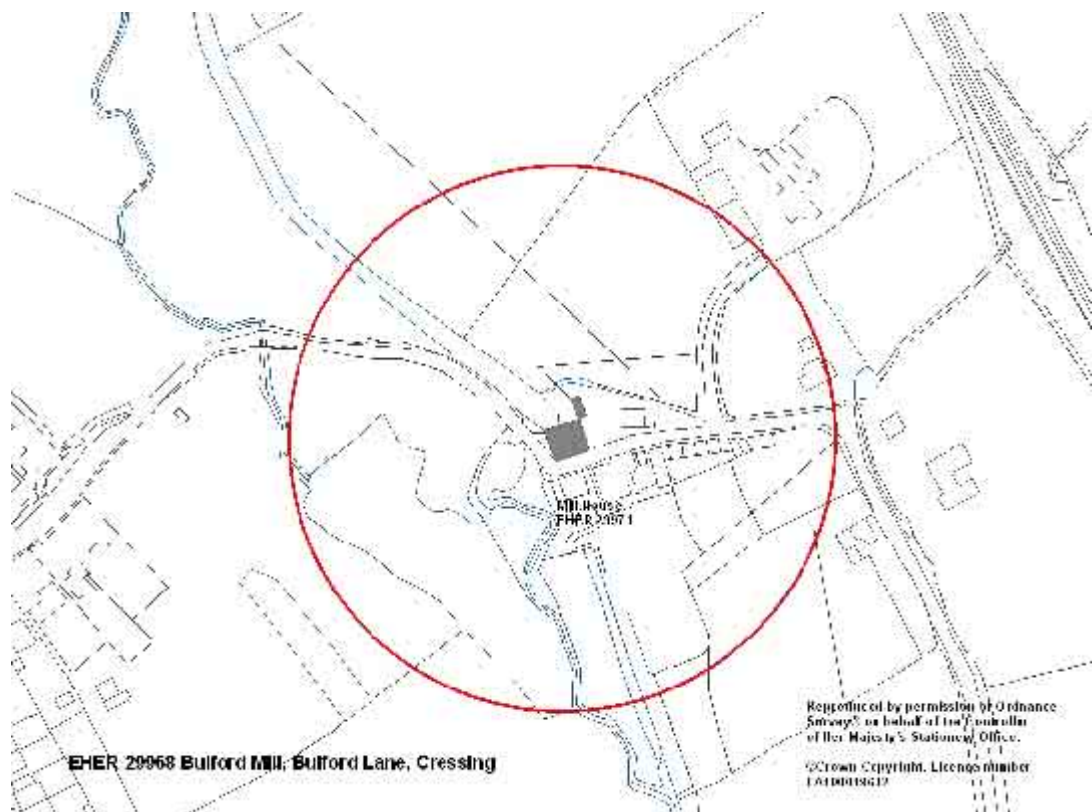
Based on the inaccuracies in the list description which should attribute an C18 build date to the mill and not its present C19 date, plus the levels of technological and historic survival, consideration should be given to upgrading the current Grade II listing of Bulford Mill to a Grade II*.

MANAGEMENT

Bulford Mill and adjacent buildings are all in private ownership and mainly in residential use. Should the opportunity present itself an internal inspection and/or historic building survey at RCHME level 3 or 4 is recommended should the mill, engine house, millhouse and outbuildings become threatened by significant alteration or demolition.

GRADING





Late C19 to early C20 photograph of Bulford Mill



Bulford Mill looking north-east



Bulford Mill, extant in-line stone drive

SITE NAME Chalkney Mill, Colchester Road, Earls Colne

PARISH Earls Colne **DISTRICT** Braintree

NGR TL 87526 28386 **EH** 28713
RIVER Colne **EH** 115897

CURRENT STATUS **Con. Area** No **Listed** **Grade II** **EBAR** No

STATUTORY LIST DESCRIPTION

27/10/1975

Watermill, under conversion to a dwelling at time of survey, April 1986. Early C18, altered in C19 and C20. Timber framed and weatherboarded with some red brick, roofed with handmade red plain tiles. Main range facing E, of 2 storeys and attic. C19 rear extension, of 2 storeys, with lean-to roof of slate, and external stack at right side. C20 single-storey extension at right end, with lean-to roof of slate. 4-window range of C20 wooden casements, C19 cast iron casement of 20 lights in gabled dormer. 2 temporary doors on ground floor, plain boarded door on first floor. One C19 cast iron casement with Gothic Revival tracery in each gable. The interior retains the wheel pit with an iron shaft by Whitmore and Binyon of Wickham Market, the wallower and wooden spur wheel. Built as a fulling mill it was converted for corn milling in the C19, with 2 1/2 storey extension at the right end and an engine house and tall chimney to the rear, demolished since 1974. Last used for milling in the 1930s, (H. Benham, Some Essex Water Mills, 1976, 78).

JOHN BOOKERS SURVEY

28/09/1973

A total ruin in which the roof has virtually collapsed. Originally this was an interesting building in an attractive setting. Mainly C18, weatherboarded (although areas missing from the east wall) two storeys and the remains of a tiled roof. Unusual windows with pointed heads to the upper panes. Adjacent brick buildings of former steam plant of which an elegant brick chimney is the main survivor. Mill house C18-C19 timber framed and plastered, some weatherboarding, slate roof, double hung sashes with glazing bars, central entrance with reeded architrave. In 1868 H.F. Hills, J.P. went into the business of his uncle, the owner of Chalkney Mill and subsequently took over the mill, plus Ford Mill and Overshot Mill in Colne Engaine, but closed the latter two due to competition from roller mills (D/F 27/3/2).

Present Use: Disused

Condition: Derelict and collapsing

SITE BACKGROUND:

Here one can clearly see how a later slated addition was built onto an old low built fulling mill to fit it for the C19 corn trade, with a curiously lopsided lucam squeezed in. Henry Hills and Co. worked Chalkney, Colneford and Overshot mills in 1863 and it was probably his enterprising firm who put in the steam plant whose tall chimney remains today. After Henry, Osgood Smith was the last full time miller, though the late Mr C. Walther, whose family now live in the mill house did some milling work in the 1930s. Afterwards the old machinery was beyond repair and the wheel and its four pairs of stones were removed, leaving only the spur wheel and Whitmore and Binyon wheelshaft (Benham, 1976).

Field Survey 2007

12/09/07

The present owner Mr. T. Walther bought the mill from his father in 1978 as a dilapidated wreck and converted it to residential use. As part of this work the majority of the derelict northern extension, added around 1865 by Henry Hill, was removed, leaving only its lower framing intact. This was subsequently reused and adapted to

form a single storey lean-to which now accommodates the kitchen. The brick built engine house and the elegant brick chimney, which both Benham and Booker refer to in the early 1970s, were also removed during these works.

Chalkney Mill lies to the east of Earls Colne, to the south of White Colne and along a narrow track running south from the Colchester Road down to the meandering course of the River Colne (NGR TL 87526 28386). Aligned N-S the mill sits astride the mill leat which flows from west to east and to the south of the natural river course. The mill tail emerges to the east from below the trackway running along the front of Chalkney mill and mill house, while a sluice draining into an overflow pool and ultimately back into the Colne lies at a short distance to the west. A collection of C19 and later outbuildings, sheds and stables lie at a short distance to the south. Chalkney mill is a 5 bay 2½ storey timber framed and weatherboarded former fulling and later corn mill with a gable ended and plain tile covered roof. It lies to the north of a 2 storey in-line but lower mill house with plastered elevations which abuts its southern gable end wall. The **wheel pit** is located within a central recessed (open sided) bay sited along the eastern front elevation. The ubiquitous **lucam**, was removed along with the C19 northern bays in the 1970s. At this point the entire mill was re-clad using modern softwood weatherboard and new window apertures and modern casement windows added. All the fenestration is modern apart from a C19 multi-paned casement in the attic dormer and a pair of casements with gothic tracery in both gables. An off-centre loading door lies at first floor and to the south of the wheel pit bay. This aperture and the opening in the southern bay at ground floor are original (although the doors are replacements). The door opening in the northern bay is a modern insertion associated with the mills subdivision into two properties. Internal access was not gained but the **iron shaft**, **wallower** and **wooden spur gear** still remain in situ (pers comm.)

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C18	Timber	Med
Mill House	C18	Timber	Med
Stables/outbuildings	C19/20	Brick/timber	Low-Med

ARCHAEOLOGICAL POTENTIAL

Given the levels of alteration survival of significant technology, fixtures and fittings in addition to those listed in the statutory description, is thought unlikely.

SITE SIGNIFICANCE

The dereliction of Chalkney Mill, its subsequent reconstruction, refenestration for residential use and the removal of the engine house and chimney stack have all had a major impact upon the historic significance of this former fulling/corn mill.

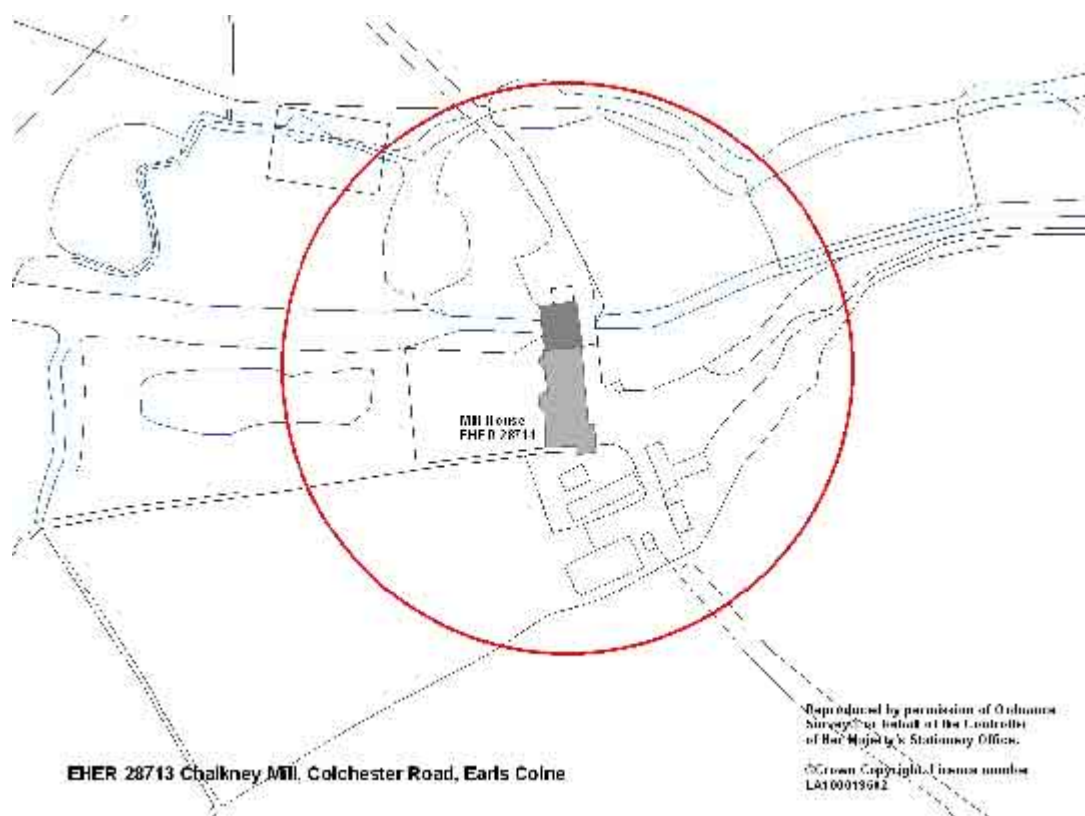
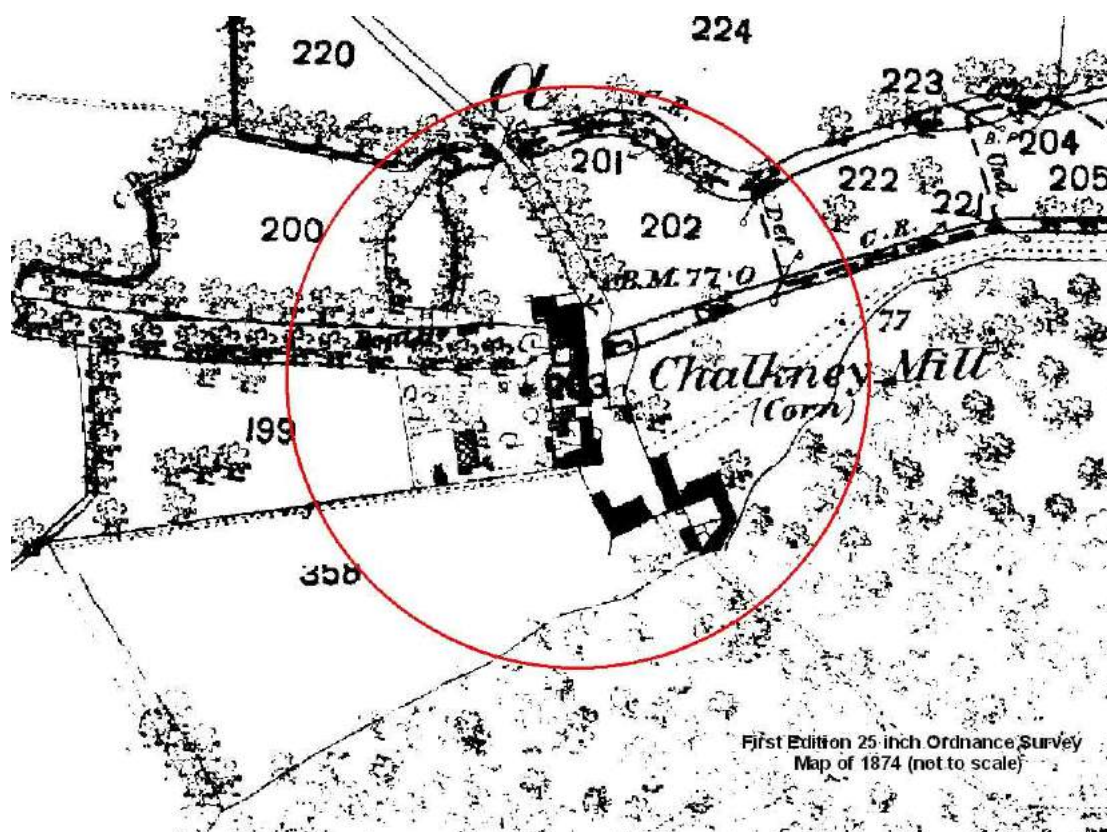
RECOMMENDED ACTION

Maintain current status

MANAGEMENT

Chalkney Mill and the adjacent buildings are presently in use as a private residence and are accordingly maintained. A historic building survey at RCHME level 2 or 3 is recommended if the watermill (or the site as a whole) become threatened by extensive alteration or demolition

GRADING */**





Chalkney Mill and Mill House looking north

SITE NAME Codham Mill, Codhams Lane, Wethersfield

PARISH Wethersfield **DISTRICT** Braintree

NGR TL 73532 28168 **EH** 28239
RIVER Pant **EHUID** 115649

CURRENT STATUS **Con. Area** No **Listed** **Grade II** **EBAR**
Removed 2007

STATUTORY LIST DESCRIPTION 02/05/1953

Water mill, C18, and house, C17 and C18. Timber framed, mill weatherboarded, house plastered, roofed with handmade red clay tiles. The mill and the C18 front part of the house form a continuous range facing S, the C17 part of the house extending to the rear. One internal stack at the rear of the C18 part, axial stack at the rear end of the C17 part, and C19 single-storey extension of painted brick with central stack beyond. The mill and front part of the house are of 3 storeys, the rear part of 2 storeys. The mill has on the ground floor one halved door and one horizontally sliding sash of 2 lights, on the first floor 2 plain loading doors, one of which is halved, and one C18 3-light window of which the central casement is missing, and on the second floor one similar C18 3-light window and one horizontally sliding sash of 12 lights, C19. The house has on the ground floor one splayed bay of early C19 sashes of 4-16-4 lights, on the first floor one C20 casement, and on the second floor an C18 3-light window with wrought iron central casement. 6-panel door, of which the 2 top panels are glazed, with open pedimented canopy, dentilled, on scrolled brackets, C18. Plaster quoins on both side of front elevation of house.

JOHN BOOKERS SURVEY 15/02/1972

The mill house and mill adjoin in an L plan; the house forms the north wing and is 3 storeys early C17 with a tiled roof. The mill forms the west wing and is 3 storeys, tiled, weatherboarded with loading doors on the first floor. It is reported that the mill still contains a wooden waterwheel, iron pit wheel with wooden cogs, wooden mainshaft and 3 pairs of stones.

Present Use: Disused

Condition: Quite Good

ERO SOURCES: (D/AMW 1/23), (D/DH t T295/5,7)

SITE BACKGROUND:

Deeds show that Codham Hall Mill was part of the Codham Hall Farm Estate from at least 1820-1905, and it is likely that it was Codham Hall which financed the mills construction in the C18 and possibly an earlier mill in the previous century. John Ashby came to Codham in 1903 after the previous miller Daniel West, had emigrated. His sons F. & S. Ashby continued until the mill finally closed in 1956. The later trade was in animal food, a business which becomes increasingly competitive during the first half of the C20 until it disappears as farmers invest in their own crushers. This is one of the few mills which relied on tooth removal for nut disengagement, so the cogpit provides a fine example of the simple layout which sufficed before pinion jacks. Wooden teeth in iron mortice wheels are favoured for the drive gear and the big wheel has wooden paddles mounted on a 17ft diameter iron frame. On the wooden upright shaft a compass arm spur wheel appears to have been removed on the stone floor to be replaced by an iron crown wheel on the floor above. The crown wheel drove a layshaft which powered flour dressing plant introduced in the C19. The building is sound and spacious, the old style machinery complete and well preserved, and the wooden paddles have lasted well. Codham

must rank among the mills which preservation and renovation would be both practical and rewarding (Benham, H. 1976)

Field Survey 2007

Codham mill has been in the ownership of the present incumbent since it closed in 1956. Since then very little work apart from general maintenance to the mill and house has been carried out. As such the list description (see above) has altered very little and according to the owner the heavy gearing listed by Benham in 1976 still remains but needs renovation, particularly the many wooden paddles of the water wheel. Although the mill was removed from the Buildings at Risk Register in 2007 after addressing the problem of invasive ivy, the mill still appears unkempt, the weatherboarding needs painting while some of the mill house windows and particularly the two mill house brick stacks need urgent repair.

Codham Mill lies to the east of Church End, Shalford, to the west of Little and Great Codham Halls and along a single track road which doglegs around the mill on its journey towards Beazley End. It is aligned approximately E-W across the mill leat, which flows from north to south and to the east of the natural river course of the Pant. A sluice is located c.125m to the north of the mill and at the junction of the leat and river Pant, the latter circumventing the mill to the west. The sluice mechanism is in a poor condition, lacking its gates, their runners and most of its winding gear and is as such inoperable. The super structure which bridges the watercourse has recently been renovated by the Environmental Agency. The **mill leat** is dry, which is normal for the summer months suggesting Codham was a winter mill or suffered unduly from water extraction. The mill tail emerges to the south of the mill and road and from below a brick bridge built with a single rounded arch and southern parapet wall.

The site at Codham comprises a small group of buildings either side of the road. The C18 mill and mill house are built in-line and front onto the roadside. A smaller but slightly earlier C17 former mill house, retained when the mill was rebuilt, projects to the rear (north) of the C18 mill house. It is in turn abutted to the north by a single storey C19 brick outbuilding. To the south and east of the road are a small timber-framed and weatherboarded granary and a barn. The two buildings to the south of the road are no longer associated by ownership with the mill.

The C18 mill and mill house are contemporary, continuous timber framed structures built in-line over 3 storeys with attics. It has a pitched roof with gables to the east and west and is covered with handmade clay plain tiles. Unusually the roof does not incorporate a lucam. The watermill is traditionally clad using weatherboard, which where original has a beaded detail along the soffit. A clear distinction in status is apparent between the working mill and mill house, as the latter is plastered, has plaster quoining to the façade and an elaborate pedimented canopy over the main entrance. The waterwheel and pit is situated within the westernmost bay of the mill and partially within a weatherboarded outshot projecting to the rear (N), out over the leat. The western gable end wall which flanks the waterwheel bay to the west was recently underpinned and a new sole plate inserted (pers comm.). A doorway into the wheel pit through the gable wall is present at ground floor level while a blocked window formerly lighting the attic storey is visible in the gable. A loading doorway with a halved vertical boarded door is at first floor in the eastern bay and above the main door into the mill at ground floor. Another loading doorway with a simple vertical boarded door lies to the west and one bay inset from the western end. The windows are symmetrically spaced across the facade of both mill and mill house. Original C18 three light windows with a central casement remain at first and second floors in the central bay and at second floor in the mill house. A C19 horizontal sliding sash of 12 lights is present in the western bay. The upper windows lie just below the eaves and

presumably directly underneath the wall plate. The mill house upper window has been slightly altered with the addition of transoms into the side lights and lies above a C20 Crittal casement at first floor and a C19 bay window at ground floor. A substantial rebuilt brick stack with oversailing courses and terracotta pots projects through the rear roof pitch of the C18 mill house. The ridge of the adjoining C17 rear range laps over the eaves of the later mill house to align directly with its stack. This two storey timber framed C17 house has plastered elevations decorated to roadside with simple pargetting, a gable ended plain tile roof and an axial stack built toward its northern gable wall. It has a side purlin roof with a c.45° pitch and a selection of C18 and C19 sashes and C20 casements. To the north is a single storey brick built outbuilding covered with a plain tile roof presently obscured beneath a healthy covering of moss and ivy.

Present Use: Disused although Mill House occupied

Condition: Fair but needs attention

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill and Mill House	C18	Timber	Med-High
Mill House	C17	Timber	Med-High
Outbuilding	C19	Brick	Med
Sluice	C19/20	Timber/iron	Low
Granary	C18	Timber	Low-Med
Barn	C18/19	Timber	Low-Med

ARCHAEOLOGICAL POTENTIAL

Codham mill still remains an unknown factor due to the reticence of the present owner to allow access into the property. However based on conversations with the owner and the general lack of alteration to the mill and mill house it seems likely that it does retain most of its historic and technological apparatus, fixtures and fittings, although given the general condition of the buildings, they may be in a poor overall condition

SITE SIGNIFICANCE

Codham Mill is a fine example of a three pair 'winter' mill. It survives as one of only a few mills in Essex that remains unconverted (residential or commercial) and due to levels of survival could potentially be brought back into operational use. Codham survives as one of the most important timber-framed watermills in the county

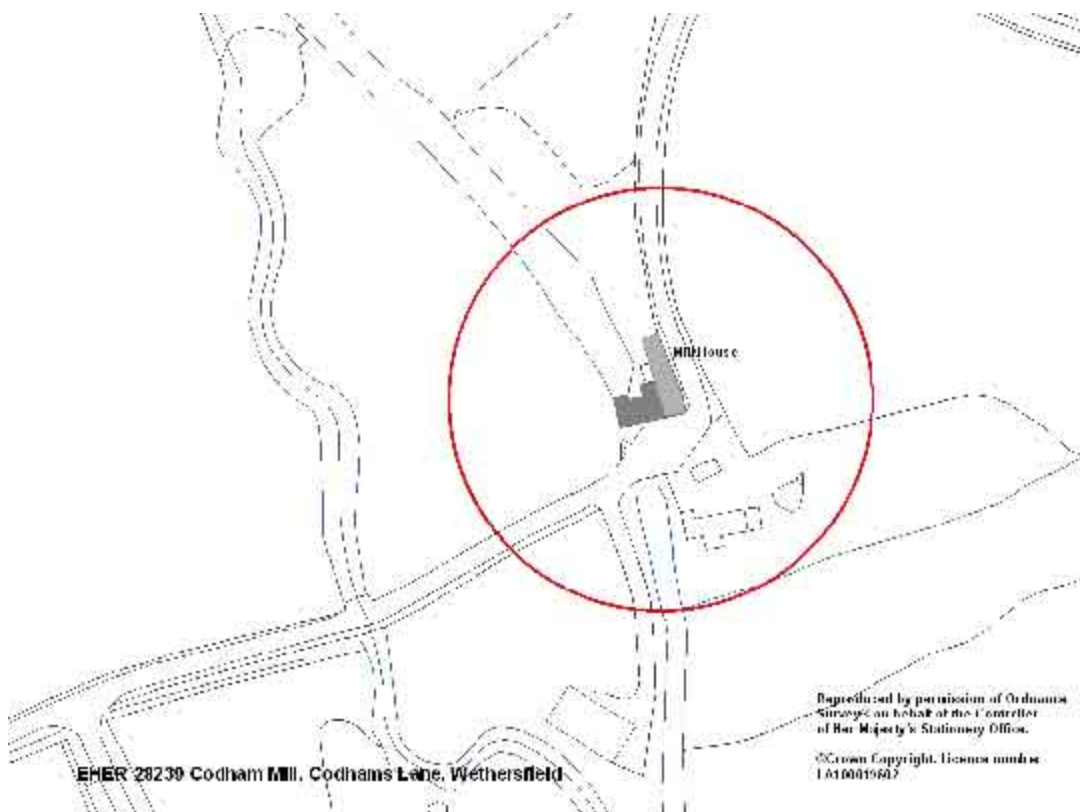
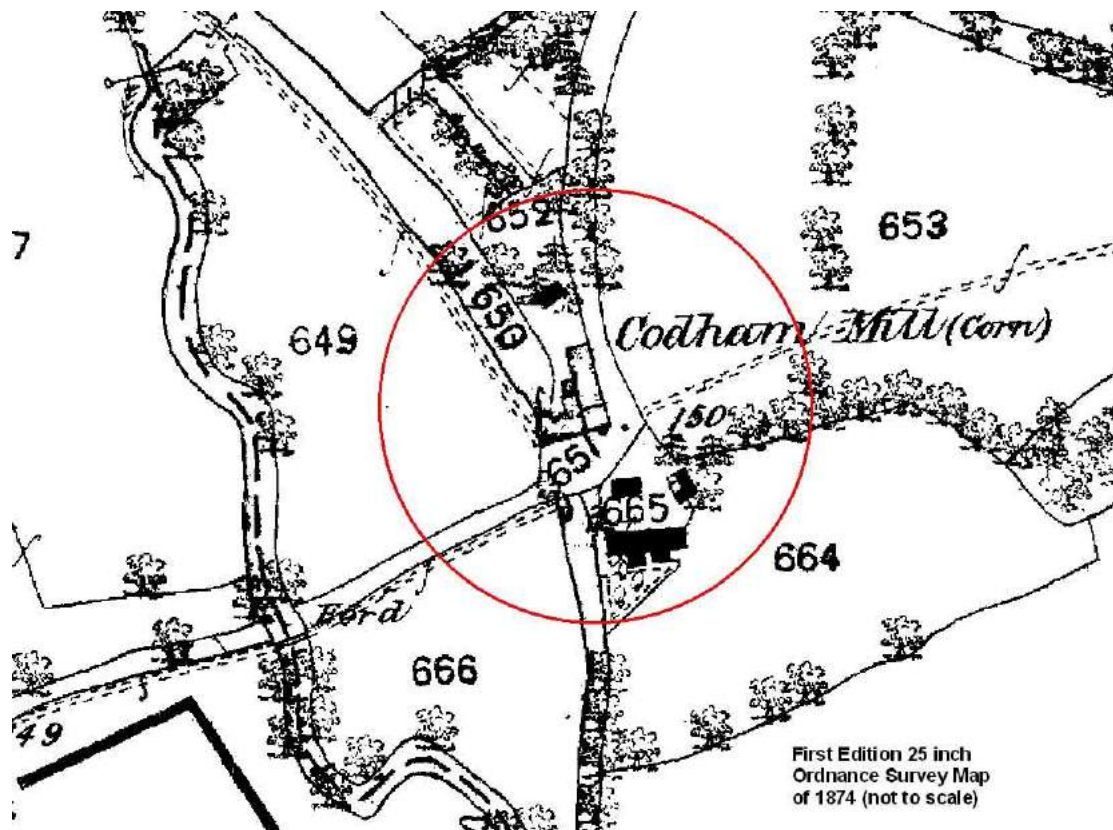
RECOMMENDED ACTION

Maintain the current level of designation. An internal inspection should be sought to establish levels of survival within the mill and accordingly re-assess the mills listed grading. The general condition of the mill and mill house should be monitored, particularly the condition of the brick stacks, with a view to placing the site back on the Buildings at Risk Register if deterioration continues.

MANAGEMENT

Codham mill is presently lies redundant apart from a secondary use as a general store/overspill to the adjacent house. The mill house is in use as a private residence and is along with the mill maintained on a basic level. If the mill becomes threatened by alteration, major works or demolition, its significance should first be considered by an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features, and then by a detailed historic building survey at RCHME level 3 or 4.

GRADING ***/****





Codham Mill and Mill House looking north-east

SITE NAME De Veres Mill, Castle Hedingham			
PARISH	Castle Hedingham	DISTRICT	Braintree
NGR	TL 78437 35545	EHER	45362
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

SITE BACKGROUND:

In 1974 the De Veres silk mill was set up in a disused former school along Church Lane, Castle Hedingham by the Humphries Weaving Company. Humphries were founded in Sudbury in 1971 but moved to Castle Hedingham to manufacture silk damasks and velvets on 10 handlooms rescued from the closure of the New Mills (EHER 15098) in Braintree (Alderton & Booker, 1980).

Field Survey 2008

14/01/08

The former De Veres mill is presently in use as a village/memorial hall serving the residents of the parish and situated along the western side of Church Lane and to the SW of St Nicholas's Church. The former school building was erected in 1858 and is typical of many small parish/church schools of the period built in a plain Tudor revival styling with stone mullion windows, buttressing and diaperwork. Built to an L shaped plan the present building comprises a full height gable ended, red brick five bay hall set perpendicular to the road with two lower gable ended ranges projecting north from the central bays, a small contemporary gable ended range abutting the halls south-western angle and a flat roofed modern extension in-filling the angle to the east. The C19 ranges are red brick in Flemish bond with plain tile roofs. The hall has 1858 in diaperwork on its eastern end wall and buttresses decorated with white brick built at bay intervals. The tall stone mullion windows remain intact although the original glazing has been replaced. No internal features associated with the buildings later use as a mill survive.

Present Use: Public Hall/Club House

Condition: Good

ARCHAEOLOGICAL POTENTIAL

Due to the buildings change of use from an industrial building to a public hall serving Castle Hedingham, all the apparatus, including the looms recovered from New Mills in Braintree have been removed and no fixtures or fitting associated with the buildings use as a silk mill survive.

SITE SIGNIFICANCE

Typical example of a mid C19 school house. As this building was not purpose built for textile manufacture and no longer retains any technology, the former premises of Humphries Weaving Co. has lost all connection with its brief textile past and as such retains little significance in the context of this survey.

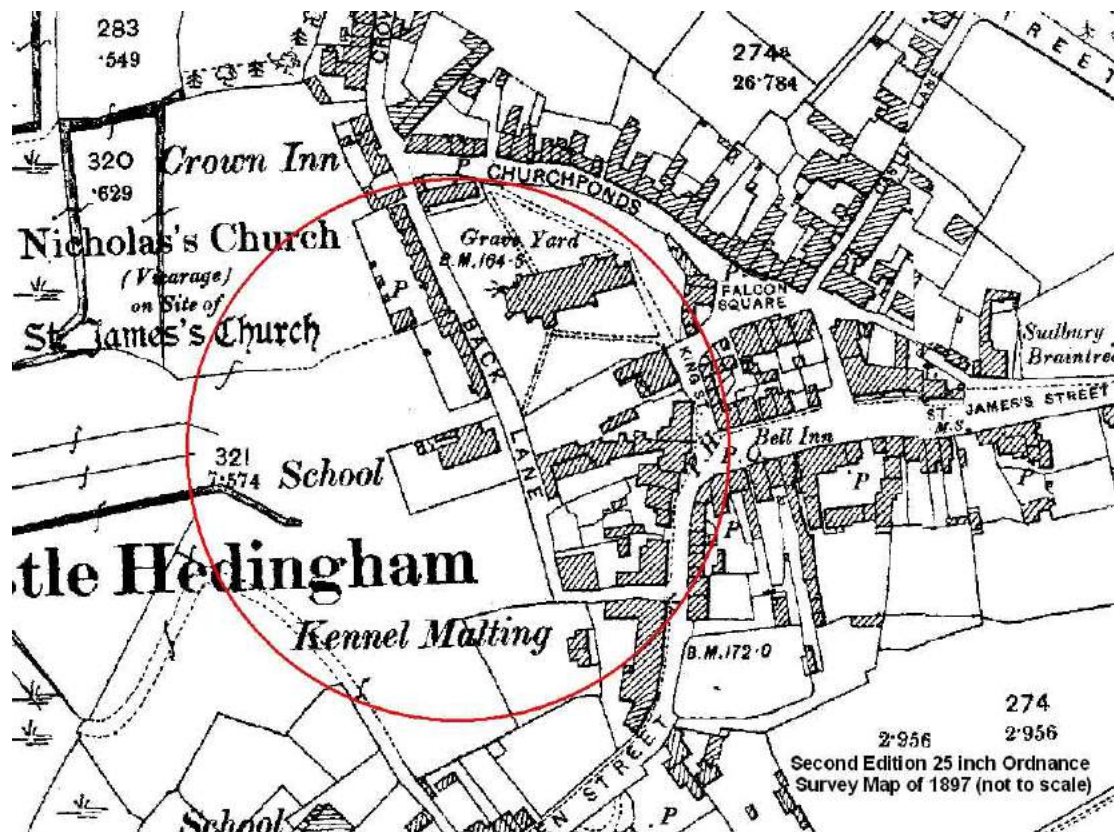
RECOMMENDED ACTION

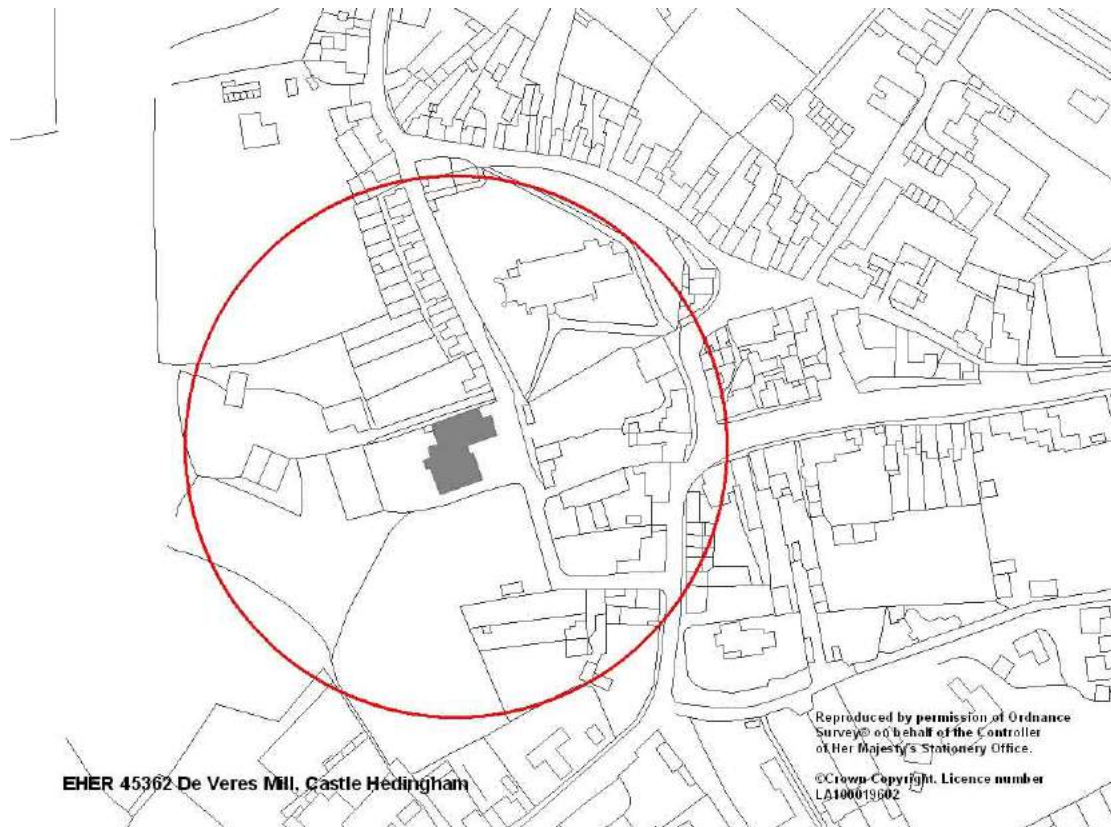
Given the changes of use, from school to mill to hall and the alterations that have been exacted upon the structure, it is evident that the former DeVeres silk mill does not merit listed building status. However it should be recognised as an important local building and included in future Local Development Documents.

MANAGEMENT

The former DeVeres Mill is presently in use as a community building and club house. An historic building survey at RCHME level 2 is recommended if the hall becomes threatened by significant alteration or demolition.

GRADING *





De Veres Silk Mill looking west-north-west

SITE NAME Crape Factory, Foundry Lane,			
PARISH	Earls Colne	DISTRICT	Braintree
NGR	TL 8565 2880	EHHER	15838
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NA	EBAR No

SITE BACKGROUND

Courtaulds built a winding & drawing mill here in 1883 to take advantage of the popularity in mourning crape following the death of Prince Albert. Steam power was used from the outset and it became one of the locations for the weaving of the new artificial silk in the C20 until it was closed in 1925. It was originally equipped with machinery made in the Hunts Atlas Works on the other side of Foundry Lane. Following its closure as a mill the building was then used by Hunts as a store. Today it remains in light industrial use and retains much of its external integrity including the chimney. Neither external nor internal inspection has been possible (Crosby, 2001).

Present Use: Commercial

Condition: Good

ARCHAEOLOGICAL POTENTIAL

A late C19 purpose built silk mourning crape factory built by Courtaulds. It became a site for weaving artificial silk in the early C20 and then became a part of the Hunts engineering business. Although externally it may retain much of its original character, internally it must have lost much of the original technology.

SITE SIGNIFICANCE

Its date of construction, function and associations with notable local business families render some local significance to the site, but it seems likely that it has lost its original internal technology. It is along with Pound End Mill one of only two industrial buildings built by the Courtaulds to remain intact.

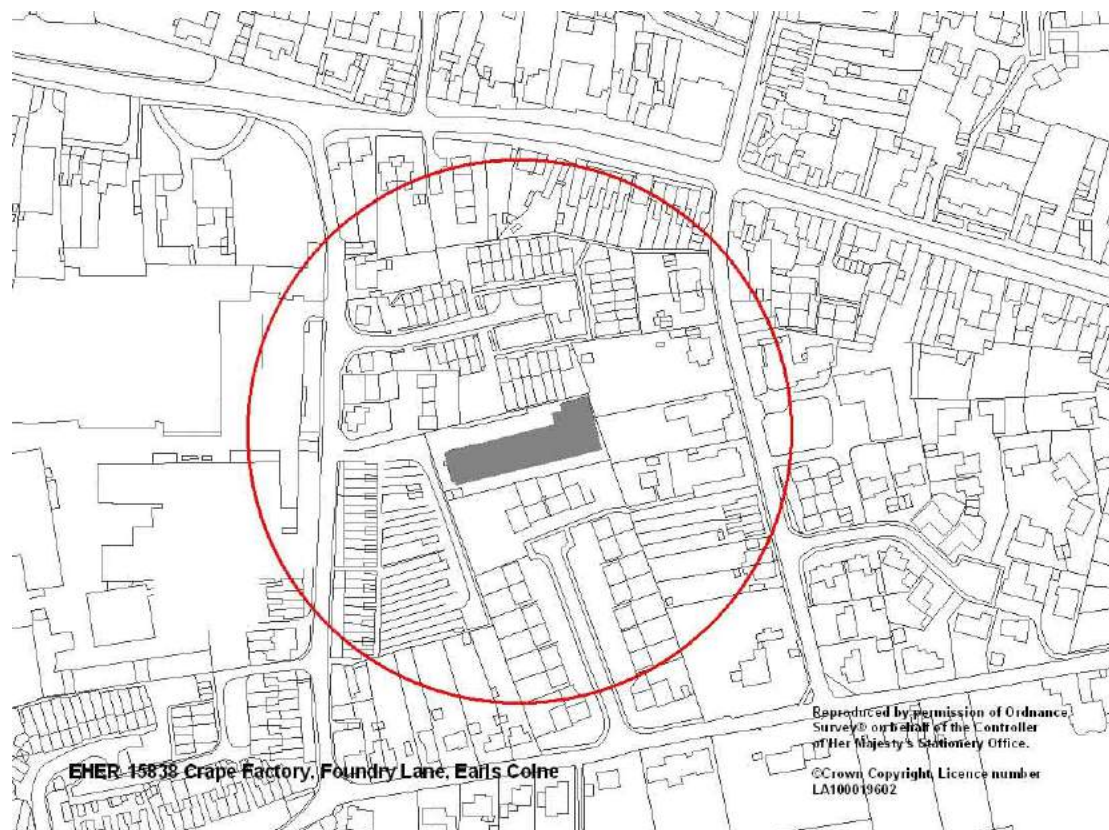
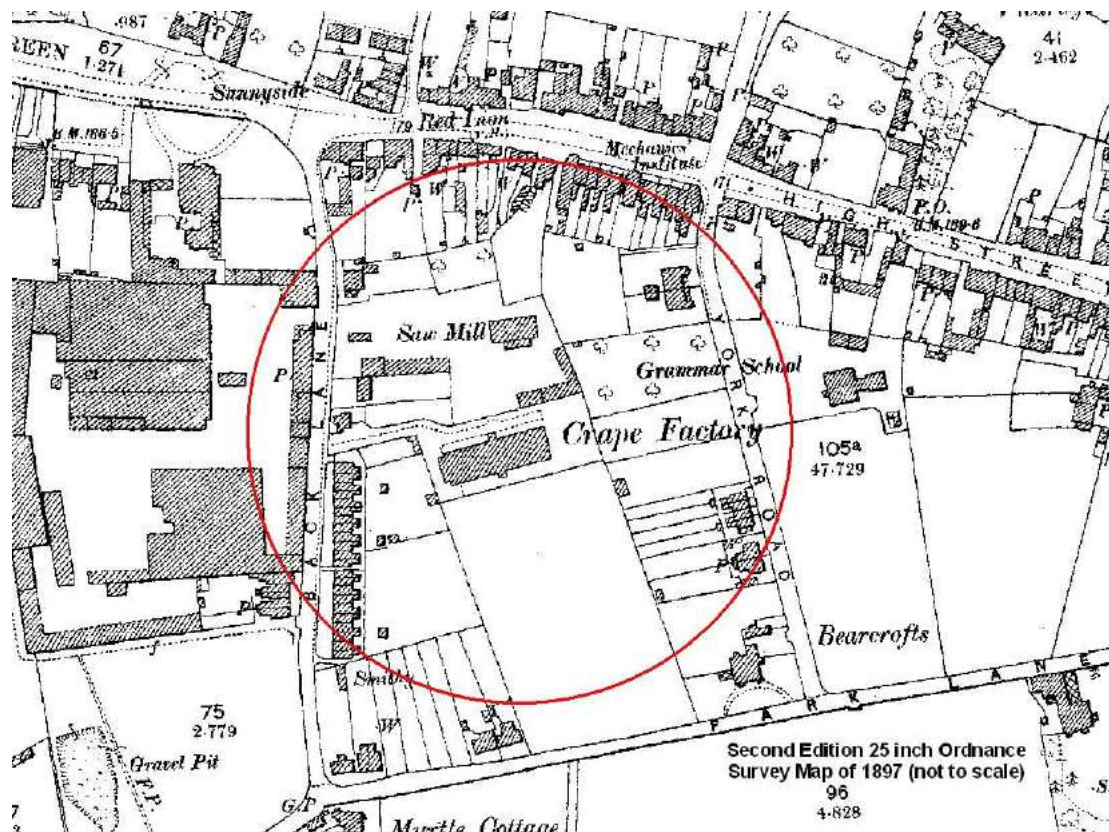
RECOMMENDED ACTION

Given the changes of use and internal alterations, it is evident that the former Crape Factory does not merit listed building status. However it should be recognised as an important local building and as such included in future Local Development Documents and/or local list.

MANAGEMENT

Still in light industrial use and fairly well maintained. A full external and internal inspection should be undertaken at the earliest opportunity and the building should be retained for its local interest; a detailed record should be undertaken prior to any major works and this should include a minimum floor plans, photography and textual analysis.

GRADING *





Earls Colne Crape Factory looking east

SITE NAME Easterford (Rogers) Mill, Swan Street, Kelvedon			
PARISH	Kelvedon	DISTRICT	Braintree
NGR	TL8669 219066	HER	8243
RIVER	Blackwater	EHUID	116569
CURRENT STATUS	Con. Area Yes	Listed Grade II*	EBAR No

STATUTORY LIST DESCRIPTION

21/12/1967

Water mill. C18, altered in C19. Timber framed, weatherboarded, roofed with handmade red plain tiles. Main range facing NW, abutting on Easterford Mill House (item 8/272, q.v.) at the right. Small single-storey lean-to extension to left. 3 catslide extensions of various dates and types to rear, the whole forming a rectangular plan. 2 storeys and loft. Ground floor, one early C19 sash of 16 lights, one C20 casement. First floor, 3 early cL9 sashes of 16 lights with crown and bulls-eye glass. One C20 door and one plain boarded door. External stair to another plain boarded door on first floor. Right end of roof semi-conical where it overlays the roof of Easterford Mill House. Lucam under repair at time of survey, October 1986. Gabled enclosure for hoist projecting above ridge behind lucam. One gabled dormer to rear, over cat-slide roof, lighting loft. 'Easterford, or Rogers', as it was often called after its last miller, is an outstanding survivor full of charm and interest. A typical three-pair country mill, it stands just as it gave up work in the 1930s without ever, so far as is known, employing auxiliary power. Damsels and shoes still stand on two of the stones with a simple system of adjusting the damsel's beat by leading the crook string over one of four notches cut in the horse frame. The wheel is all iron with flat paddles set on pegged wooden starts, and the wheel shaft is extended to carry a belt pulley on the side of the wheel opposite to the pit wheel. It seems surprising that so convenient an arrangement is not found elsewhere, but what use Kelvedon made of it is not now clear. Stone nuts, pit wheel and wallower are iron, but the spur is a fine old wooden compass wheel and the vertical shaft is also wooden. The stone nuts were raised by a simple screw and spanner device. The bridge trees consist in each case of two heavy timbers at right angles, with the member carrying the stone spindle set across the member raised by the tentering screw. The ends of both are tenons sliding in mortices, with the fixed ends held by iron pins which can be adjusted by a choice of holes. An advantage of what at first sight seems an awkwardly complicated arrangement is that the pinion jacks are rendered very accessible. On the stone floor the wooden sack hoist pinion is geared unbevelled into the compass arm crown wheel and the sack hoist pulley itself is exceptionally large, about four feet six inches in diameter. The building itself is curious, with the weight of the stage floor taken on an inside timber frame and the front wall of the mill itself supporting only the roof. It appears that originally the mill was a mansard structure of mid-18th century date but the thrust of the roof was so great that the feet of the upright posts kicked inwards. Big rough-hewn knees were fixed with large Colt screws in the angles between the tie beams and the vertical posts. Later the north wall was raised and a single span roof erected over it so that the eaves are now higher at the front than the back and the stage floor is lit by windows in the wall instead of the usual rooflights and gables.' (H. Benham, *Some Essex Water Mills*, 1976, 65-7). The inner timber frame is of hardwood, some of it re-used. Since the above report was written the corroded flat paddles have been replaced in steel. All the machinery remains in place. A new steel sluice gate is operated by the original cast iron gearing. The building is shown distantly in a photograph of c.1865 reproduced in B.L. Kentish, *Kelvedon and its Antiquities*, 1974, plate 7.

JOHN BOOKERS SURVEY

28/09/1973

C18 white weatherboarded mill of 2 storeys with lucam set into a tiled roof. 3 window range of double hung sashes. Now stairs up to entrance on first floor. Millhouse, C18, 2 storeys, timber-framed and plastered with tile roof.

Present Use: Part of private residence

Condition: Good

ERO SOURCES: (D/DHt T 149/11)

SITE BACKGROUND:

The earliest reference to Easterford Mill is a Manorial record of 1320. At the end of the C16 the Fownell family were the millers, Joseph Baker was incumbent in the 1820s, malting as well as milling and William Frost by the mid C19. Milling at Easterford ceased in 1929 when Mr Rogers, the last miller left milling to pursue a career as a dairyman. The mill was then purchased by Lt. Col. J. de G. Yule who lived in the mill house and is presently in the ownership of Mr Colbourne who has recently converted it to residential use.

Field Survey 2007

08/10/07

The present mill was originally built in the mid-18th century with a Mansard roof structure of contemporary date. This was removed in the C19 and replaced by the present gable ended roof following the heightening of the mill to the front. The re-profiling of the mill roof was not also applied to the mill house (EHER 25419) roof and as such the range now has an asymmetrical roofline. Due to the combined load of the roof and the machinery on the timber frame, large knees were fixed in the angles between the tie beams and the vertical storey posts. Easterford is unique in Essex in that it also has a separate inner timber frame built to support the load of the main machinery, thus leaving the outer walls to just bear the weight of the roof structure (Watkin & Watkin, 2006).

Easterford is a 2½ storey weatherboarded 5 bay mill with a plain tiled gabled ended roof which continues in a catslide to the rear to cover various later accretions. It has an off-centre gabled **lucam** projecting to the front (NW) which now is simply cantilevered from the surrounding roof structure as it no longer retains its straight bracing. There is a loading door at first floor toward the north-eastern end and the windows to the front are uniform C19 8 over 8 sashes. The mill and mill house are built in line and straddle the river Blackwater on a NE-SW axis. The C18 mill, adjoining C18 millhouse (EHER 25419) and adjacent outbuildings form a small group sited at the SE end of Swan Street, Kelvedon. A sluice built into the northern bank of the Blackwater, which drains into a by-pass leat circumventing the mill to the north, lies at a short distance to the north-west. It operates a single gate using a threaded stud and pulley system and may date to the C19 or early C20. Upstream is a modern single gate sluice which drains into the same back channel. Between the two channels is an area of unbuilt scrub formerly the mill marsh.

A survey of the surviving machinery was carried out by the Essex County Councils Mills Team (Hoyle & Robinson, 2006) prior to commencement of works associated with its conversion to residential use. As all the main mill machinery was to be retained as part of the conversion, the findings of the report still provide an accurate reflection of the mill as it is today and are summarised as part of this report.

The mill is roughly orientated on a N-S axis with the shaft of the waterwheel aligned with its long axis and the water entering from the west. The mill has 3 main floors and is equipped with 3 pairs of stones. The ground (spout) floor contains the water wheel, water flow controls and the timber **hurst** supporting the stones. The **undershot**

waterwheel is 13ft in dia. 6ft 6" wide and comprises two cast-iron frames each with 8 'T' section spokes. It is mounted on a cast-iron shaft and fixed using wedges. The north end of the wheel shaft carries an iron gear, which drives a pulley and in turn line shafting along the eastern wall. A collection of milling apparatus is stored at this level, such as a belt driven grindstone, scales of various types, a **dressing machine** and a root pulper or similar. The **pit wheel** is cast iron and measures 10ft in diameter. The timber hurst in the surrounding **cog pit** has been altered to accommodate the present, larger pit wheel and added to in order to underpin the later southern stones. The east and west **stone jacks** were modified to match the later southern jack. All three **stones nuts**, the **brayer** and **bridgetree** and **tentering gears** are present, although the eastern set-up is incomplete. The main **upright shaft** is wood with an iron **wallower**. This also carries a **compass arm great spur wheel** with wooden cogs. Alterations to the hursting and the adjacent walling suggest that the spur wheel is a larger and later addition. The first (stone) floor houses 3 pairs of 4ft **French Burrs**. The runner (top) stone of the eastern pair has been lifted and its **furniture** is missing, however, the southern and western stones both have almost complete furniture. The upright shaft carries a wooden **crown wheel** of compass arm construction with wooden cogs. The layshaft from the crown wheel is now dismantled but it once powered the **sack hoist**. This floor has two large bins in the SW corner while a layshaft, probably driven from below is situated in the NE corner. Various tools and pulleys were present on this floor. The second (bin) floor can be reached using a modified staircase. It includes a sack hoist bollard, a series of grain bins extending the length of the floor and a central axial walkway. Many of the roof timbers have been replaced (Hoyle & Robinson, 2006).

Present use: Residential

Condition: Good

Sources: Benham, H. 1976 Some Essex Water Mills

Hoyle, M & Robinson, G. 2006 Easterford Mill, A Survey of the Existing Machinery

Watkin, E & Watkin, B. 2006 Report on the Surviving Internal Plaster at Easterford Mill

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C18	Timber	High
Mill House	C18	Timber	High
Sluice	C19/20	Iron/timber	Med-Low
Sluice	C20	Concrete	Low

ARCHAEOLOGICAL POTENTIAL

Although Easterford Mill has latterly been reused as a domestic dwelling, its conversion (like Bulford in Cressing) was sympathetic to the building and its apparatus and as such it retains many original features and much of its historic technology, fixtures and fittings.

SITE SIGNIFICANCE

Easterford mill is unique in Essex in that it has a separate inner timber frame built to support the load of the main milling machinery, thus leaving the outer walls to simply bear the weight of the roof structure. In other respects it is a typical three pair country mill, and although converted for residential use it survives as one of an ever diminishing number of mills in Essex that still retain a significant amount of its milling technology, fixtures and fittings and retain the potential to be put back into operational use. Easterford survives as one of the most important water powered mills in the county

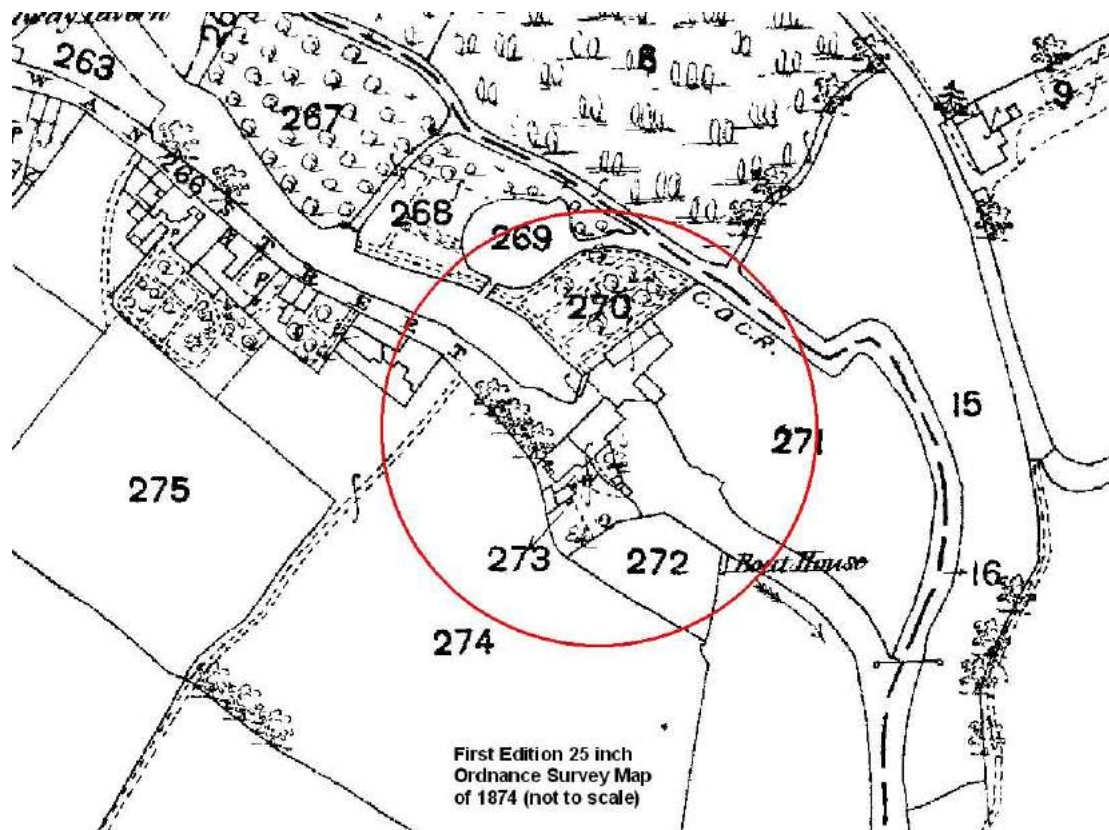
RECOMMENDED ACTION

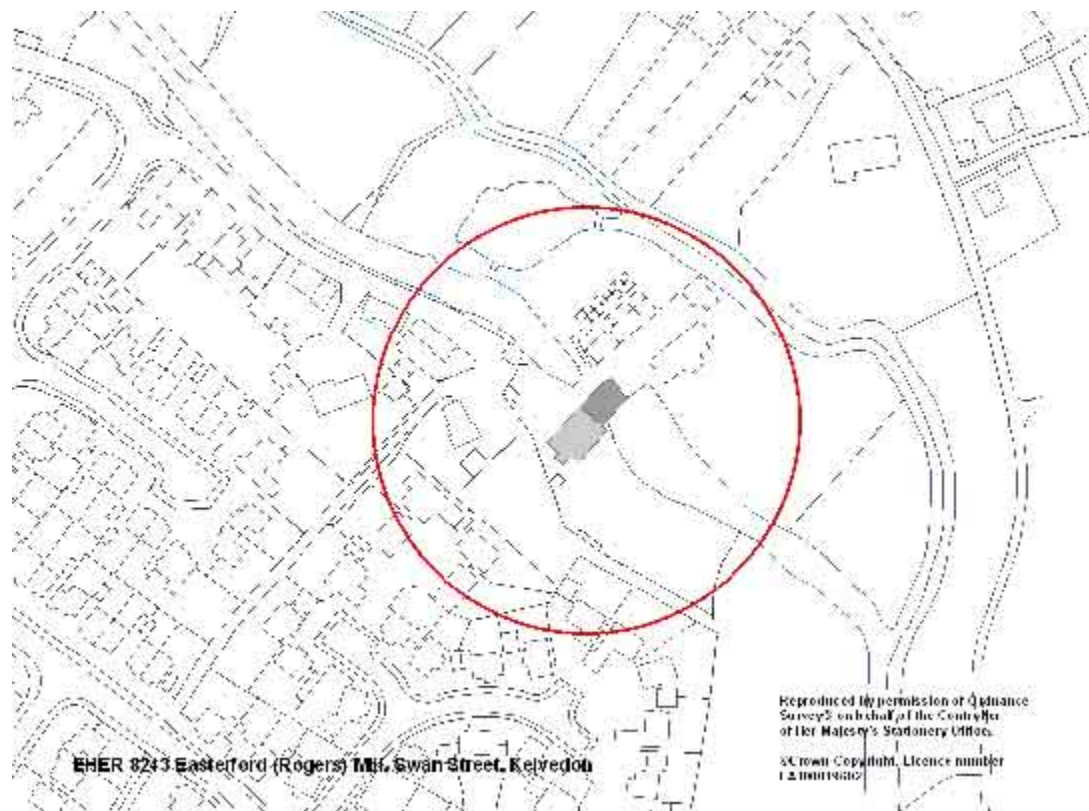
Maintain its current Grade II* listing

MANAGEMENT

Easterford Mill and mill house are all in private ownership and residential use. A historic building survey at RCHME level 3 or 4 is recommended should the mill or millhouse become threatened by significant alteration or demolition.

GRADING ***





Easterford Mill looking south-east

SITE NAME Greys (Docwra's) Mill, Kelvedon

PARISH Kelvedon **DISTRICT** Braintree

NGR TL 86098 18212 **EH** 25409
RIVER Blackwater **EHUID** 116554

CURRENT STATUS **Con. Area** Yes **Listed Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

25/06/1974

Water and steam mill, now warehouse. 1858. Painted brick in English bond. 5 bays aligned NE-SW, and engine house of 3 narrow parallel ranges aligned NE-SW to SE. Mill of 4 storeys and loft, engine house of one storey. SW elevation of mill, 2 windows on ground and first floors, 3 on second floor, one on third floor, all original cast iron casements of 12 lights with cast iron lintels. Large semi-circular cast iron casement in loft. C20 double doors on ground floor, original double loading doors on first floor. Corner giant pilasters and 2 giant pilasters in each return, with simple brick capitals and bases. The left elevation has 5 similar windows on the ground and second floors, 4 similar windows and central double loading doors on the first floor, no windows on the third floor. Low-pitched roof with long overhangs. The engine house has 3 original cast iron casements with semi-circular heads; the gable of the middle range stands above the outer ranges, and has a round cast iron window. The interior has no machinery but otherwise is almost complete. Transverse beams of imported pine of high quality approx. 9.20 metres long, supported on cast iron stanchions on ground, first and second storeys, replaced wooden posts on third storey. Roof trusses with 2 raking struts in each pitch. Original internal stairs to full height at each end. C20 goods lift in front left corner. The mill was built for George Docwra after the earlier mill was destroyed by fire in 1858, and the engine house was added before 1872. At that time 6 pairs of stones were driven by water power, and 5 pairs by steam, operating 24 hours a day, 6 days a week; it was insured for £2,000. The square chimney was at the rear of the engine house. By 1976 it was leaning dangerously, and was demolished soon afterwards (H. Benham, *Some Essex Water Mills*, 1976, 67, and M.S. Gregson, unpublished dissertation *Kelvedon Milling from the late Eighteenth Century to the early Twentieth Century*, 1976, 5-6, in the possession of the owners).

JOHN BOOKERS SURVEY

25/09/1969

A handsome mid Victorian 4 storey brick and slated mill with column like quoins topped with capitals at the roof line. The engine and boiler house lie alongside, being 3 brick and slated buildings all adjoining with the middle section raised above the others, each with large, cast-iron ribbed, semi-circular headed windows in the end walls. Large brick chimney behind middle building. The whole complex can be dated to 1858, following the fire which destroyed the pre-existing Dowcras' Mill. Although the new buildings were obviously built for steam power, a waterwheel was installed and did brunt of milling during the depression years. The mill house was also rebuilt following the fire which destroyed the mill. At present the mill is used by A.W. Deal & Sons Ltd (seed merchants).

Present Use: Seed preparation and dressing

Condition: Good

ERO SOURCES: (D/DU 579)

SITE BACKGROUND:

The last will and testament of Joseph Docwra left his mill (Kelvedon Greys), which he purchased from James Hobbs, along with the dwelling house, barns, stables, four

cottages and 12 acres of land, to his nephew, also Joseph Docwra in 1835. This mill was rebuilt in 1858 by the Quaker miller George Docwra following a fire which destroyed the preceding mill and adjacent mill house. Docwra was renowned for operating his mill constantly, 24 hours a day over a six day period from midnight on Sunday to midnight on the following Saturday, stopping only on Sunday. By 1872 the mill had 11 sets of stones, six powered by water and five by steam, together producing flour for a number of large London bakeries (Benham, 1976). The mill continued through the interwar period, but closed as a mill after the Second World War. It was then used as a warehouse for seed merchants W. Deal and Sons and during this time most of the internal milling apparatus was removed and the engine house chimney was demolished. It finally lapsed into residential use in 1999-2000, the engine and boiler house were converted into a single residence while the mill was sub-divided into five apartments.

Field Survey 2007

05/10/2007

Greys Mill is situated on the southern extreme of the built up area of Kelvedon, along the Maldon Road. It lies upon the Blackwater and within a group of associated grade II listed buildings including Greys the former mill house (EHER 25408), Little Greys (EHER 25406), the barn to the west of Greys Cottage (EHER 25407) and the road bridge to the south of the mill (EHER 30143). Unlisted buildings within this group include a number of C19 outbuildings and Greys Cottage. The mill is orientated on a NW-SE axis across the full width of the mill leat. A sluice diverting water into a bypass or **back channel** circumventing the mill to the SE, lies c.50m to the NE. The sluice mechanism is a C19 or earlier C20 construction and comprises 3 gates each raised using rack and pinion hand cranked via a worm gear. The brickwork revetment appears to be contemporary with the sluice gate.

Little appears to have changed externally since the building was described in the list description (above). It is a 4 storey (with attics), 5 x 3 bay brick built mill with gable ends to the NE and SW, a slate covered pitched roof and no **lucam**. Adjoining the NE long wall are three parallel set single storey gabled ranges comprising a higher central engine house and a lower **wheel house** and boiler house to either side. The mill retains most of its original cast-iron framed multi-paned windows and larger cast-iron arched windows, lighting the attic storey, in each gable. As a consequence of its conversion into apartments some alterations to window and doors has occurred, namely the insertion of new windows and the replacement of existing windows on the fourth floor. Also the replacement of the original taking-in door in the SW elevation with French doors and the insertion of replica doors, opening onto an area of decking, on the ground floor, rear (NE) elevation. The modern double width doors in the SW elevation have also been replaced with glazed doors and shutters. Although there has been alteration to the fenestration overall these changes have not upset the symmetry of the original design.

The wheel pit is located outside the 4 storey mill and lies beneath the gable ended wheel house which abuts its SE wall. The winding mechanism of the sluice or **shut** which once controlled the volume of water to the wheel, partially remains on the upstream side of the wheel pit, although its gates were removed at the same time as the waterwheel. The engine and boiler house have similarly been cleared of all fixtures or fittings associated with power generation. However, they still retain their distinctive tall cast-iron arch headed windows and the bulls eye gable windows typical of many Victorian engine/power/pump houses. The NE brick elevation of the wheel house appears to have been removed and infilled with stud walling and glazed across the lower section. Its removal and replacement is most likely associated with the removal of the waterwheel.

Present Use: Residential

Condition: Good

Sources: Benham, H. 1976. *Some Essex Watermills*

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Watermill	Mid C19	Brick	Med
Engine House	Mid C19	Brick	Med
Sluice	C19/early 20	Iron	Med-Low
Mill House	Mid C19	Brick	Med-Low
Barn	C16	Timber	Med
Mill Cottage	C19	Brick	Med-Low
Outbuildings	C19	Brick/timber	Med-Low
Bridge	Mid C19	Brick	Med

ARCHAEOLOGICAL POTENTIAL

Given the levels of alteration associated with the mills later re-use as a warehouse and its ultimate compartmentalisation into apartments, survival of significant technology, fixtures and fittings associated with its former milling use is thought to be very unlikely.

SITE SIGNIFICANCE

A large C19 brick built water and steam mill of compromised significance due to extent of its conversion into apartments. However it does survive as a handsome example of a C19 industrialised corn mill which has not been unsympathetically enlarged/alterd externally and shares group value with a surrounding complex of associated buildings and structures.

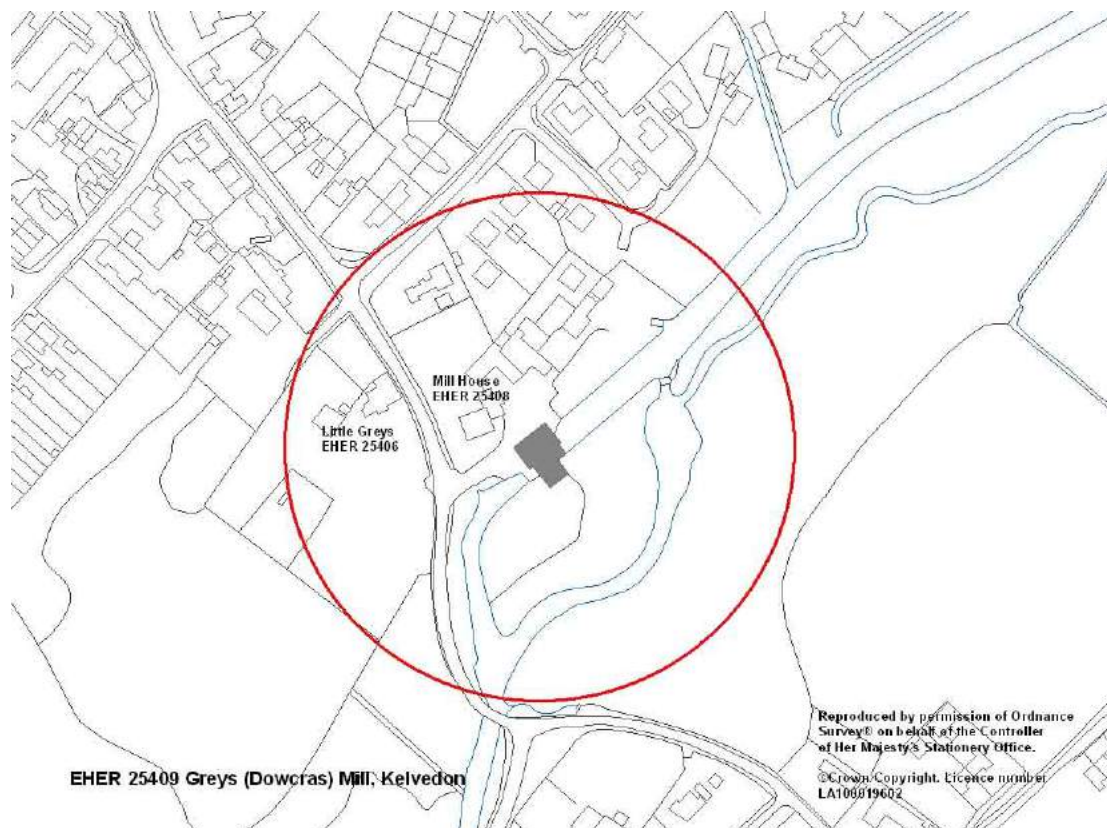
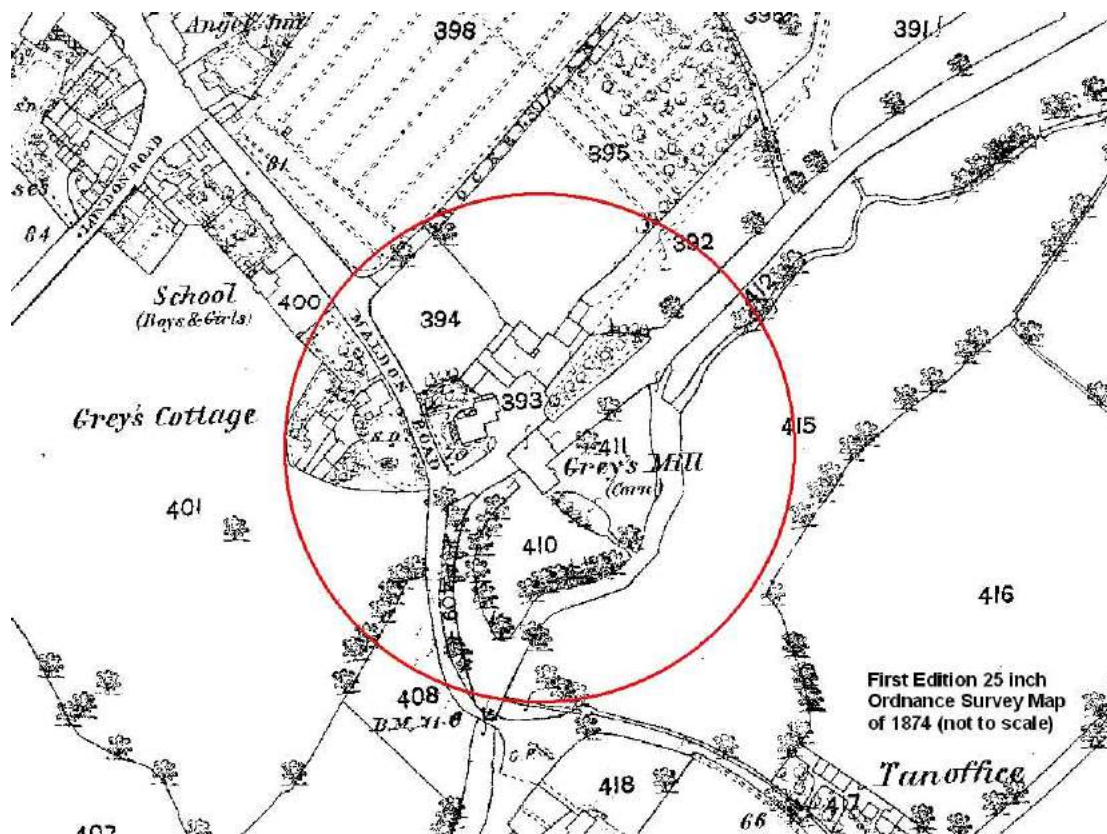
RECOMMENDED ACTION

Maintain current Grade II listed status

MANAGEMENT

Greys Mill and the adjoining engine/boiler house are presently in use as private residences. An historic building survey at RCHME level 3 is recommended should the mill or associated outbuildings become threatened by significant alteration or demolition.

GRADING **





Greys Mill, rear elevation, looking south-west



Greys Mill, Engine, Boiler and Wheel House, looking south-west

SITE NAME	Hulls Mill, Hulls Mill Road, Great Maplestead		
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PARISH	Great Maplestead	DISTRICT	Braintree
NGR	TL 79286 33172	EH	29680
RIVER	Colne	EHUID	114314

CURRENT STATUS	Con. Area	No	Listed	Grade II	EBAR	No
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STATUTORY LIST DESCRIPTION

15/10/1984

Watermill. C18/C19 with adjoining building, converted into a dwelling during the 1960's. Mainly timber framed & weatherboarded. Ground floor of painted brick. Grey slate roof. 3 storeys & loft with central gabled lucam. 5 window range of small paned horizontal sliding sashes to second floor. 4 range of small paned vertically sliding sashes to first floor with central vertically boarded door. 4 ranges of mainly small paned vertically sliding sashes with vertically boarded stable door to right. 3 gables to rear. Left range of 2 storeys with flat roofed C20 porch to left return. Weatherboarded with painted brick base. Grey slate roof. 4 window range of small paned horizontal sliding sashes to first floor. 2 range of round headed small paned windows to ground floor. A mill has stood on this site since 1086. It was part of the Lord Bouchiers endowment to Bouchier Chantry Halstead until about 1545 when Edward VI granted it to William Parr. Records follow the history through until S.P.A.B. 1918 indicate the original wooden wheel was removed and a water turbine installed. This was replaced by an oil engine which drove 3 pairs of stones. Possibly 6 were originally driven. It was worked from 1930-1950 by Hovis Ltd, the last commercial operators, and then converted into a dwelling.

JOHN BOOKERS SURVEY

Weatherboarded mill in attractive setting. No machinery remains but the mill was producing flour for Messrs. Hovis as recently as 1960. Sale particulars in 1900 refer to Hulls Roller Flour Mills placed over a 9ft water fall, 4 floors, recent roller machines, 5 pairs of French Burr stones driven either by water or steam power.

Present Use: Part of private residence & farm

Condition: V. Good

ERO SOURCES: (D/AMW 1/273), (D/DHt T 129/16), (D/DHt T 177/10)

SITE BACKGROUND:

The name Hulls Mill may be a corruption of Hall Mill or more likely, as at Kingston upon Hull, an obsolete word describing a waterway running under a road. Its millers include Edward Mumford (who was bankrupt in 1849), Henry Ardley (1855), the Metson family and Metson and Playle from 1863 to the end of the century, W.F.Beales (1906) and Charles Dupont of Bures who paid £800 for it in 1908. In 1911, when it was Hulls Roller Mills, the miller was C. Wallace. Soon after WWI it was acquired by Hovis. Around this time the wheel was removed and a turbine and producer gas engine installed. The turbine by Gilbert Gilkes and Gordon, was bevelled to a horizontal shaft, one end of which drove a single pair of stones, serving the needs of local farmers, while the other end drove a dynamo which powered the lights in the mill, mill house and mill cottages. Whereas, the gas engine drove the roller mills and the centrifugal dressing machines using a long shaft running from one end of the mill to the other. The gas engine was replaced in the mid 1930s by a National oil engine started by air compressor, the latter powered by the turbine. This engine drove a 110 volt DC generator, connected to an electric motor driving the main shaft. During the early years of WWII the mill was provided with Turner roller mills but had closed by 1953, being one of the last country flour mills in the county.

Through most of the period it was in the ownership of Hovis the mill was managed by Harry Noble and later by his son John (Benham, 1976).

Field Survey 2007

09/07/07

The mill and adjoining granary was converted to residential use during the 1960s and little internal technology was thought to survive. Externally the mill does not appear to have been extensively altered and it survives as a large 3½ storey, 5 bay, part brick but mainly timber framed and weatherboarded mill. It is built astride the River Colne and east of the point where Hulls Mill Road fords the mills' by-pass leat. Attached to the western end wall is an in-line two storey weatherboarded (former) granary and to the rear a number of small lean-tos most probably once used as fuel stores. The main roof is covered in slate with gables E-W to the front and three perpendicular gables to the rear. A gable ended, weatherboarded lucam projects (S) above the eaves from the central bay of the façade and sits above a central taking in door at first floor. The ground floor storey is clad in brick (Flemish bond) and includes a 4 window range and an off-centre battened heck door. The windows of the ground and first floor are typically C19 vertical sashes with small panes (4 x 4 or 3 x 4) with simple architraves, while those in the upper storey have smaller openings with horizontal sliding sashes. The windows in the rear elevations and those of the adjoining granary are mainly small horizontal sliding sashes although a few later windows have been inserted.

Internally the main structural posts of the softwood timber frame are exposed, while features such the **sack trap** apertures, which rise through the entire building, have been preserved through glazing. The sluice gate, Gilbert Gilkes and Gordon **turbine**, the gearing and horizontal drive remain in situ within the **wheel pit**. Although the drive shaft no longer survives outside the wheel pit. The set of stones (Barron & Son, Gloucester) mentioned by Benham and kept for local farmers, remain in situ on first floor although the **stone furniture** and the gears under-driving the stones have been removed. Few other features remain apart from several pulleys and part of the **sack hoist mechanism**. The roof structure is a simple side purlin roof with a ridge piece and many replacement common rafters. The granary in common with the mill is part brick and part timber framed. A taking in door, now blocked, is situated in the eastern bay and a set of elevated cart doors, built to coincide with the level of a cart, remains in the west end wall. The joists of the first floor are strongly built, narrowly spaced and strengthened with cross bracing, while central to and under pinning the floor is a large brick pier.

The sluice gate to the north of the mill has been renovated but still mostly retains its historic mechanism. The sluice gate operated three guillotine type gates all opened using a pulley and wire system named the 'Handy Hoist Mechanism'. To the east of the Hulls Mill lies the former mill house (EHER 29681) a C16 or earlier house associated with a predecessor of the present building.

Present Use: Private residence

Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water/steam mill	Later C18/C19	Timber	Med-High
Mill house	C16	Timber	Med-High
Granary	C19	Timber	Med-High
Sluice	C19/C20	Iron	Med

ARCHAEOLOGICAL POTENTIAL

Due to the levels of internal alteration associated with the mills ultimate re-use as a dwelling the survival of significant technology, fixtures and fittings associated with its former milling use has been significantly compromised.

SITE SIGNIFICANCE

A large later C18/C19 water and later steam/oil powered mill of limited significance due to the removal of the bulk of its mill gearing during conversion works to residential use. However it does survive as an interesting local example of a late C18 corn mill which has not been unsympathetically enlarged or altered and still retains some elements of its historic apparatus, albeit as decorative features within the later conversion

RECOMMENDED ACTION

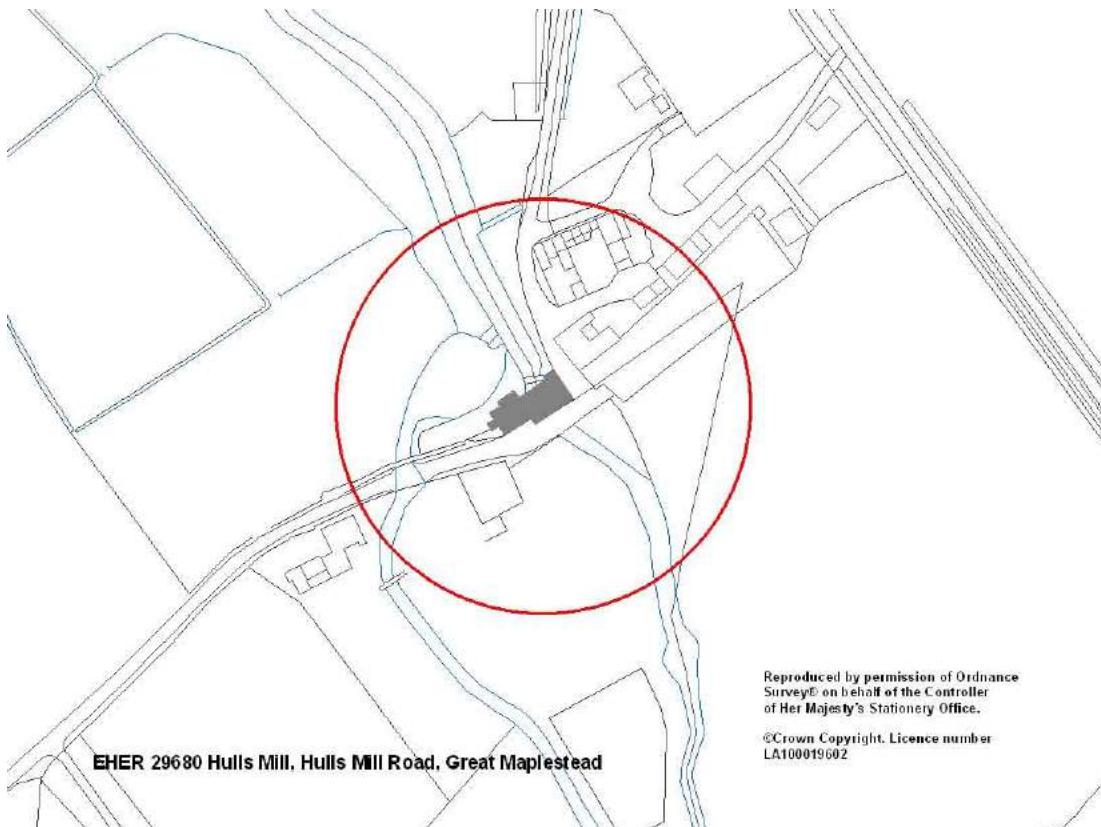
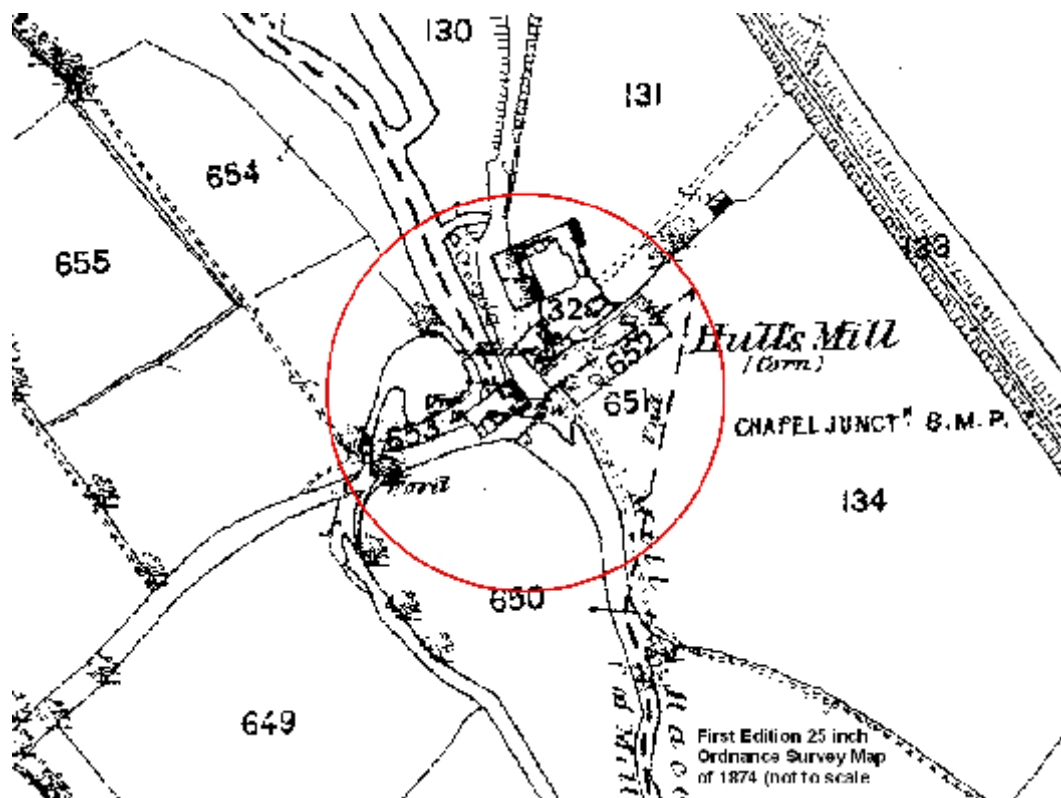
Maintain the current Grade II listing

MANAGEMENT

Hulls Mill is presently in use as a private residence and as such is well maintained. An historic building survey at RCHME level 3 is recommended should the mill become threatened by significant alteration or demolition.

GRADING

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Hulls Mill looking north-east

SITE NAME Langley Mill, Elms Hall Road

PARISH Greenstead Green **DISTRICT** Braintree

NGR TL 835 298 **EH** 8615
RIVER Colne **EHUID** NA

CURRENT STATUS **Con. Area** No **Listed Grade** NL **EBAR** No

JOHN BOOKERS SURVEY

28/09/1973

C18 weatherboarded watermill with tiled roof, 2 storeys and no lucam. The mill is reported to have still been in use fairly recently but was empty by 1970, with no machinery and in a poor condition. The mill house, probably C19 is 2 storeys with a hipped slated roof. Now under re-construction the mill has obviously been recently renovated (externally at least).

Present Use: Part of private residence, disused

Condition: Quite Good

ERO SOURCES: (D/DSm E 11), (B1174)

SITE BACKGROUND:

Langley mill most likely initially operated as a fulling mill. More recently it was worked by two families, the Rays and the Harts. Thomas Ray and his son worked the mill as far back as 1863, with John Stollery before them in 1848. At this time Langley also had a companion windmill. After the Rays the mill was taken over by Alfred Hart, who started at Box Mill and worked under Ruffle. After Harts death in 1948 the mill was taken over by his son George Hart who struggled to continue despite water supply deficiencies and structural problems with the building. For some time he used meal grinders powered by a tractor but finally moved out of Langley to set up the Colne Valley Mill near Earls Colne Station (Benham, 1983). The mill was sold and converted to residential use during the 1970s.

Field Survey 2007

09/07/07

Langley Mill is situated between Halstead and Earls Colne, it lies down stream of Blue Bridge and along Elms Hall Road. The site comprises a former watermill built astride the river and to the south a detached mill house, now renamed Mill Cottage. The mill and mill house (cottage) are both in residential use as separate properties (converted in 1975). Judging by the levels of external alteration and enlargement it is unlikely that any internal features or technology remains.

The mill comprises a 2 storey plastered timber-framed range with gable end to the south. It has been enlarged to the north with a short in-line extension and a taller perpendicular brick-built range with gables to the E-W. Central to the mill (lower range) was a taking-in door at first floor (now converted to French doors with a wrought iron balcony). No lucam is visible within the roofline above the taking in door. The roofs are covered with plain tiles and of uniform pitch throughout. The elevations are painted throughout and the weatherboarding, reported by Booker in the 1970s, has been removed and the elevations plastered. The most dramatic impact on the appearance of the mill has been the unsympathetic replacement of all its fenestration with modern faux leadlight double glazed windows to match those of the extension. Two separate channels appear to diverge from the mill head and flow below the mill and the extension to the north. The mill house post dates the mill (C19) and is brick built with hipped slate covered roofs.

Present Use: Private residence
Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Timber	Low
Mill house	C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Given the levels of alteration associated with its later re-use as a house the survival of significant technology, fixtures and fittings is thought unlikely.

SITE SIGNIFICANCE

The reconstruction, re-fenestration and enlargement of Langley Mill for residential use have had a major impact upon its historic integrity and significance.

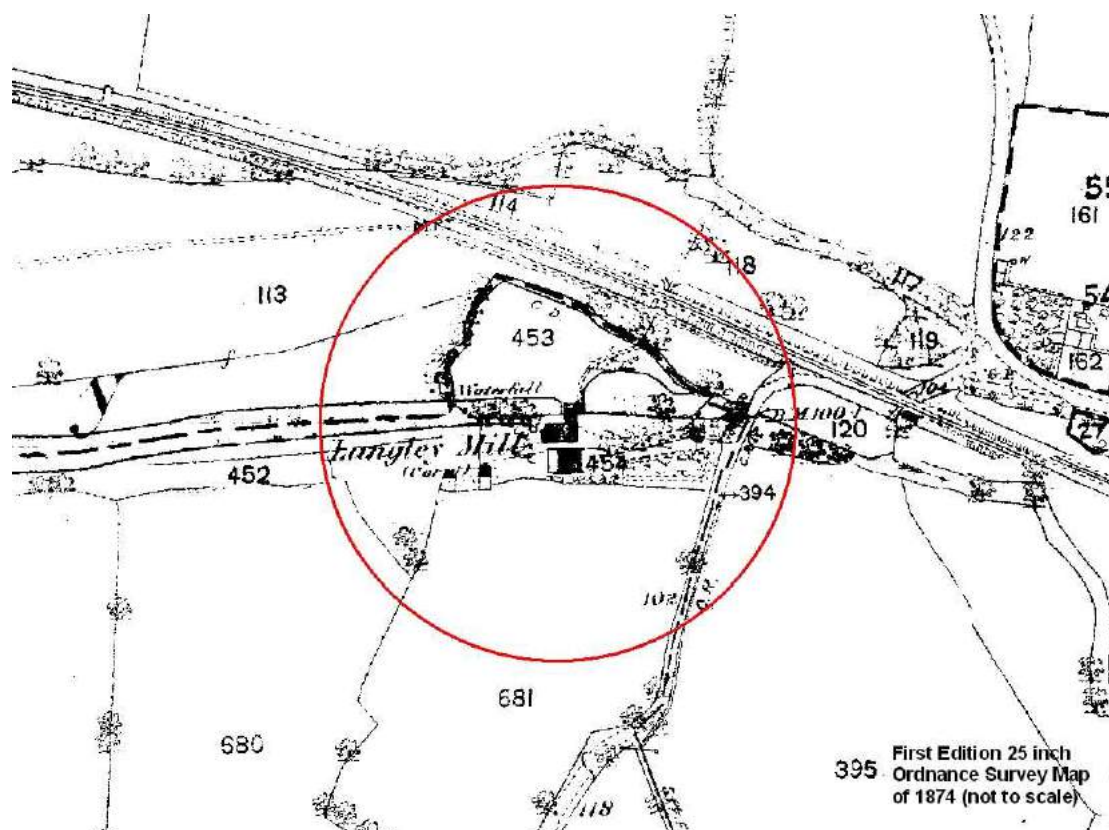
RECOMMENDED ACTION

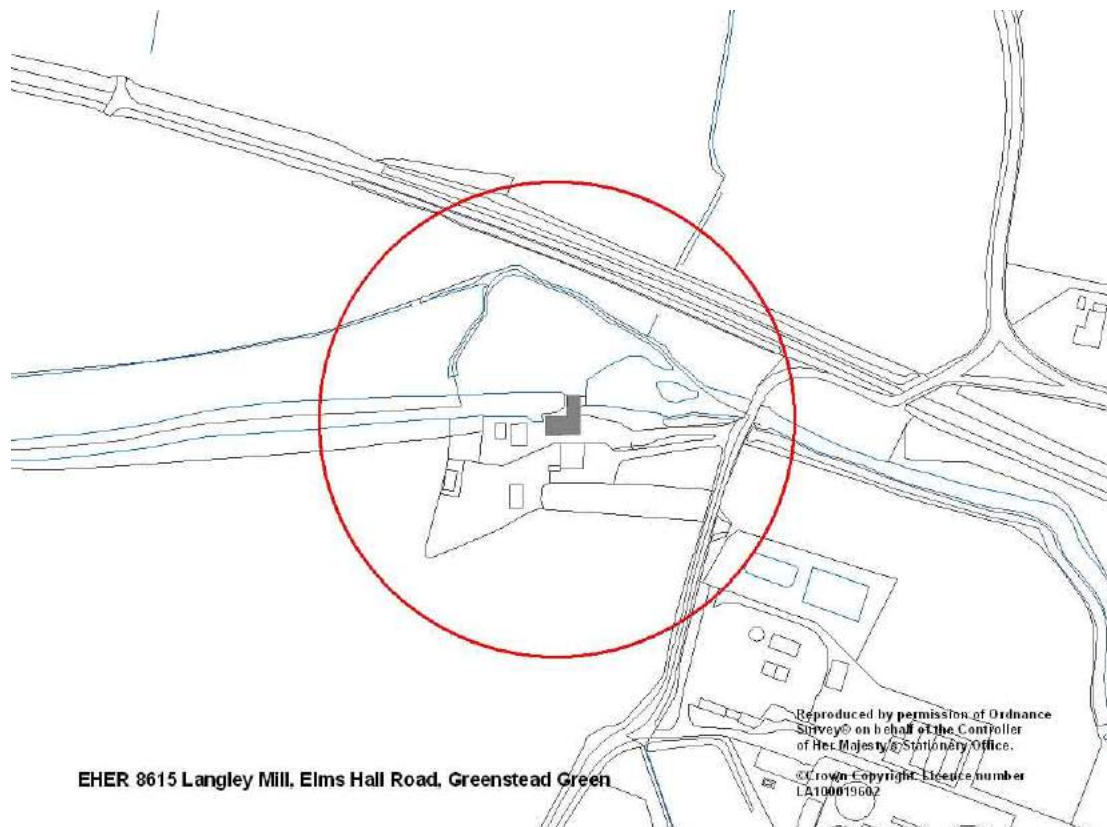
Langley Mill does not fulfil the criteria for listed building designation. However it should be recognised as an interesting, historic local building that should be incorporated into future Local Development Documents

MANAGEMENT

Langley Mill is presently in use as a private residence and accordingly well maintained. A historic building survey at RCHME level 2 is recommended should the mill become threatened by significant alteration or demolition.

GRADING *





Langley Mill looking south-west

SITE NAME New Mills, South Street, Braintree

PARISH Braintree **DISTRICT** Braintree

NGR TL 7575 2280 **EH** 15098
RIVER NA **EHUID** 113804

CURRENT STATUS **Con. Area** Yes **Listed** **Grade II** **EBAR** No

STATUTORY LIST DESCRIPTION

29/11/1973

A silk-throwing mill built by George Courtauld in 1810. It is an interesting and unusual example of early C19 industrial development. There are 3 blocks of similar design of the same period within the mill, but the most important is the block with a north front on South Street. 2 storeys with basements at the east end of the block. The upper storey is weatherboarded and the ground storey is of brick. The window arc in long ranges of fixed lights and top hung casements, with glazing bars and small panes. At the east end the block sets back slightly with 5 window range of double-hung sashes with glazing bars. There is one doorway with a semi-circular fanlight and pilasters. Roof slate, the blocks at the rear have corrugated asbestos roofs. New Mills and Nos. 66 to 70 (even) form a group.

SITE BACKGROUND

Samuel Courtauld (III) and Peter Taylor purchased the Pound End Mill site, South Street in 1818 with the intention of building a new silk mill. The building was completed by April of that year and in production by May, but the first year proved to be so disastrous that by 1819 Courtauld moved his entire business to Savills Mill in Bocking. Pound Mill stood empty until 1822 after which it was leased to a silk manufacturer, Daniel Walters who subsequently built up an excellent reputation for his fine silks and velvets and business flourished. In 1856 Walters bought land adjacent to Pound End Mill and by **1859** a new complex of textile mills 'New Mills' opened for business. In 1869 Walters succeeded in acquiring land adjoining the New Mills site and Walters' other mill, built in Rifle Hill Black Notley in 1861, was dismantled and moved to this site. It became known as the Notley Shop.

In about 1875 power-looms were introduced, including some Jacquard looms, steam power being supplied by a single cylinder, horizontal, flat-bed steam engine sited within an engine house in the yard between the two mill ranges. Drive was transferred to the line-shafting in the mills via subterranean tunnels built between the engine house and mills. Steam power was augmented by a 60 HP Crossley gas engine worked from a producer gas plant. Both steam and gas were replaced in 1936 by electric power. Walters' business went into liquidation in 1894 and the mills were bought by Warner & Sons. Warner reverted to just handloom weaving until 1918 when steam power was re-introduced. Many of the wooden handlooms, some up to 200 years in age, were taken over by Humphries Weaving Co. of Castle Hedingham. Extensions were made to the buildings throughout the first half of the C20 including a dye-house in 1920s and a new power-loom weaving shed in 1936. Both were enlarged in 1949. The mill ceased operation in 1971 and in 1975 the engine house was demolished. The two main mill buildings remain intact, in commercial/residential use and in part as a Working Silk Museum.

Field Survey 2007

15/05/2007

The New Mills site comprises two main weaving sheds set parallel to each other and either side of a central courtyard. To the south of and abutting the southern shed is a later brick built north light factory building while new build apartments now form the eastern boundary. The mill buildings were converted to residential and business use in 1990 at which point a replica Oriental Pagoda, associated with a Chinese restaurant, was added to the western bays. The two weaving sheds follow the same general layout and design although there are some subtle differences between the two. The southern shed is much longer and has a brick built workshop abutting its eastern end while the 6 eastern bays of the northern or roadside shed are higher and are set forward to the south.

Roadside Shed

The northern shed is a 2 storey weatherboarded textile mill built with the characteristic bands of continuous 'daylight' glazing synonymous with the C19 textile mills of the area. It has a slate covered and gable ended roof punctuated along the ridge by large sheet iron ventilation turrets. The ground floor is brick built (Flemish Bond) up to window sill level, although the brick built component of the six eastern bays incorporate sash windows and doorways to a basemented floor. A suspended walkway on decorative cast-iron brackets provides access to the elevated ground floor from the southern courtyard side. The bands of windows along the ground and 1st floors comprise a series of individual fixed 6 x 5 small pane windows with timber glazing bars and an integral top hung hopper incorporated into the window head. The window joinery appears to be original although many of the glass lights have been replaced. The weatherboarding is plain feather-edge and lacks the beaded edge detailing present in the adjacent Pound End Mill. The mill is partly in residential use and partly used as business premises. No internal access was available.

Southern Shed

The southern shed is considerably longer than its counterpart but in most other ways it adopts the same general architectural traits. It is two storey with a brick base, weatherboarded elevations and a slate covered gable ended roof with in-ridge ventilation turrets. The continuous glazing uses the same multi pane design as the adjacent mill although the windows of ground floor are slightly larger 6 x 6 panes, while those of the southern elevation (both floors) have been reworked (early C20) and now have larger panes, iron glazing bars and a central four light pivoting vent (but retain their top hung ventilation hoppers). Central to the range is an archway which passes through the building and enables access from the central courtyard to a north-light range (now housing the Warner Textile Archive) and other factory buildings to the south. Abutting the east end is a single storey red brick engine house or workshop. Built in Flemish bond it has a gable parapet with oversailing corbels and a pitched slate roof. Central to the facade is a wide arched doorway flanked by two arch headed cast-iron windows, each with yellow brick voussoirs. This small building worked alongside the main workshops and engine house which formerly lay central to the courtyard but were demolished prior to the sites redevelopment.

Internally few features remain as the building has lost much of its original spatial integrity to later re-use and conversion. The interior is lined out using plasterboard and the main storey posts are encased behind modern boxing. A line of storey high cast-iron columns marked B.P. & Co, extend axially through the building and support an cast-iron bridging beam which in turn supports the main floor joists. The roof structure was not inspected but may be similar to the side purlin roof with additional diagonal and axial bracing, as used at Pound End and Townsford Mills.

Condition: Good

Current Use: Converted to apartments and in business use. Also houses the Warner Textile Archive

Sources: The Warner Textile Archive

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Textile Mills x 2	Mid C19	Timber/Brick	Med-High
Engine/Workshop	Late C19/C20	Brick	Med
North-light Factory	Early-mid C20	Brick	Med-Low

ARCHAEOLOGICAL POTENTIAL

Its recent conversion to residential and business use has removed all internal technology and so few original features survive. However the buildings have escaped significant modern alteration or addition and hence remain as notable examples of mid C19 silk weaving mills that continue to display the characteristic architectural features such as their 'weavers windows' and the later north-light sheds

SITE SIGNIFICANCE

The New Mills share group value with their sister mill, Pound End Mill, and retain historic associations with two prominent local silk manufacturing businesses of Walters and Warners & Sons. The mills have a unique design, determined by function, and form part of a small group of textile mills found in the Braintree area that follow a similar architectural model, including Pound End, Townsford and Abbey Mills.

RECOMMENDED ACTION

Maintain its current Grade II listed status

MANAGEMENT

New Mills and associated buildings are presently in use as private residences and in commercial use and as such are presently well maintained. A historic building survey at RCHME level 3 is recommended if the mills (or the site as a whole) become threatened by significant levels alteration or demolition

GRADING **/**



New Mills, Northern Range, looking east



New Mills, Southern Range, looking west

SITE NAME North (Frost) Mill, Mill Chase, Halstead

PARISH Halstead **DISTRICT** Braintree

NGR TL8151030988 **EHHER** 26194
RIVER NA **EHUID** 113935

CURRENT STATUS **Con. Area** Yes **Listed** Grade II **EBAR** No

STATUTORY LIST DESCRIPTION

16/03/1978

Brick base to original smock mill (EHER 26195) built 1790. Octagonal, Flemish bond, good Georgian window and original door. Joists to original stone floor remain. C19 mill buildings 2 and 3 storey, gault brick windows. White weatherboarded lucam. Brick factory chimney. Early C18 miller's house re-fronted in early C19 in grey gault brickwork. Originally timber-framed and plastered. Six window range double hung sashes. Grey slate roof. 2 late C19 bay windows. Good cast iron railing by C. Portway (Halstead) of circa 1880.

SITE BACKGROUND:

Frosts Mill is a small complex of former mill buildings situated on the NW side of Halstead and along Mill Chase. The site is laid out in a courtyard plan, formed by an L-shaped range comprising a millers house (E) and a later steam mill (N) and an attached modern dwelling and garaging at opposite return (W). Central to the courtyard lies the brick base of a smock mill and to the rear of the steam mill is a large brick built industrial chimney stack. All historic buildings have now been converted to residential use and some new build, in keeping and in proportion with the surrounding mill buildings have been added along the western boundary of the site.

Field Survey 2007

10/05/07

The mill house is a two storey early C18 timber-framed two storey range with a later C19 brick re-fronting and a later catslide roof to the rear. The mill house is built over 5 bays and adjoins a similarly proportioned in-line 3 bay C19 range built between it and the eastern end of the steam mill. The windows of the mill house façade are C19 horned vertical sliding sashes and are of the same design and date as those used in the brick-built two storey linking range to the north. A taking in door located in the bay directly adjacent to the steam mill (now French doors) suggests the link was probably used in the cleaning and storage of produce. Overshadowing the smaller mill house to its SE, the steam mill is a typical example, built over 5 bays and 3½ storeys. It has an off centre weatherboarded **lucam** built into the courtyard elevation (S) and above a tier of taking in doors (now blocked) and the roof eaves level. The main roof and the roof over the lucam are gable ended and slate covered. The walls are built in red brick and laid in Flemish bond. All the windows in the mill have brick segmental arched heads with either single or 2 courses and replacement sash type joinery. Built in line with the steam mill and to its western side is a two-storey 3 bay? engine house and to the rear a large tapering C19 chimney stack with over-sailing courses. It is unclear when the engine house was built but there are references to an engine house for Edmund Frost in 1907-08 (D/UH Pb1/155 & D/UH Pb1/168). The octagonal ground floor storey of an C18 former smock mill (EHER 26195) survives to the south of the steam mill, its wooden tower demolished in 1947. Two arch headed window apertures and an arched doorway remain, the former still retaining good examples of C18 iron window frames.

Condition: Good Order

Use: Residential

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Med
Engine House	C19/20	Brick	Med
Mill House	C18	Timber/Brick	Med
Smock Mill	C18	Brick	Med

ARCHAEOLOGICAL POTENTIAL

Due to the buildings change of use from an industrial building to residential use, no technology fixtures or fittings are expected to survive.

SITE SIGNIFICANCE

A later C19 brick and slate mill of little historic/technological significance due to extent of its conversion to residential use. It does share some group value with the adjoining listed mill house and the brick built base of a former smock mill. Frosts Mill is a typical example of a purpose built steam mill, but one which still retains considerable local interest.

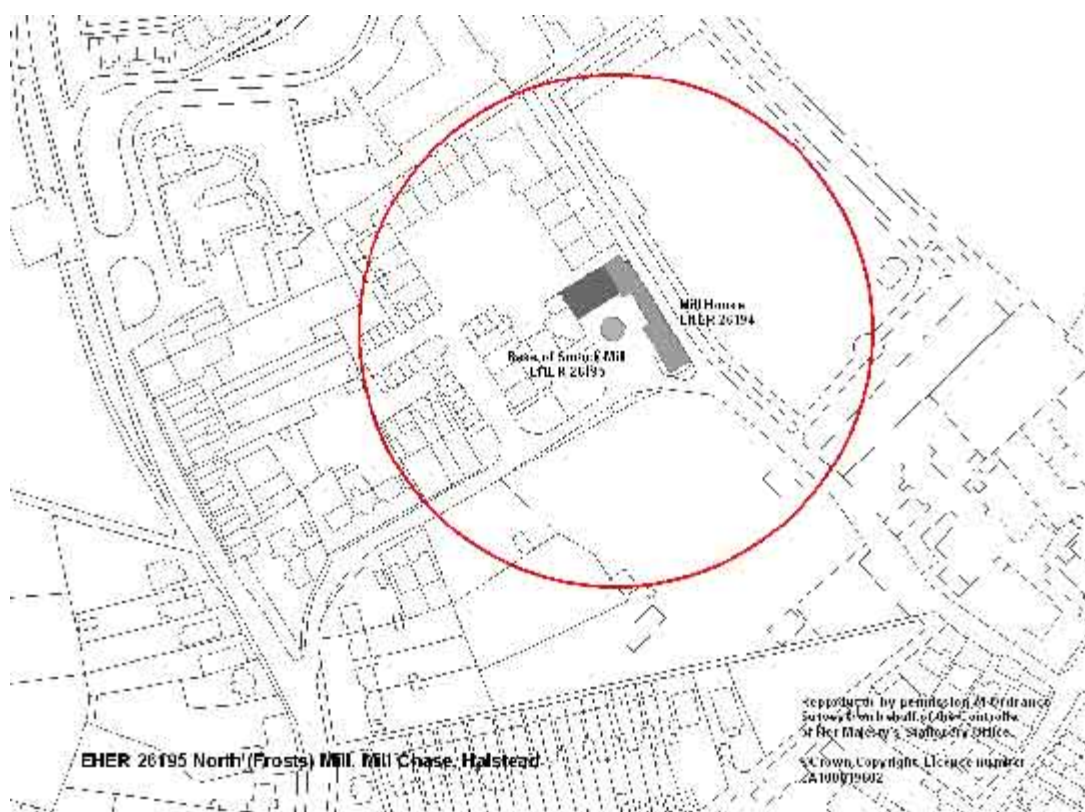
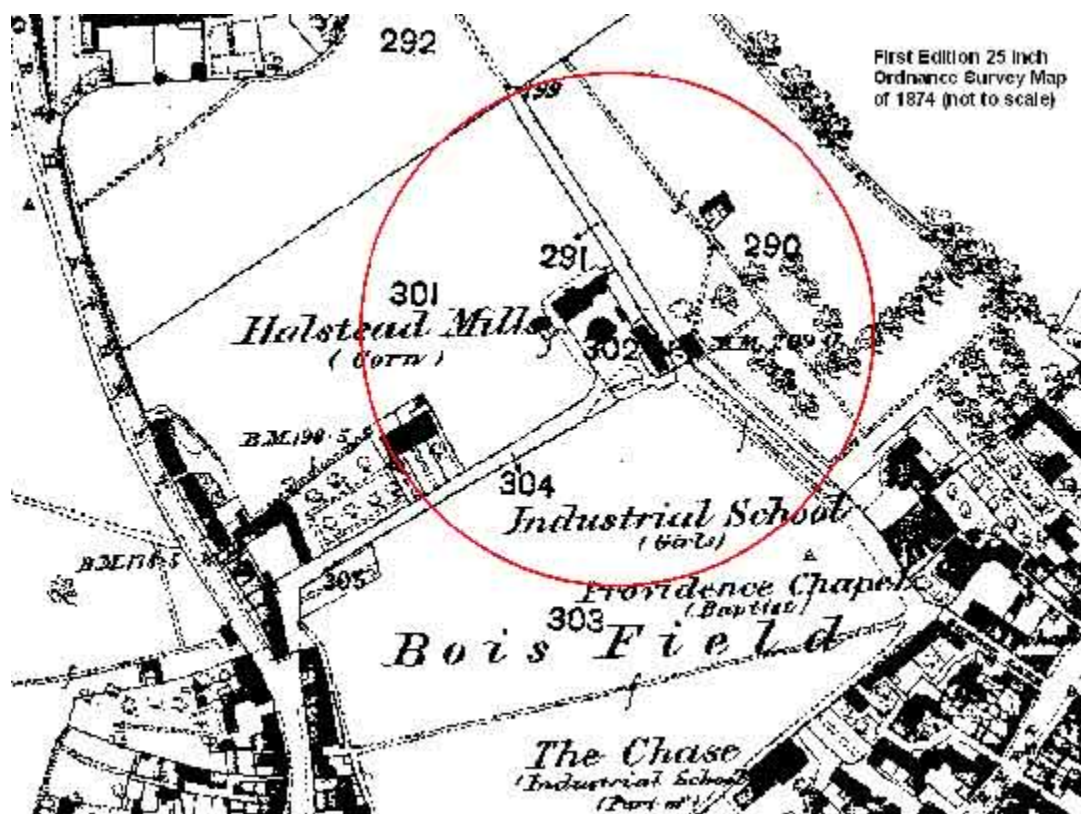
RECOMMENDED ACTION

Through group value with the smock mill base and mill house the steam mill survives as a significant addition to the historic character of Halstead and as such its current listed status should be maintained.

MANAGEMENT

Frosts steam mill and the adjacent buildings are all presently in use as private domestic dwellings and are accordingly well maintained. An historic building survey at RCHME level 3 is recommended if the steam mill, smock mill or mill house become threatened by significant alteration or demolition.

GRADING **





North (Frosts) Steam Mill and base of Smock Mill, looking north-east

SITE NAME Overshot Mill, Mill Lane, Colne Engaine

PARISH Colne Engaine **DISTRICT** Braintree

NGR TL 86046 29908 **EH** 28687
RIVER Peb **EH** 115871

CURRENT STATUS **Con. Area** No **Listed** **Grade II** **EBAR** No

STATUTORY LIST DESCRIPTION

21/06/1962

Water mill, now a house. C18. First storey of red brick in Flemish bond, remainder timber framed and weatherboarded, roofed with handmade red clay plain tiles. Aligned NW-SE, with wheelpit at SE end, and 1 1/2 storey lean-to extension beyond; attached early C19 granary at NW end. 3 storeys and attics; granary of one storey. Ground floor, 2 C19 casements and 2 plain boarded doors, sliding vehicle door to extension, also boarded. First floor, one C19 and 2 C20 casements; halved loading door, with half-glazed C20 door inside. Second floor, one C20 casement. Gambrel lucam at attic floor on 2 curved braces, with C20 plain window. Roof half-hipped at both ends. Granary raised on brick piers, with low-pitched pyramidal roof of slate. A cast iron pulley projects from the rear. The fall is 17 feet (5.18 m) and the original overshot wheel of diameter 16 feet (4.87 m) was exceptional in Essex. The mill was originally built for fulling in 1640, but converted or rebuilt as a corn mill in the late C18. It ground cereals on a small scale in connection with a wholefood business until 1944, and also powered a dynamo. About 1966 the waterwheel was replaced by a turbine, made by Gilbert Gilkes and Gordon, driving a 4 kw alternator. Retains the pit wheel, wallower, wooden vertical shaft, wood-cogged crown pinion and 2 pairs of Dell stones (Colne Engaine, the Story of an Essex Parish, 1975, 18-19, and H. Benham, Some Essex Water Mills, 1976, 79-80).

JOHN BOOKERS SURVEY

28/09/1973

C18 weatherboarded watermill on a red brick base. 2 storeys, hoist loft, tiled roof with half-hipped ends. Nearby mill house is 2 storey timber-framed and plastered with tiled hipped roofs. The mill is unusual on two counts; it was sited on an insignificant brook which needed to be dammed to gain a head of water and as the name suggests, was overshot. The original wheel has reportedly been replaced by a turbine during the 1960s.

Present Use: Part of private residence

Condition: V. Good

ERO SOURCES:

SITE BACKGROUND:

Overshot mill was built as a fulling mill in 1643 but converted into a corn mill between 1787-1810. In his will dated 1585-1601 William Deane left Dynes Hall, Maplestead and an Overshot Mill to his wife Anne and son John (although this may have been a predecessor of Hulls Mill, Maplestead or another overshot mill thought to have existed at Pebmarsh). Records show that Overshot Mill in Colne Engaine passed into the hands of Thomas Wakelyn by 1708 and for three generations it was owned by the Marsh family who also managed the adjoining Millbrooks Farm. Between the wars the mill was used for horse feed and for driving a dynamo which powered the mill and the family farm. During this period the iron waterwheel became very corroded and by 1965 it was replaced with a second-hand Gilbert, Gilkes and Gordon turbine (the same manufacturer of turbines as used at Hulls Mill) able to produce 4kw. During the installation of the new turbine, an oak trough which directed water to a former wooden wheel and fulling stocks was unearthed. Although the waterwheel

was replaced, the pit wheel, wallower, upright shaft, wood cogged crown pinion wheel and two pairs of Dell stones were kept. An external pulley geared to the main shaft worked a saw and another set of stones formerly located in an adjoining, but now demolished, outhouse (Benham, 1976).

Field Survey 2007

12/09/2007

Overshot Mill is located to the north of Earls Colne and within the parish of Colne Engaine. It lies on the northern side of Mill Lane, to the east of Lodge Farm and to the south and west of Colne Park. The mill straddles the mill leat as it passes below Mill Lane before turning east along the south side of the lane to rejoin the Peb or Mill Brook stream at a short distance to the south. Immediately to the north the mill leat is banked up and widened to collect sufficient head water and provide the fall for the (removed) 16ft diameter overshot wheel. Overshot Mill lies downstream of Pebmarsh Mill, another overshot mill which was demolished in 1894. A sluice built into the eastern side of the banked 'mill pond' lies c.30m north of the mill while a weir is situated c.137m up-stream. The mill and its granary are grouped close together and form part of a wider complex of buildings including Millbrook Farm to the east and the C16-C17 Overshot Mill House (EHER 28686) and Mill Cottage to the west. The mill has been in residential use for at least 30 years and is in private ownership. At the time of the survey neither access nor discussion with the owners was possible.

Overshot Mill is aligned on an approximate E-W axis across the mill leat and sits west of a small detached granary lying within the curtilage of the mill. It is a 3½ storey 6 bay mill built with a red brick ground floor storey in Flemish bond and two timber-framed and weatherboarded storeys above. A weatherboarded lean-to extension built in line, flush with the façade and with a plain tile mono-pitch roof projects for one bay to the east. The mill roof has half hips to both ends and is covered in handmade plain tiles. Central to this roof is a weatherboarded **lucam** with a gambrel plain tile roof and curved brackets. It projects south to roadside and encompasses the whole height of the roof plane from wall plate to the ridge. A **taking-in door** (now part blocked and converted into a window) was located directly below the lucam on the first floor. The wheel pit is reported to be located at the eastern end of the mill and within a C19 extension which incorporated the external wheel into the building. The present feather-edge weatherboarding is a modern replacement of elm boarding and all of the 12 light casements to the façade are modern replicas. The later garage which incorporated the ground floor bays of the east end and lean-to has since been reused for residential space. A small detached red brick granary built on brick piers and with a gable ended plain tile roof and modern barge boards is sited to the east of the mill. Modern windows and a chimney stack have been added as part of its conversion into a residential annexe. This building is not the granary described in the listing. The 'granary' at the western end is in fact thought to be a mid C19 counting house or mill office.

Although no internal access was gained, a survey carried out in c.1993 gives some idea of the buildings structural development and technological survival prior to the latest raft of alterations. The building exhibits two main stages of construction, with a 5 bay fulling mill and a C19 extension associated with its later use for corn milling. The 5 western (fulling) bays comprise 3 storeys and an attic under a butt-purlin roof with half hipped ends and a ridge board. The combination of a butt-purlin roof (typically C17-18) and ridge pieces, that latter not appearing in Essex until the late C18 and C19 presents an inconsistency that may be explained by a roof reworking. The lucam is a later insertion into the butt-purlin roof and was probably added in the early C19 when the mill went over to corn. At this point the mill was also extended by a single bay to the east and a new clasped purlin roof extension with a half-hip added. The timber framing is primary braced throughout, a type of framing that

encompasses both date ranges (C17 & C19) and incorporates a face-halved and bladed scarf joint (carpentry that does not predate the C17) in the wall plate. The mill was clad in elm weatherboarding and some boarding can be seen on the now enclosed original east end wall. It was converted to a house during the 1960s, at which point the waterwheel was removed although the **upright shaft**, wooden and cast iron gear wheels and two pairs of **stones** were retained (Brown, 1993).

The present mill is in remarkably good preservation suggesting that it has been refurbished externally within the last 10-15 years. The continued survival of the upright shaft, gear wheels and stones remains unknown.

Present Use: Private residence

Condition: V. Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C17/18	Brick/Timber	Med-High
Granary	C19	Brick	Med
Sluice	Not inspected		
Mill House	C16/17	Timber	Med-High
Mill Cottage	C19		Low-Med

ARCHAEOLOGICAL POTENTIAL

Although the survival of milling technology referred to in the list description remains unclear, it seems likely that most if not all remains. Overshot survives as an unusual example of a mill built with an overshot waterwheel, but one that has been compromised by modernisation and conversion to residential use.

SITE SIGNIFICANCE

Overshot remains as a fine and well maintained example of an C18 weatherboarded country mill which shares group value with the nearby mill house and cottage. It is unusual as it survives as one of only eight overshot mills recorded in the survey. It once operated as a fulling mill and formed part of a distinct group of water powered textile/fulling mills concentrated within north and north east Essex.

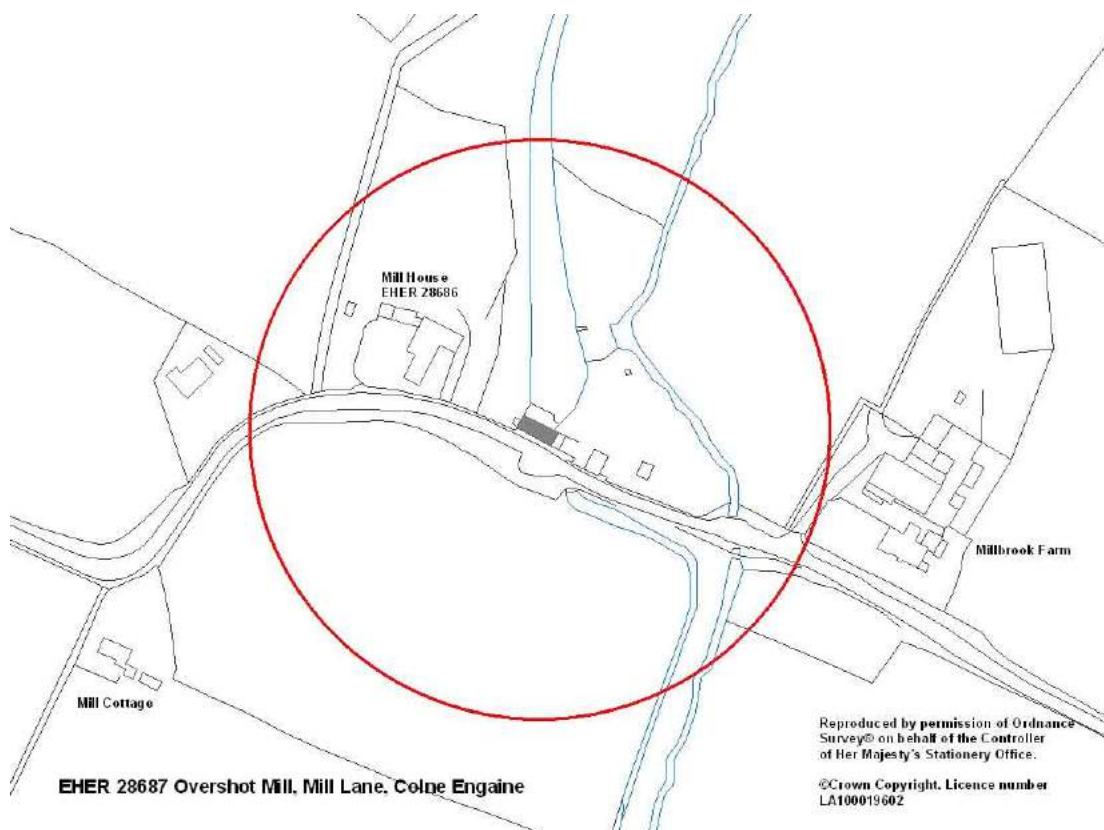
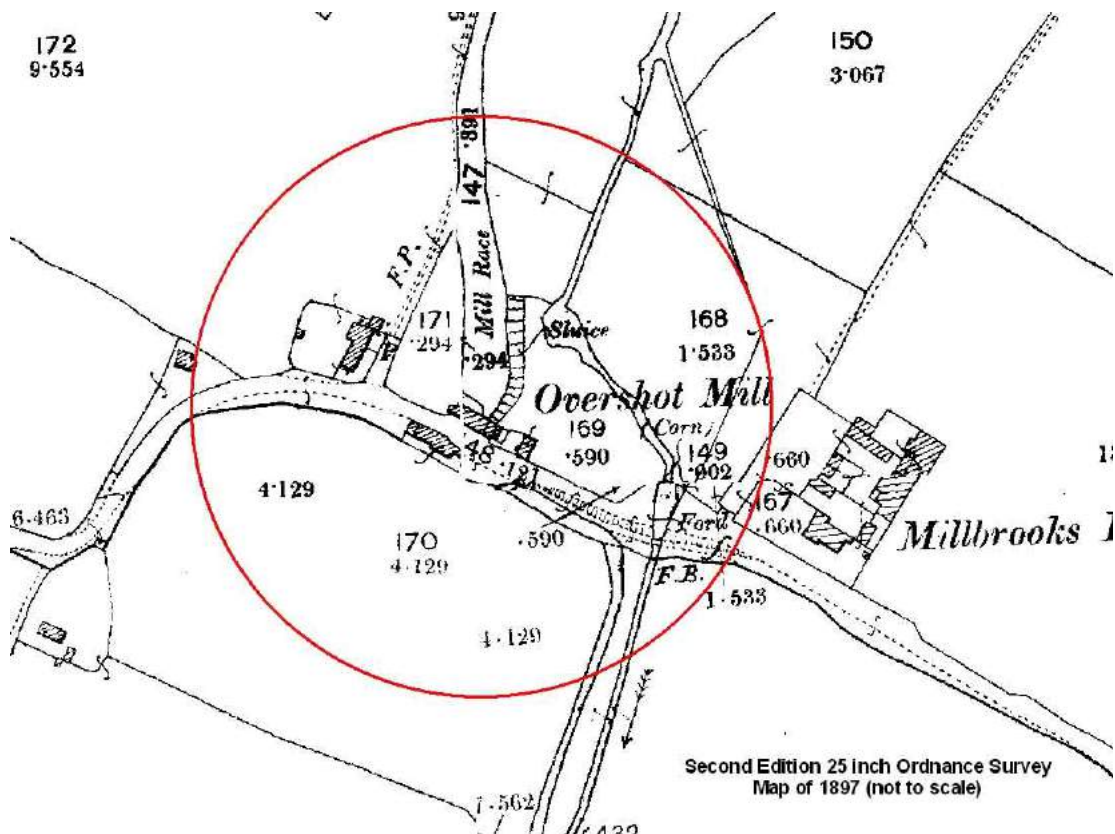
RECOMMENDED ACTION

Maintain current level of Grade II listing

MANAGEMENT

Overshot Mill is presently in use as a private residence and is well maintained. Given the unclear situation regarding the survival of the upright drive and stones an internal inspection or an historic building survey at RCHME level 3 is recommended if the mill becomes threatened by significant alteration or demolition.

GRADING **/**



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Overshot Mill looking west

SITE NAME Pentlow Mill, Pentlow Lane			
PARISH	Pentlow	DISTRICT	Braintree
NGR	TL 80978 46356	EHHER	27882
RIVER	Stour	EHUID	407977
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

21/06/1962

Dwellings, formerly a watermill and mill house in one continuous range. C18. Timber framed, red brick faced. 2 range red tiled roof with 2 gabled dormers to left range. Gabled dormer and weatherboarded gabled lucam on 2 brackets with small paned window to right range. 2 storeys and attics. 8:2 window range to first floor, 3:3:1 range to ground floor of various sliding sashes and casements, those to right range with segmental heads. Also to right range is a central loft door. Panelled and pedimented door to left range and an archway to left of part glazed garage doors. 2 red brick chimney stacks. To the left of the building and extending forward to the road is a tall flint and red brick wall.

SITE BACKGROUND:

A mill is mentioned at Pentlow in the Domesday book and it appears there has been a mill on the site since records began. The mill is ideally sited on a gravel bank that protrudes into the valley and enjoys a drop in level downstream (artificially lowered) which provides a good head upstream. A much broader wheel pit discovered under the mill and below the existing brick wheel-pit suggests the original or an earlier mill used a simple horizontal wheel and not the existing vertical wheel system. The mill building is characterised by its Mansard roofs, designed to accommodate corn bins in the attic stage, and the **Lucam** added to the pre-existing roof to enable sacks to be hoisted into the mill from outside. During the C19 the mill incorporated a dairy and a brewery with cellarage for up to 300 gallons of beer. The coming of the railway had a great effect on the rural economy by undermining the need for local milling. Hence, Pentlow mill diversified into millers and coal merchants and accordingly the site expanded with the addition of wagon stores and extensive stabling. The milling side continued to decline following the introduction of roller milling (1870s) and latterly the mill relied on milling animal feed with a sideline in poultry and eels. An inventory of 1877 records an 18ft by 4ft 4in wooden waterwheel, wood clasp arms, oak floats and oak shaft (12ft 6ins). Around 1910 the waterwheel was severely damaged in a flood and was not repaired but replaced by a portable steam engine, which in turn was replaced during the 1930s by a paraffin engine. Pentlow mill was then bought by a rival milling concern (Hitchcocks), all the machinery was removed and thereafter the site was used as a pig and poultry farm. During the 1960s plans to convert the mill into a boarding school, resulted in the demolition of many outbuildings, the addition of dormitory and staff accommodation into the mill and classrooms into the mill house. This work was never fully completed and the site was sold on for residential use. (Anon. History of Pentlow Mill)

Field Survey 2007

18/10/07

Pentlow mill lies immediately west of Pentlow Bridge and at a short distance from the historic village of Cavendish. The mill was built to the south of the natural course of the river Stour which also forms the county boundary and at the eastern end of an extensive 3 mile long **mill leat**, which for the most part runs parallel to the river and the former route of the GER Sudbury to Cambridge branch line.

The complex comprises a brick faced, timber framed watermill incorporating an in-line mill house (centre) and a modern brick extension to the south. The mill house, separated from the mill by a cross-passage, is reportedly (pers comm.) the earliest surviving unit and is a 2 ½ storey timber framed range with a penny-struck brick facing of c.1761. The pitched, plain tile covered roof has a large mid C17 brick stack central to the southern bays. The windows of the mill house are a mixture of styles, although mullioned windows at ground floor are oak and thought to date from the C17. Gable dormers set into the roofline are later additions. The C18 watermill is a 3 or 4 bay 2½ storey timber framed range with a Mansard roof (which is at odds with the earlier roof of the mill house) and a brick facing of c.1860. A large weatherboarded **lucam** (very similar to the style used at Camsix Mill, Hartford End) is set into the eastern pitch of the roof structure and above the eaves line. A pair of parallel-set C18 plain tiled and Mansard roofed wings project west from the rear of the watermill and in the case of the northern range, directly over the wheel pit. The fenestration of these two rear ranges has been extensively modernised and now mainly comprise C20 casements. Externally the bulk of the mill and particularly the more visible elevations remain little altered although garaging for a single car has been inserted into the southern bay of the façade. The mill house was enlarged in 1968 with the addition of an in-line, 2 storey brick built extension to the south. This partly replaces a range of former outbuildings (stables, stores, sheds etc) once enclosing a courtyard to the south and west of the mill. The majority of outbuildings were demolished during the 1960s and only a fragment of the complex survives.

A fully operational C19 sluice gate lies to the west of the mill and at the junction between the leat and the river Stour. The guillotine gates are lifted by hand using a ratchet and chain mechanism similar to that which partly survives at Borley mill.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill and mill house	C17-18	Brick	Med-High
Outbuildings/sheds	C19	Brick	Low
Sluice	C19	Iron	Med

ARCHAEOLOGICAL POTENTIAL

Due to the multiple reuses Pentlow mill has undergone and most notably its partial conversion into a boarding school and latterly a dwelling, few significant milling fixtures, fittings or technologies remain. However the site retains a significant archaeological potential based on the discovery of an early, possibly C14 horizontal (or Norse) mill in the area of the present wheel pit.

SITE SIGNIFICANCE

Pentlow Mill survives as one of only three C18 brick-built or re-fronted watermills in the county, sharing many visible similarities with Hartford End (Camsix) mill. Although it retains little technological significance due to its latter conversion to residential use, the building reportedly includes timber-framing predating the brick re-fronting of 1761. It is obviously a very old milling site and survives as a good example of an C18 or earlier mill, which externally retains many historic architectural features (brickwork, fenestration and roof coverings) which has not been unsympathetically enlarged. The site also preserves a fine example of a C19 sluice.

RECOMMENDED ACTION

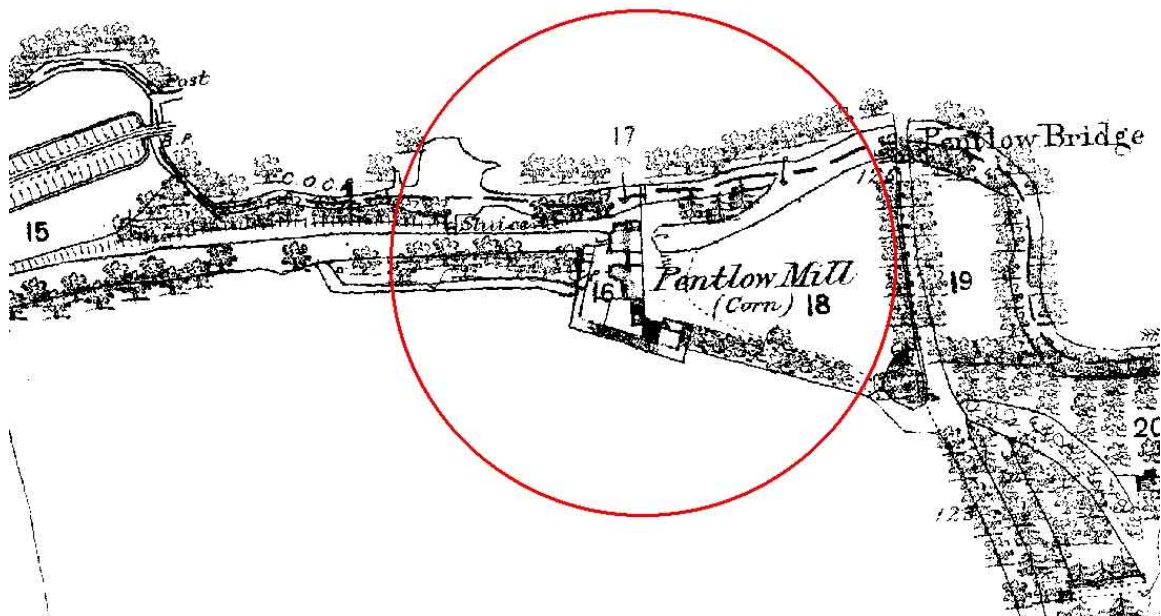
Maintain present level of Grade II listing

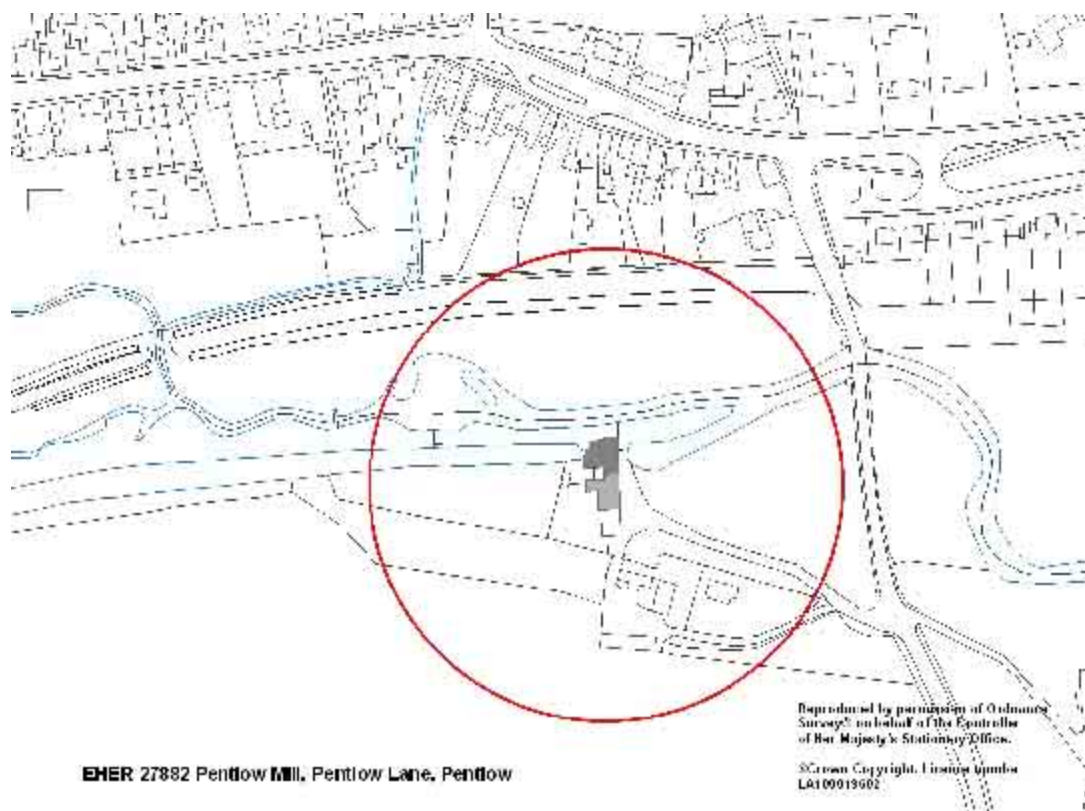
MANAGEMENT

Pentlow Mill is presently in use as a private residence and as such is well maintained. Should the opportunity present itself an internal inspection and/or historic building survey at RCHME level 3 is recommended if the mill becomes threatened by significant alteration or demolition.

GRADING **/**

First Edition 25 inch Ordnance Survey Map
of 1874 (not to scale)





Pentlow Mill and Mill House looking north-north-west

SITE NAME	Pointwell Mill, Pointwell Lane		
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PARISH	Coggeshall	DISTRICT	Braintree
NGR	TL 85324 21518	EHHER	8690
RIVER	Blackwater	EHUID	NA

CURRENT STATUS	Con. Area	No	Listed	Grade	NL	EBAR	No
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JOHN BOOKERS SURVEY

16/02/1971

Perhaps late C18 mill, timber-framed, plastered and weatherboarded, with a tiled roof. 2 storeys and a hoist loft. There is apparently an inscription within to 'Albion Mills' burnt down in 1796, which is unlikely to refer to this site. The deeds describe the property as Pointell or Poyntell Mill, Chapman and Andre call it Pointers and S.P. 1879 (D/DBW B2) refer to Pointails. The weatherboarded mill house is c. C18 with later alterations; It has 2 gables to front with ornamental barge boards and pendants.

Present Use: Part of private residence

Condition: Good

ERO SOURCES: (D/DO T 24), (D/DBW B2)

SITE BACKGROUND:

Pointwell mill is a typical three stone mill which uncharacteristically has plastered elevations instead of the more usual weatherboard. It was leased to the miller Charles Barnard during the mid C19 and was later worked by the Applefords, who also operated Abbey Mill, c.650m upstream. It is believed to have finished working by 1902 and was bought derelict in 1960 and converted into a house (Benham, 1976).

Field Survey 2007

05/10/07

Pointwell Mill together with its mill house lie to the south of the historic town of Coggeshall, within Coggeshall Hamlet and at the eastern end of Pointwell Lane (NGR TL 85324 21518). The C18 Pointwell Mill, the adjacent late C16/C17 mill house (EHER 30178) and the group of C19 stables and outbuildings form a small group of related multi period buildings. The mill is orientated approximately E-W and perpendicular to the mill leat which feeds into an external wheel pit abutting the western end wall of the mill. The mill tail is channelled below the brick bridge to the front of the mill and out into a large mill pool on the southern side. A modern sluice gate located immediately north of the wheel pit now controls water levels in the mill leat although prior to the removal of the waterwheel, this operation was probably undertaken using a sluice further to the north which drained into the by-pass or back channel (original watercourse) skirting the mill to the east. A timber built lean-to wheel house depicted in an early photograph was presumably removed along with the waterwheel during its conversion to residential. The mill is a 2½ storey, 5 bay timber-framed and plastered range with a plain tile gable ended roof. The original mill windows were all replaced in the 1960s with the present 8 over 12 and 8 over 8 sash windows. As part of these works the original irregular pattern of the windows was reworked to present a symmetrical front by adding a new window to each bay over both floors. To achieve this the taking in door central to the façade was blocked up and converted to a window while three gable dormers were built into both front and rear roof pitches in the end an central bays. The external brick chimney stack added to the eastern gable wall also dates to this phase of work. Some of the main structural components of the timber frame remain exposed internally. The large Baltic pine binding joists have soffit chamfers with stopped ends and are supported at their union with the storey posts using crude timber knees. Part of the framing/hursting that help support the mill gearing is recognisable in the ceiling of the westernmost

bay, while interestingly graffiti on a post in the attic (former bin) floor records JOSEPH BUTCHER October 1877. No internal fixtures, fittings or technology remain.

The mill house dates to c.1600 and was extended around c.1700 and in the late C18/early C19. It is timber framed, weatherboarded and plastered and roofed with handmade red plain tiles. It is aligned N-S presenting a gable end to road with an external stack to left of middle bay and C19/20 external stack to left of rear bay. C19 fretted bargeboards are on both gables of the entrance elevation. The stables lie to the east of the mill and are a cranked brick or timber framed ranges with gabled ended pan tile roofs. A planning application for their conversion to office use was submitted in 1997.

Present use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Timber	Med-Low
Mill house	C16/17	Timber	Med
Stables/Outbuildings	C19	Brick	Low-Med
Sluice	C20/21	Iron	Low

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of building works associated with its conversion to residential use no significant technology, fixtures or fittings survive within Pointwell Mill and few original external features remain.

SITE SIGNIFICANCE

Former C18 timber framed and plastered three stone country watermill now retaining little technological significance. It does share group value with the adjacent mill house, bridge, stable block and an historic association with the nearby Abbey Mill. It should continue to be recognised for its local historic interest

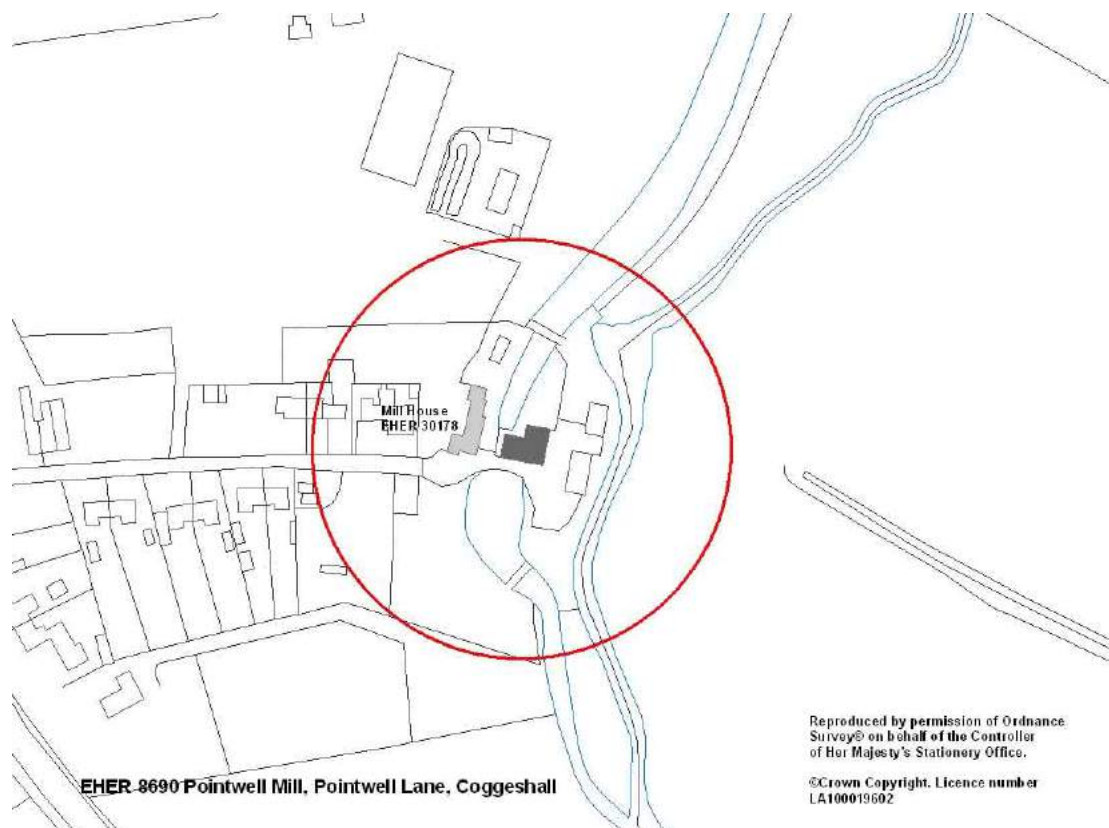
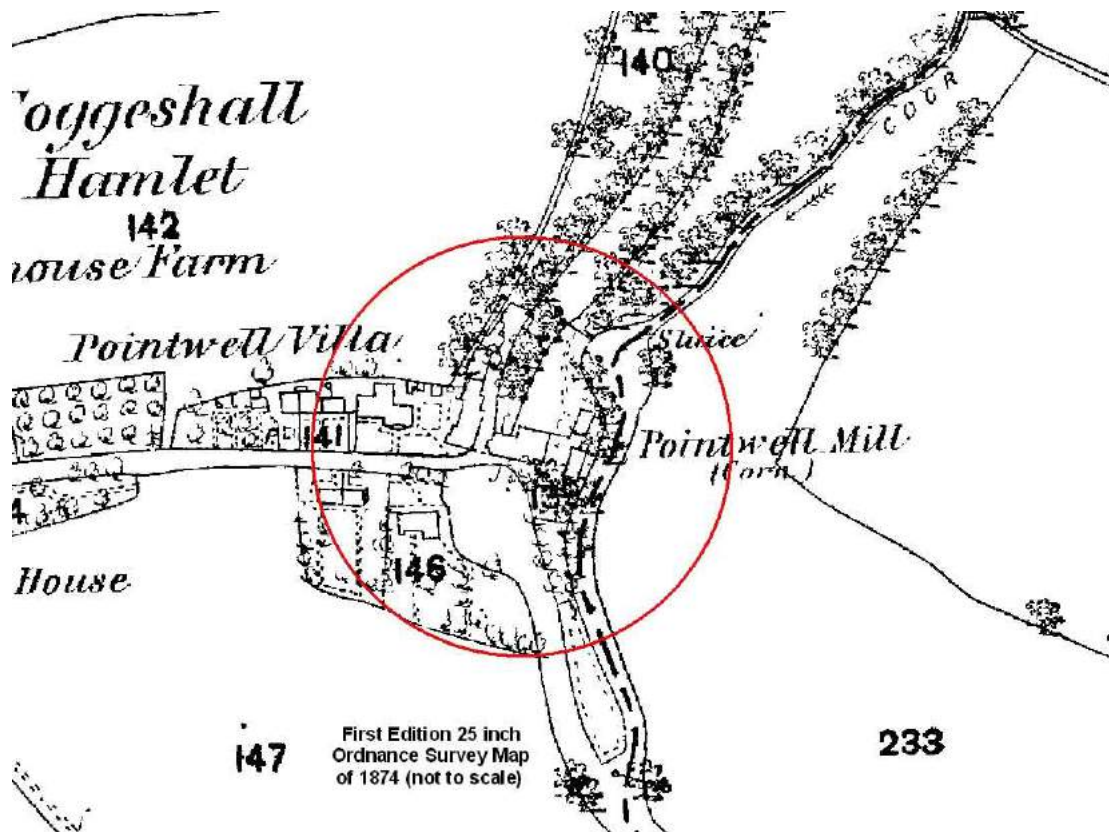
RECOMMENDED ACTION

Given the levels of alteration associated with its residential use it is debatable whether Pointwell merits listing. However the building does still retains much of its C18 timber framing and as such is no less significant than other extensively altered Grade II listed watermills such as Borley or Chalkney Mills. Pointwell Mill site should be recognised as a local historically important site and included in future Local Development Documents and on a local list of significant buildings.

MANAGEMENT

Pointwell Mill and adjacent buildings are presently in use as a private residence and as commercial premises. A historic building survey at RCHME level 3 is recommended if the mill, millhouse or outbuildings become threatened by significant alteration or demolition.

GRADING */**



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Pointwell Mill looking north-north-east

SITE NAME Pound End Mill, South Street, Braintree

PARISH Braintree **DISTRICT** Braintree

NGR TL 7578 2286 **EH** 15836
RIVER NA **EHUID** 113826

CURRENT STATUS **Con. Area** Yes **Listed Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

21/09/1987

Garden Centre, formerly a silk throwing mill. Circa 1813 by George Courtauld. Timber framed and weatherboarded on ground floor of red brick in both English and Flemish bonds. Slate roof. Three storeys. Ground floor has eight window range of early C19 vertical sliding sashes with glazing bars. Upper storeys have long ranges of fixed light and top hung early C19 industrial lights with glazing bars and small panes. Internally the original framing survives, though obscured. Forms a group with New Mill buildings to south side of street (qv items 1/151 and 1/151A).

SITE BACKGROUND:

Samuel Courtauld (III) and Peter Taylor purchased the Pound End Mill site, South Street in 1818 with the intention of building a new horse powered winding and weaving silk mill. Courtauld stated at the time that *'This my little mill will be 60ft long, 23½ ft wide and three stories, weatherboarded with a beaded edge, painted stone colour with black sashes and a slated roof'*. The building was completed by April of that year and in production by May, but the first year proved to be so disastrous that by 1819 Courtauld moved his entire business to Savills Mill in Bocking. The mill stood empty until 1822, when it was leased by silk manufacturer, Daniel Walters, from William Waters Slade Amans for the sum of £65 per annum. Daniel Walters had built up an excellent reputation for his fine silks and velvets and business at Pound End flourished. In 1856 Walters bought land adjacent to Pound End Mill and by 1859 a new complex of textile mills 'New Mills' opened for business. As Walters developed the New Mills site Pound End was adapted for use solely as a warehouse. By 1894 Daniel Walters & Son were bankrupt. Daniel Walters offered Benjamin Warner the New Mill site and by September Warner paid £77, 653, 18s, 1d for all the buildings, equipment and samples etc. Warner officially took over the business in 1895.

Field Survey 2007

20/07/07

A three storey, part brick, part weatherboarded textile mill with gable ends E-W and a slate covered roof. The ground floor storey is brick built (English Bond) and incorporates an 8 window range in the southern elevation only. These windows are all C19 3 x 4 or 4 x 4 pane vertical sliding sashes with glazing bars and timber sills. No fenestration is present in the corresponding northern wall. The windows of the first and second floors comprise bands of continuous strip glazing or 'weavers windows' which generally extend around the entire building. The two most noticeable changes to these windows occurs in the western bays of the façade, and is associated with the addition of a stairwell, and in the western gable end, following the insertion of tall loading doors. The joinery of the weavers windows is original and comprises a series of individual top hung and pivoting casements with small panes (4 x 4) and glazing bars. The weatherboarding has seen some patch replacement in small areas but generally is the same beaded edge weatherboard (or a like for like replacement) Courtauld refers to in 1818.

Internally few features remain and the buildings original spatial integrity has been lost. The interior was extensively lined out using plasterboard and the main storey posts have been boxed in, although in most cases the straight (iron) braces between

the post and floor joists remained exposed. The roof structure remains partly visible and is a side purlin construction, with raking struts below the purlins and a collar above. Constructed in pine, each truss was strengthened using additional diagonal and axial braces (as at Townsford Mill).

Condition: Good

Current Use: Presently leased by a charity (Prospect) but owned by Tesco.

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Textile Mill	Early C19	Timber/Brick	Med-High

ARCHAEOLOGICAL POTENTIAL

Its recent use as a store for Tesco, a Garden Centre and now for a charitable trust has removed all internal technology fixtures and fittings. However it has escaped significant modern alterations and enlargements and as such remains a fine example of an early C19 silk weaving mill

SITE SIGNIFICANCE

Pound mill survives as a remarkably intact example of this regional style of early C19 weaving mill. Together with the former silk mill in Earls Colne (Crape factory) it survives as the only remaining mill built by the prodigious Courtauld business and shares group value with other local silk mills, i.e. New Mills, Townsford Mill and Abbey Mill, plus historic links with other local, important textile manufactures i.e. Walters and Warners.

RECOMMENDED ACTION

Maintain Grade II listed status

MANAGEMENT

Pound End Mill is presently maintained as commercial premises and as such is well maintained. An historic building survey at RCHME level 3 is recommended if the mill becomes threatened by significant alteration or demolition.

GRADING **/**



Pound End Mill looking west-north-west

SITE NAME Robinsbrook Brewery (Mill), Robinsbridge Road			
PARISH	Coggeshall	DISTRICT	Braintree
NGR	TL 8470 2279	HER	17826
RIVER	Robins Brook	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No
JOHN BOOKERS SURVEY			1974
Former mill now a private house.			

SITE BACKGROUND:

Deeds for the mill at Robinsbrook, Coggeshall go back to the later C18, although the present building appears to date to the mid C19. It was marked as a brewery on the O.S. first edition map of 1875 but probably did not operate as such for long as it was not marked for any particular purpose on the third edition map of 1923 (Crosby, 2002). From 1900 to 1914 it was used for drying teasels, grown in Coggeshall for the wool trade, but was derelict by the end of the Second World War and was converted to a house in 1950 by Mr C.T.Taylor. At this point the corn bins still remained on the top floor, the engine house stood at a short distance to the rear but the mill stream and pool had disappeared (Benham, 1976). It remained as a house until it once more fell into dereliction following a fire. It is now a dangerous structure awaiting demolition.

Field Survey 2007

05/10/2007

Robinsbrook mill is situated along and to the south of Robinsbrook Road and to the west of Stoneham Street, Coggeshall (NGR TL 8470 2279). It lies along Robins Brook, a small stream which meanders south skirting the western edge of Coggeshall before joining the Blackwater to the south of the Colchester Road.

The following description is based on historic photographs. Robinsbrook mill was a 4 storey 3 bay red brick mill with a gable ended and slate covered roof. It had a stack in each gable wall and a three storey lean to extension to the rear. The brickwork was laid in Flemish Bond. Later windows had been inserted into the original apertures which have segmental rough brick heads. No windows were built into the fourth (bin) floor. A small brick built engine shed lay to the rear.

Although the mill building is still upstanding it has completely lost its roof and internal floors. The red brick east front still remains intact extending its full four storey height, similarly both gable end walls and in-gable stacks are intact although the 3 storey lean- to and rear elevation has in parts collapsed. As it is structurally unstable and potentially on the point of a complete or at least significant collapse, a close inspection of the mill was not undertaken. Similarly an adjacent C19 cottage fronting onto Robinsbrook Road which may have once been the millers cottage is also in a derelict, semi-collapsed state.

Present Use: Derelict

Condition: Very Bad

Sources: Crosby, T. 2002. *Essex Breweries Comparative Survey of Industrial Sites and Monuments No. 16*

Benham, H. 1976. *Some Essex Watermills*

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill/Brewery	C18/C19	Brick	Low
Cottage	C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

The buildings present condition precludes the likelihood of technological survival. Although now a structural shell the site retains some archaeological potential for below ground structures/deposits associated with its previous use as a brewery and a mill

SITE SIGNIFICANCE

A derelict mid C19 example of a brick-built watermill, retaining little significance in terms of its architecture, setting and milling technology.

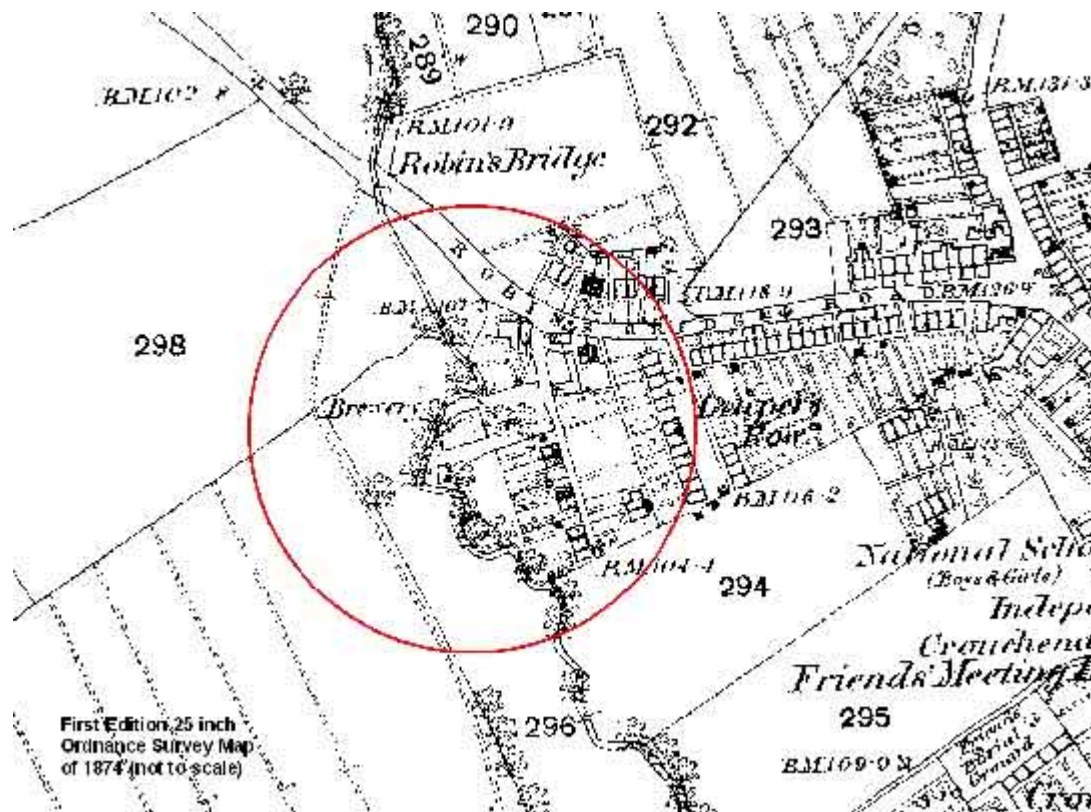
RECOMMENDED ACTION

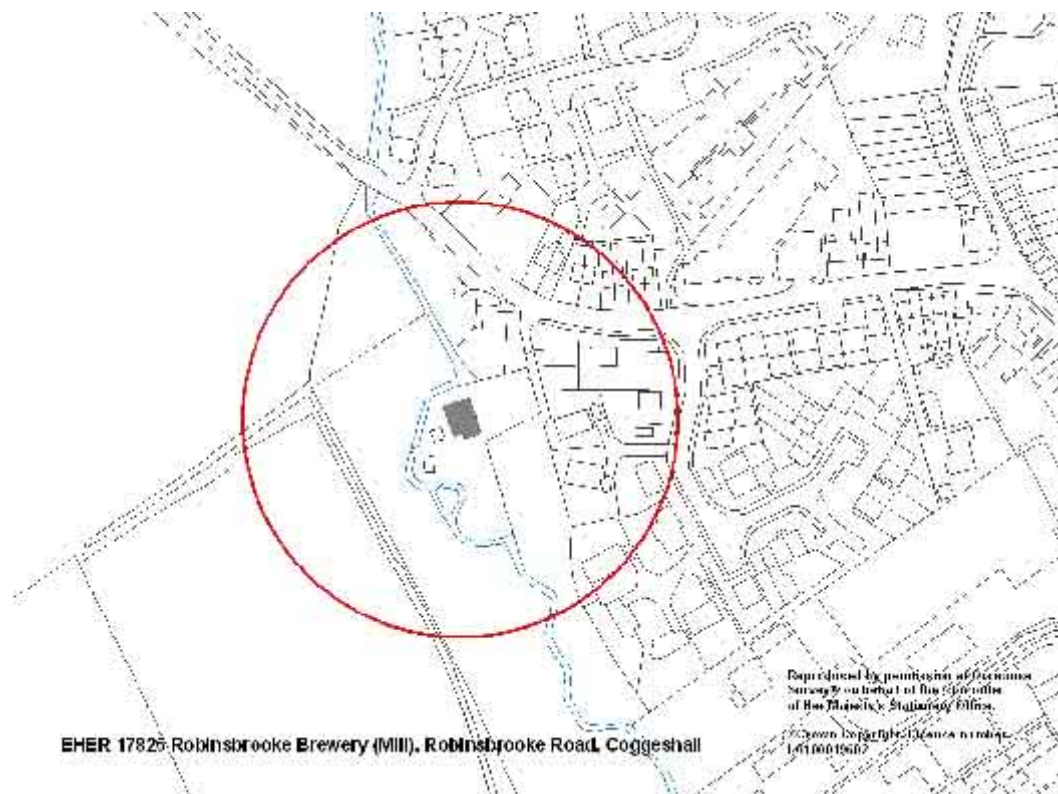
Robinsbrook mill is unfortunately beyond repair and restoration. The remains do not merit any form of statutory protection, although the site should be 'flagged up' in Local Development Documents as a locally important historical site that requires investigation if threatened by re-development

MANAGEMENT

Robinsbrook Mill is presently in a derelict, partially collapsed state. When the opportunity presents itself a historic building survey at RCHME level 3 should be carried out prior to its demolition, followed by an archaeological investigation within the building footprint.

GRADING *





Ruins of Robinsbrooke (Brewery) Mill, looking west

SITE NAME Stisted Mill, Kings Lane, Stisted

PARISH Braintree **DISTRICT** Braintree

NGR TL 79132 24486 **EH** 30204
RIVER Blackwater **EH** 116282

CURRENT STATUS **Con. Area** Yes **Listed** **Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

21/12/1967

Water mill, now a house. C18, extended in C19, converted 1977. Timber framed, weatherboarded, roofed with handmade red plain tiles. Rectangular plan facing SE, one storey and lofts on 2 floors. C19 single-storey extension to left, roofed with slate, and double garage beyond, with lean-to roof of corrugated iron. Ground floor, in main building, one window of 25 fixed lights, one C20 sash of 6 lights, 3 C20 casements; one window of 16 lights in left extension. One C20 casement below lucam, 2 more in gabled dormers. One small C20 light in gabled hoist, one C20 casement in gabled lucam on straight brackets; the sides of the brackets are weatherboarded. C20 door. One pair of vehicle doors in left extension, 2 pairs beyond. The main building has a gambrel roof enclosing 2 floors. The left extension has a roof of low pitch. 2 C20 stacks and one metal flue in rear pitch of main roof, not rising above ridge. The rear elevation has on the ground floor 3 windows of 25, 25 and 24 lights respectively, and 3 C20 casements; 3 casements of 9 lights in gabled dormers, and 2 C20 in-pitch roof lights. French window. Many of these windows are accurate replicas made in 1977 from existing originals of the C18 and C19. Transverse beams on grown knees secured by forelocks. Primary straight bracing in walls, fully jointed main frame. Internally there is evidence that the mill was extended to the right in the C18. The house occupies the right part of the main building, and the right extension. The left end has been partitioned off, containing all the machinery as described in 1976: 'Today the form of the mill suggests it is still the same building which was running a pair of fulling stocks as well as grinding corn in 1775. Its stone floor is so low that the pit wheel rises above its level, so that the wallower and spur wheel cannot be accommodated under this floor as in most water-mills. To overcome this the stones are overdriven, a style more usual in windmills and nowhere else found on these Essex rivers. From the spur wheel up on the stone floor the stone spindles (or quants as they are called in this drive) descend into the stone maces from above, their square shape agitating the shoe without needing a damsel. Under the stones, spindles are still required to raise and lower them on conventional bridge trees. There is a suggestion (as at Codham) that a crown wheel was once squeezed in on the stone floor as well, but the present one is on the floor above, working two lay shafts nicely engineered for various vanished machines. (The) wheel, whose wooden paddles were replaced by iron in 1920, turned the stones till the end of the Second World War and worked the sack hoist till 1960 during the mill's final years when an oil engine drove a hammer mill. Surprisingly, there is no by-valve. It is a long walk up the river to the sluice which had to be used instead' (item 7/266, q.v.).(H. Benham, Some Essex Water Mills, 1976, 59-60). 2 pairs of French stones, wooden **upright shaft**, iron **great spur wheel** and **crown wheel**. **Breast-shot** wheel with cast iron rims and hubs and wooden spokes, mounted on an iron wheelshaft which carries the iron **pitwheel** engaging the iron **wallower**. The C19 extension to the left formerly housed a steam engine and ancillary machinery, now missing except the overhead shafting. The chimney to the rear, shown in a photograph of c.1910, was demolished soon afterwards (F. Spalding Collection, Essex Record Office)

JOHN BOOKERS SURVEY

Small attractive watermill, C18 weatherboarded with Mansard tiled roof and hoist loft: three gabled dormers to north side. In 1915 there were 2 pairs of stones worked by an iron undershot wheel. The mill is reported to have worked until 1968.

Present Use: Part of private residence

Condition: Good

ERO SOURCES: (D/DSF T6), (D/DV2 322)

SITE BACKGROUND:

Stisted Mill lies between the clothing towns of Bocking/Braintree and Coggeshall and probably occupies the same site as a mill owned by the monks of Canterbury Cathedral in 1086. Today the form of the mill suggests it is still the same building which was running a pair of fulling stocks as well as grinding corn in 1775. The stone floor is so low that the pit wheel rises above its level, so that the **wallower** and the spur wheel cannot be accommodated under this floor as in most watermills. To overcome this, the stones are **overdriven**, a style more usual in windmills and found nowhere else in Essex. From the spur wheel up on the stone floor the stone spindles or quants descend into the stone maces from above, their square shape agitating the shoe without needing a damsel. Under the stones spindles are still required to raise and lower them on conventional bridge trees. There is a suggestion that a **crown wheel** was also squeezed into the stone floor, but the present one is on the floor above, working two layshafts for various vanishing machines. The stone drive formerly had iron-to-iron gearing until Edward Metson, father of the last miller Tom Metson, could stand the noise no longer and fitted wood cogged nuts. At the other end of the mill there was another pair of stones driven by a steam engine, used only when the waterwheel was not working through flooding. The waterwheel, whose wooden paddles were replaced by iron in 1920, turned the stones until the end of the Second World War and worked the sack hoist until 1960 (Benham, 1976).

Field Survey 2007

20/07/07

Stisted Mill lies to the west of the village of Stisted, immediately SW of Stisted Hall, to the north of the Coggeshall Road (or Roman Stane Street) and along Kings Lane. The mill is built astride the mill leat and to the NE of the natural course of the river. A three gate manual sluice to the NW of the mill at the junction of the long mill leat and river controls water through to the mill. The mill tail passes below the adjacent road bridge and rejoins the river to the SE. The mill is no longer in use and was converted to residential use during the late 1970s. However during this conversion the southern bays containing the waterwheel and mill gearing (south of the lucam) were partitioned off from the rest of the mill and left relatively unaltered. To the SE and opposite the mill is a converted two storey brick and rendered granary, built or rebuilt in 1934. This sits adjacent to Mill Cottage which in turn lies directly south of Mill House, a C19 (or earlier) two storey house with bay windows to the front and rendered elevations.

Orientated NE-SW across the **mill leat**, Stisted Mill is a 2½ storey, timber framed and weatherboarded mill with a plain tiled Mansard roof. The mill dates to the C18, as characterised by its roof structure and timber framing, but was enlarged to the south in the C19 with the addition of a single storey engine house associated with its adaptation to steam milling. There are no other significant later accretions. The main roof of the mill incorporates an original gable dormer in the southern bay and two modern gable dormers, associated with the mills residential use, in the converted northern bays. Equivalent dormers and roof lights have been inserted into the rear pitch. The dormers to the front flank a central lucam projecting to roadside from the eastern roof pitch. It is supported by straight braces and built into the roof structure

over the lower purlin so that its ridge is at the same level as the main roof. A tier of two taking-in doors were present below the lucam but have been subsequently blocked during the buildings conversion. New windows were inserted into the northern bays at this point and much of the original window joinery throughout the mill was replaced with replicas. The engine house abutts the SW gable elevation and is a timber framed and weatherboarded 2 bay range with a slate covered gable ended roof.

The wheel pit is located between the southernmost bays of the mill and the engine house. It can be accessed via a pair of low and wide boarded doors built into either the front or rear elevations, and is brick built up to the level of the stone floor. It still contains a cast-iron waterwheel set onto an iron axle. The iron floats have been removed but are in the process of being re-fabricated and replaced. Changes in water level has meant that the level of the wheel needs to be raised slightly in order to operate once again (pers comm.). A rack and pinion sluice gate remains to the west and at the mouth of the wheel pit. The wheel formerly turned a large cast-iron pit wheel which remains in the adjacent bay to the north. A cast iron wallower, the timber upright shaft, great spur wheel (with a metal rim and teeth), two **stone nuts** (both with wooden teeth), the quants and two sets of French Burr stones (by Dell & Son and Dunham & Clarke) all remain intact on the stone floor. The gearing requires some attention; the wallower needs to be remounted back onto the upright shaft and due to subsidence, the spur wheel is now jammed beneath a nearby binding joist. On the floor above the **crown wheel** (with wooden cogs) drives two layshafts both with cast-iron bevel gears. The eastern shaft via a band also drives the **sack hoist bollard** on the half floor above and this in turn drives the sack hoist. The sack hoist mechanism has been restored and is fully operational, although it is driven by an electric motor through the layshaft below. More line shafting remains in the adjacent engine house although the main power source, the steam and later oil engines have been removed.

Present Use: Part residential
Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C18	Timber	Med-High
Engine House	C19	Timber	Med
Granary	C20	Brick	Low-Med
Mill Cottage	C19	Brick	Low
Sluice	C19/20	Iron	Low-Med

ARCHAEOLOGICAL POTENTIAL

Although parts of the mill and the mill house have been converted to residential use, all of the main mill gearing and many of the associated technologies, fixtures and fittings survive within the mill.

SITE SIGNIFICANCE

Stisted mill is unique as it survives as the only watermill with overdriven stones in Essex. Additionally the mill still retains its main mill gearing and with some attention, in particular the realignment of the waterwheel and alterations to floor levels, it is one of only eleven mills in the county that retain the potential to operate once more by water or steam power. The mill shares group value with the attached engine house, the mill cottage, granary, road bridge and sluice.

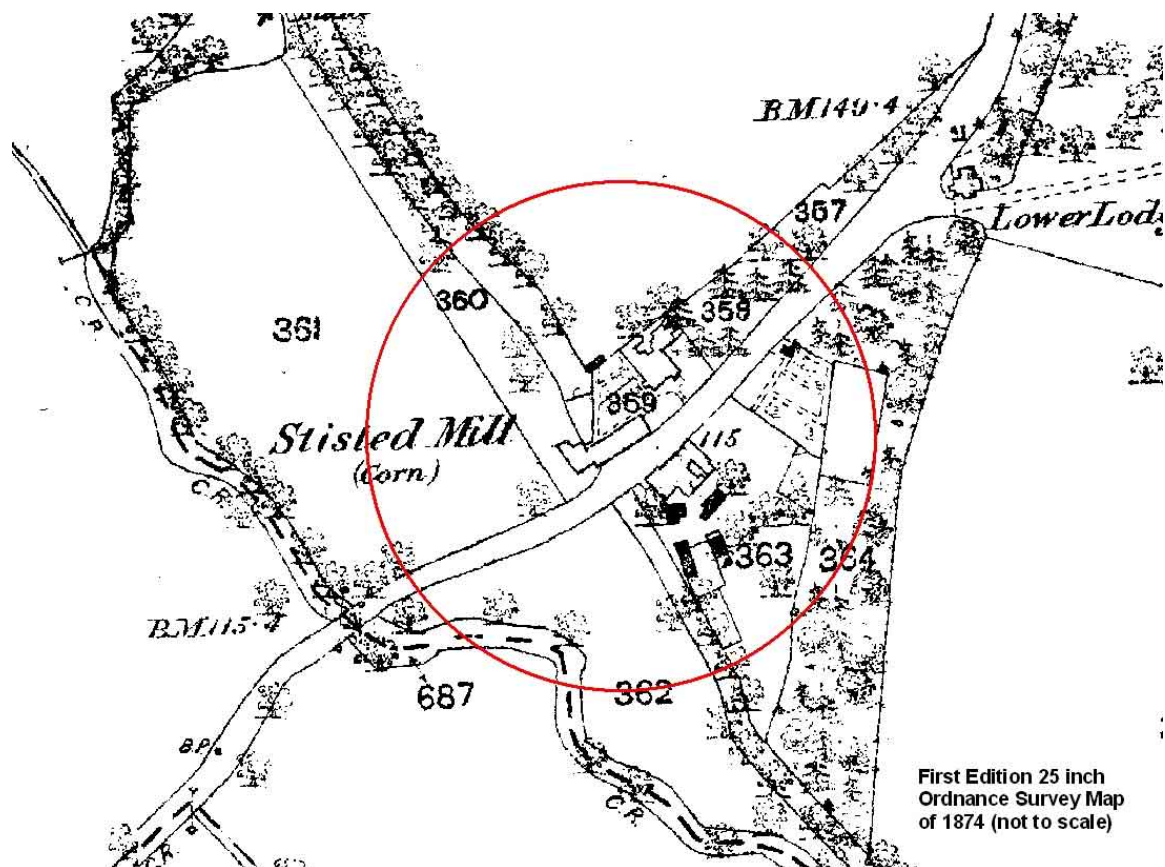
RECOMMENDED ACTION

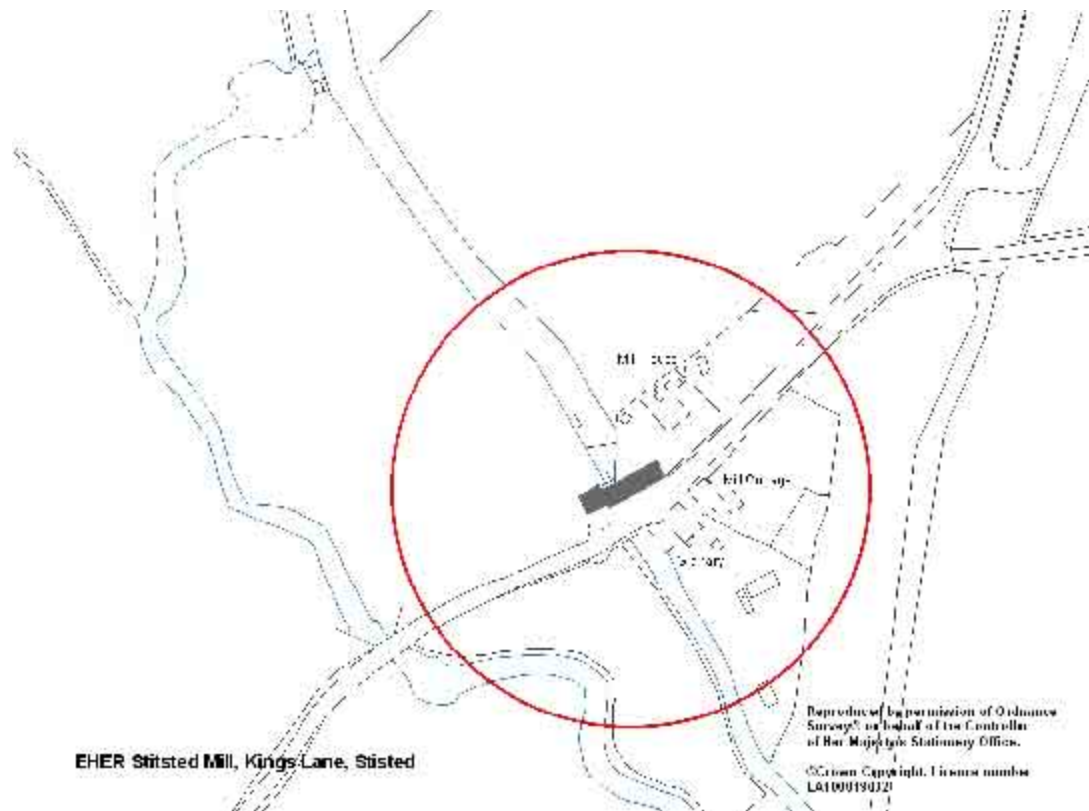
Given the survival of its milling apparatus and the unusual arrangement of overdriven stones Stisted Mill should be upgraded to Grade II* to bring it in line with other mills of equivalent technological and architectural integrity.

MANAGEMENT

Stisted mill, mill house and engine house are presently in use as a private residence or in utility use and accordingly are well maintained. Should the opportunity present itself, an internal inspection should be sought while if the mill becomes threatened by alteration, major works or demolition, its significance should first be considered by an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features, and then by a detailed historic building survey at RCHME level 3 or 4.

GRADING ***/****





Stisted Mill and Engine House, rear elevation, looking south-east



Stitsted Mill looking north-west



Stitsted Mill, overdriven mill stone and pit wheel

SITE NAME	Townsford Mill, Causeway, Halstead
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PARISH	Halstead	DISTRICT	Braintree
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NGR	TL 8130 3040	EH	26109
RIVER	Colne	EHUID	113842

CURRENT STATUS	Con. Area	Yes	Listed Grade	II*	EBAR	No
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STATUTORY LIST DESCRIPTION

22/02/1950

Built in 1807 by Samuel Courtauld, when he moved from Pebmarsh and established his silk mills in Braintree. Modern mills now extend over larger area and this is the only remaining original building. 3 storey weatherboarded, roofs in grey slate, rows of windows with small glazing bars. Stands astride the river stream. Originally had a beam engine. Forms picturesque group with Mill House.

SITE BACKGROUND:

The Domesday Book records the presence of three mills in the Halstead Area, one of which was most likely built on the site of the Townsford Mill. The surviving structure dates to 1788 when it was rebuilt as a water-powered cornmill (Medleycott, 1999). This mill was then bought by Stephen Beuzeville, who in 1825 engaged Samuel Courtauld to convert it to a silk throwing and weaving mill. After Beuzeville's business failed in 1828 Courtauld bought the mill, and established it as the principal milling site of the Courtauld business. The ground floor of Townsford mill was converted for use in drawing silk, the first floor for winding and the top floor for weaving. Gradually as the Courtauld business grew the factory here was extended. In 1832 a power loom factory was opened, equipped with 106 looms. A second was added in 1836 and another in 1842. Steam power was introduced in 1828 and a beam engine was fitted in 1844 as the works expanded, increasing size of the factory and the number of looms. Gas lighting was introduced in 1838 and gas power was installed in 1892, with Crossley gas engines and a producer gas plant in 1894. The use of gas did not last long however and when a further extension to the mill was built in 1905 a new steam engine was installed (Crosby, 2001).

Field Survey 2007

09/07/07

The late C18 weatherboarded mill sits astride the River Colne, and is currently in business use, incorporating a restaurant on ground floor with an antiques centre on the two floors above. The mill house (EHER 26110), built in line to the SW, also dates to the late C18 and is now in use as offices for the Halstead Town Council. Immediately west of the mill is a small octagonal plan mid C19 grade II listed Gatehouse (EHER 26115), an equivalently listed C18 Coach House (EHER 26116) and a steam or boiler house adjacent to the sluice (TL8129 3041). Remnants of the former silk factory site survive to the NW of the mill in the form of a mid C19, 20 bay red brick factory extension (now part of the shopping centre 'Weavers Court') and two small ancillary buildings, a small gatehouse dated 1904 and a larger first aid building marked 'SC&Co Ltd, 1912'. The rest of what was a very extensive commercial operation was demolished and replaced by a shopping centre and car park.

The mill is three storeys high with weatherboarded elevations under a gable ended slate covered roof. The ground and first floors are distinguished by continuous or strip glazing incorporated to increase light levels to the working floors. These windows, alternatively known as weavers windows, typically comprise 5 x 5 small glass panes with ovolo moulded glazing bars that pivot open at the bottom only. The windows of the second floor are the same design but are not continuous, set out with

one window per bay. Adjacent to the mill is the two storey late C18 century mill house. This has a rather complicated double pile part Mansard roof with plain tiles, plastered elevations, a full height canted bay and vertical sliding sashes of a similar appearance to the mill. Internally (mill) a succession of C19 straight flights and floor boarding remains in the southern stairwell bay. This stairwell bay can be accessed front either the front or rear, the former retaining its original door fitted with a substantial locking mechanism. The floor boards across the first and second floor have been mainly replaced although a soft wood match boarded dado with a bead decoration intermittently survives below window sill level. The main structural frame is built using softwood, with some larger joists displaying typical Baltic marks. The roof structure is of a relatively light construction and accordingly has additional bracing set both diagonally and longitudinally between each truss. The trusses were built with a central iron 'king' bolt with paired raking struts trapping a single purlin in each pitch and a low collar bracing the inner raking struts. No evidence of technology, fixtures or fittings remain within the two upper floors, although a hoist is reported to survive on the second floor.

The sluice to the front of the mill and on the northern bank has been renovated and modernised as a response to the need for improved flood management along the Causeway and surrounding areas.

Present Use: Antiques and Restaurant

Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water/steam mill	Later C18	Timber	Med-High
Mill house	Later C18	Timber	Med
Gate House	Mid C19	Timber	Med
Coach House	C18	Brick	Med
Sluice	C19 / C21	Iron	Low-Med
Steam/bolier House	C19	Brick	Low-Med

ARCHAEOLOGICAL POTENTIAL

The original weatherboarded mill remains largely intact as a fine example of a late C18 corn mill converted to silk weaving in the early C19. This mill is largely intact externally and warrants a thorough internal inspection to determine levels of technological survival and assess significance. The watercourse and sluice are also intact.

SITE SIGNIFICANCE

The site is significant as one of the most important water-powered textile mill sites in Essex. This significance is further heightened by its association with the Courtauld family business, silk throwing and weaving and other textile mills (New Mills, Abbey Mills, etc) of the area. The site has group value with associated listed structures (gate and coach house) and the unlisted remnants of the former works (factory extension, gatehouse and first aid shed). In a wider context they also have group value with the industrial housing built along The Causeway, at Vicarage Meadow and Factory Terrace, although these are now somewhat divorced, being the other side of the shoppers' car park.

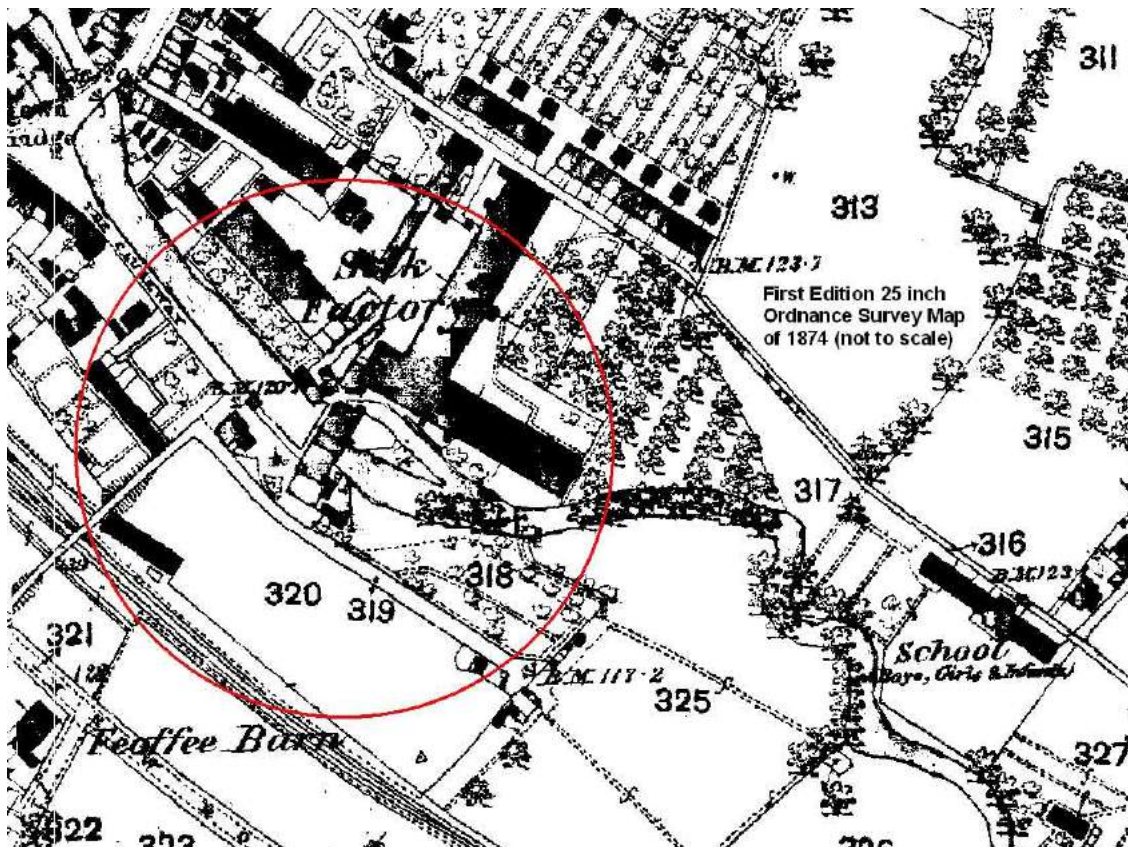
RECOMMENDED ACTION

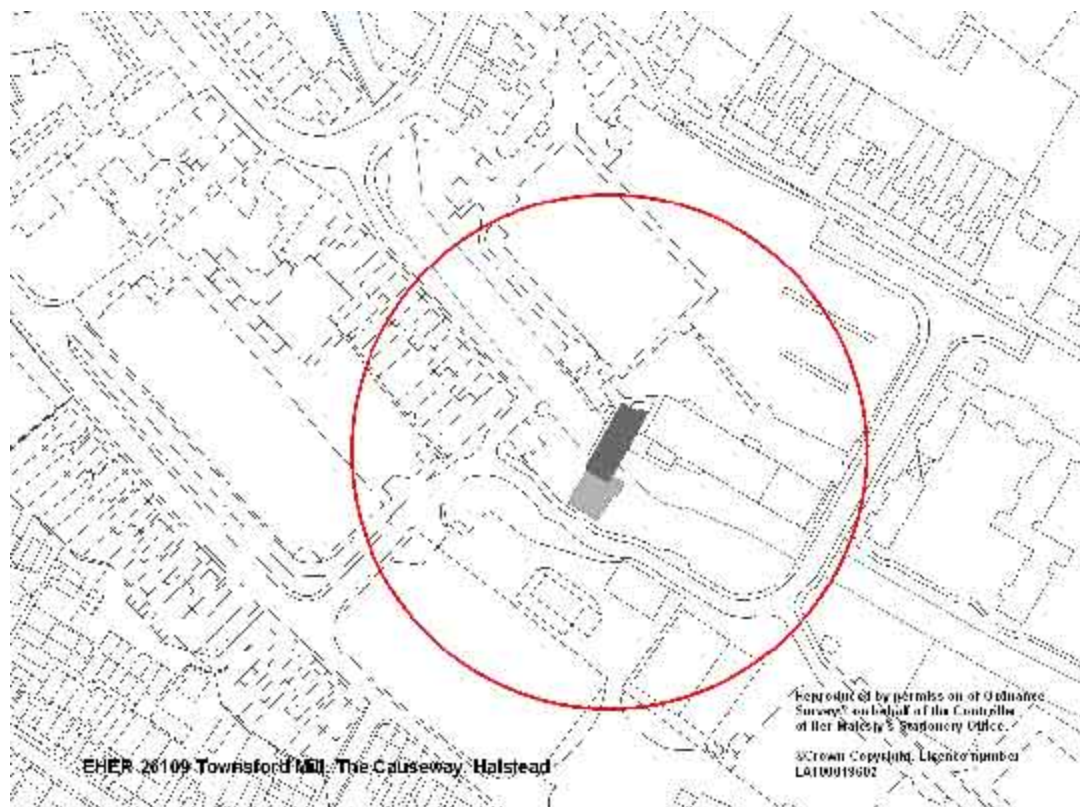
Maintain current Grade II* status of mill and Grade II status of the mill house.

MANAGEMENT

All the structures described are in use as retail and commercial premises and appear to be well maintained. Considering the importance of the mill an historic building impact assessment, to identify and assess the significance of extant features/technologies, should be implemented. This may be followed by an historic building survey at an appropriate level (3 or 4), which at a minimum will comprise floor plans, technical details, details of the internal structure, photography and textual analysis.

GRADING **/**





Townsford Mill and Mill House, rear elevation, looking north

SITE NAME	Wethersfield Mill, Braintree Road		
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PARISH	Wethersfield	DISTRICT	Braintree
NGR	TL 72026 29584	HER	28226
RIVER	Pant	EHUID	115638

CURRENT STATUS	Con. Area	No	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

08/06/1978

Watermill, partly converted to a house. C16, altered in C19. Partly timber framed and weatherboarded, partly of red brick in English and Flemish bonds, slate roof. L-plan, comprising timber framed range aligned N-S, and C19 brick range extending to W of N end, with C20 conservatory beyond. Three storeys. E elevation has base wall of red brick in English bond approx. 1 metre high, weatherboarded above. Ground floor, one halved door, 2 C19 casements, two hinged hatches. First floor, three horizontal sashes of 12 lights. Second floor, three C19 casements. North elevation is weatherboarded at left, of red brick in Flemish bond at right. Ground floor, one C20 casement. First floor, 2 C20 fixed lights with loading doors outside. Lucam on serpentine braces with C20 casement. Three flush skylights. The top storey of the N-S range was added c.1890. Overshot wheel, some machinery surviving, including friction drive sack hoist.

JOHN BOOKERS SURVEY

15/02/1972

Red brick Victorian mill house and small C19 weatherboarded watermill nearby in what appears externally to be in a bad state of repair. It is reported that the mill contains a waterwheel, one pair of stones and early rollers

Present Use: Disused

Condition: Poor

ERO SOURCES: (D/AMW 1/23), (D/DH t T295/5,7)

SITE BACKGROUND:

Documents referring to Wethersfield Mill can be traced as far back as the later C17. A deed of 1673 refers to Wethersfield Mill (ERO D/DK/T302) and its sale by gentleman Purpill Templer and his wife Ann to gentleman Robert Plume in 1675 (ERO D/DHt/T295/5). There is a recognizance of Thomas Bedlow, Wethersfield (miller) to prosecute for the theft of two sacks of corn in 1695 (ERO Q/SR485/3). In 1754 the owner of Wethersfield Mill, Mr J.Morley of Halstead, added an overshot wheel to his 'ground mill (groundshot or undershot) on the same stream'. He over-calculated the head needed and flooded hop fields upstream, thereafter he was required to make a drain and keep the water in his pool at the old levels (Benham, 1976). A valuers notebook records the mill belonging to the late Charles Davey in 1854-55 (ERO D/F35/2/216) and for a century and a quarter it was owned by the Fitches and their descendants the Campbells, who still farmed there in the 1970s. From 1912-1920 the mill was worked by Mr. Parmenter and from 1923-1938 by F. & S. Ashby of Codham Mill, the latter relinquishing Wethersfield Mill due to a paucity of work for both. Its gate was rebuilt in 1941 and a crusher was run by the wheel until 1957.

The mill has a fine waterwheel with iron trough buckets, three stone nuts, two with sliding disengagement gear and pinion jacks for the converted stone spindles. Based on the style of the tentering handles (as at Stebbing) the gearing may be the work of Christy Norris. The Mansard has been replaced by a straight pitched roof and at the same time the walls raised to obtain sufficient room for the bin floor (Benham, 1976).

Field Survey 2007

12/09/07

Wethersfield Mill is located to the north of Shalford and along a narrow track following the course of the river to the west of Wethersfield Road. It lies on the northern bank of the river Pant which runs to the south of the mill but is also channelled through the wheel pit situated within its southern bays. The mill forms part of a small group of buildings which includes a listed Grade II C18 brick built stable, coach house and timber framed barn (EHER 28237) and a Grade II mid C19 mill house designed by Fredric Chancellor (EHER 28236). The mill and mill house are both in residential use while the adjacent outbuildings are in part residential, part studio use.

Wethersfield Mill has evolved into an L shaped plan building comprising a ?C16 timber framed mill aligned N-S and a late C19 brick built range added onto the rear (W) of its northern bays. The mill was re-roofed in the C18 with the addition of a Mansard, although this was replaced by its present roof when the mill was heightened and the brick extension was added in c.1890. The front (N-S) range is a timber framed and weatherboarded mill built over 5 bays. It now has a gabled ended and slated roof which incorporates an oversailing lucam projecting from ridgeline of the northern end wall. The lucam is supported on thin serpentine brackets and overlies a taking-in door at first floor, now glazed but retaining its boarded (C19) door. The windows of the eastern front are symmetrically spaced and include C19 12 light horizontal sliding sashes on the ground and first floors and smaller vertically pivoting casements on the second floor. The main mill entrance lies off centre and has a halved boarded door with strap hinges and a pentice with decorative brackets. It is flanked by a low red brick plinth built in English bond which extends along the base of the eastern elevation. The weatherboard across the entire mill is modern softwood replacement. The later brick built range to the rear was built to an equivalent 3½ storey height but only 2 bays in length. It is built in red brick, with some burnt headers, laid in Flemish bond and has a slate covered gable ended roof contemporary with the reworking of the roofline to the front. A taking-in door, now glazed, but retaining its boarded door (as in the adjacent weatherboarded range) is present at first floor and lies above an inserted door opening with a modern glazed door at ground floor. The rough brick segmental arch above the taking-in door is flanked by large tie bar bosses. Similar rough brick segmental arches are used for window heads throughout the later range. Abutting the west end of the later range is a contemporary lean-to, now converted for garaging.

At the time of the survey access was not available so no definitive comment on the survival of internal features or the extent to which the mills gearing remains can be made. Some technology still survived when Benham visited the mill in 1976 and bearing in mind similar references were made in the 1978 list description following its conversion and after a visit in the 1980s by the then county millwright (V. Pargetter), it seems likely that at the very least the *'Overshot wheel and some machinery including the friction drive sack hoist'* remains.

Present Use: Private Residential Use

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C16	Timber	Med-High
Mill House	C19	Brick	Med
Stables, Coach House & Barn	C18	Brick/Timber	Med

ARCHAEOLOGICAL POTENTIAL

Given the extent of the mills conversion to residential use it seems unlikely that significant levels of milling technology, fixtures and fittings remain.

SITE SIGNIFICANCE

Although Wethersfield Mill has been converted to residential use and as such its historic and technological integrity has been compromised, the mill still survives, as one of only eight surviving mills in Essex that were built with an overshot wheel and a one of an even smaller number that retain historic fabric dating to the late medieval/early post-medieval period. It also shares group value with the surrounding outbuildings and the C19 Mill House by Fredric Chancellor.

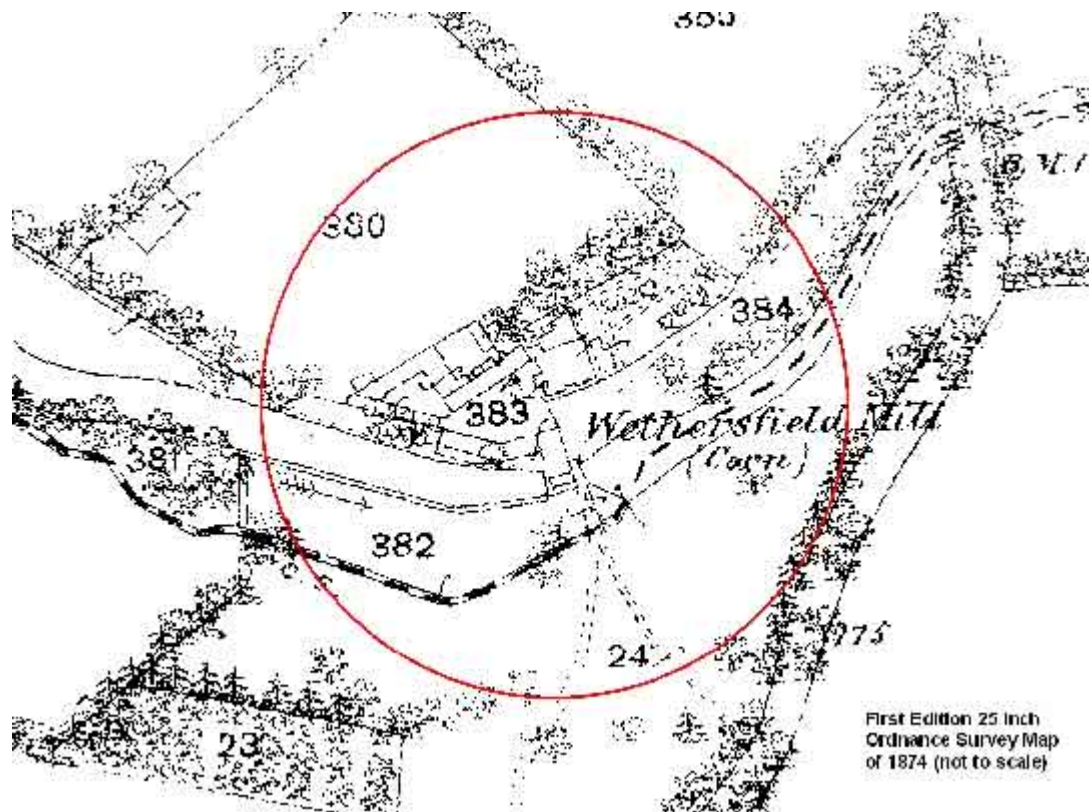
RECOMMENDED ACTION

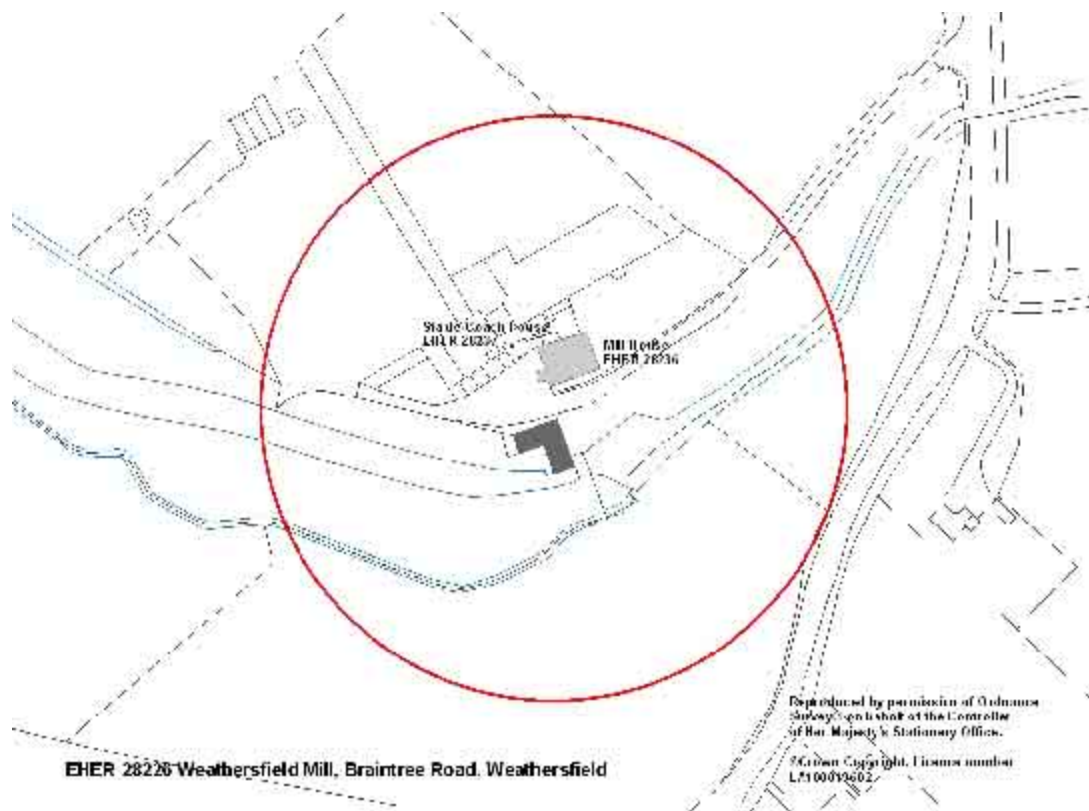
Maintain its current Grade II listing

MANAGEMENT

Wethersfield Mill is currently in private ownership, occupied and well maintained. Should the opportunity arise an internal inspection of the mill followed by an historic building record at RCHME level 3 is recommended to assess and record the internal spatial configurations and survival of technologies, fixtures and fittings.

GRADING ***





Wethersfield Mill looking south

BRENTWOOD DISTRICT

EHER	Site Name	Grade
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26703	Black (or Princesgate) Mill, Princes Road, Navestock	**
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SITE NAME	Black (or Princesgate) Mill, Princes Road
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PARISH	Navestock	DISTRICT	Brentwood
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NGR	TQ 55880 96920	HER	26703
RIVER	NA	EHUID	373786

CURRENT STATUS	Con. Area	No	Listed	Grade II	EBAR	No
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STATUTORY LIST DESCRIPTION

20/02/1976

Steam mill, now house. C19. Timber-framed (softwood, primary braced) and weatherboarded, roof slate. 2 storeys and attics. Central wrought-iron weather vane. All the gables have ornamental barge boards and the N gable of the main block has a projecting gabled hoist loft. Upper floor unaltered. A lower gabled wing projects from the main block at the E end and here is a long single storeyed range of weatherboarded, pan-tiled outbuildings extending round a yard to the E. 2 cast-iron stanchions supporting first floor said to have been single one originally, cut in half. The Mill and the adjacent granary (qv) form a group.

JOHN BOOKERS SURVEY

16/10/1970

Victorian weatherboarded mill building with slated roof. 2 storeys, hoist loft and elaborate weather vane. One of a few steam mills built away from a traditional milling site and distant from water or rail communications. On map evidence it appears to have been built around 1870 or slightly earlier.

Present Use: Part of Farm**Condition:** Fair; no machinery**FIELD SURVEY 2007**

24/05/07

A large primary braced soft wood timber-framed 3½ storey steam mill converted to residential use around 1980. Attached to the east of the mill is a range of single storey timber framed sheds which follow the road and dog-leg south at the road junction to partly enclose a yard SE of the mill building. To the west lies a weatherboarded C18 granary and to the south a traditional timber-framed barn and farm house belonging to Princes Gate Farm. Neither agricultural buildings (granary, barn) are within the curtilage of Black Mill but are buildings associated by group value.

The entire mill is clad in softwood weatherboard apart from the ground floor which is rendered. The main roof is gable ended E-W but is built with a cross gable presenting a gabled pediment to roadside. The lucam projects from the road side cross gable and adopts the same architectural styling as the main body of the building. A Gothic treatment is provided by (replacement) shaped barge boards, spike finials and pendants which decorate the roof line and a large central wrought-iron weather vane. New windows have been inserted into the long elevations of the lower two floors only as these two floors are incorporated into the residential conversion. The second floor and attic space remain purely as storage areas. All the windows and doors are modern. A fluted cast-iron column has been reused in the present kitchen but apart from primary braced partitioning associated with grain bins on the second floor and a central axial gantry in the roof space, no internal fixtures, fittings or technology survives within the mill. The roof structure is original, comprising machine cut softwood rafters which rise and pinch a ridge board. The single storey sheds appear to be contemporary with the mill and are timber framed, primary braced with a side purlin roof and ridge board.

Present Use: Residential
Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam mill	Later C19	Timber	Med
Outbuildings/sheds	Later C19	Timber	Low
Granary	C17	Timber	Med-High
Barn	C17-18	Timber	Med

ARCHAEOLOGICAL POTENTIAL

Due to the extent of Black Mills' conversion to residential use, no significant milling technology, fixtures or fittings remain.

SITE SIGNIFICANCE

One of a small number of later C19 timber-framed steam mills built in the county. Despite the impact upon the historic and technological significance of the building brought about by its conversion to residential use, the mill still shares group value with the cluster of historic farm buildings at Princes Gate Farm.

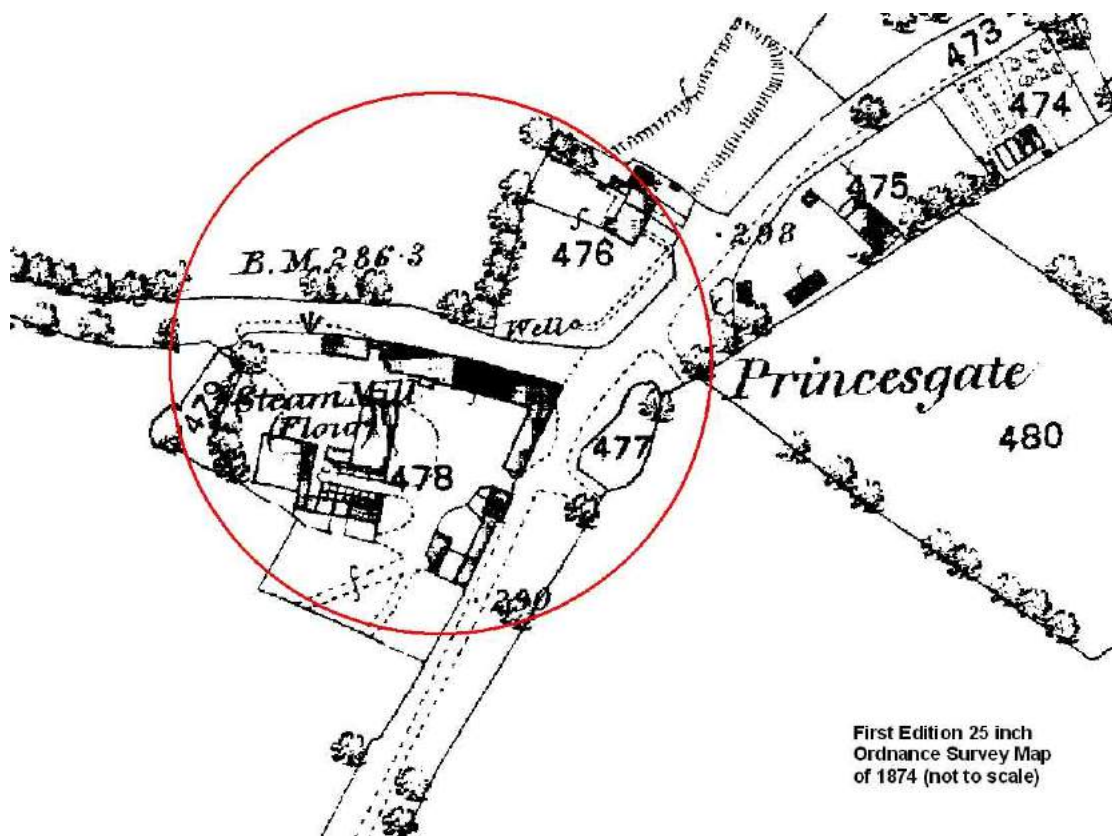
RECOMMENDED ACTION

Maintain current Grade II listing

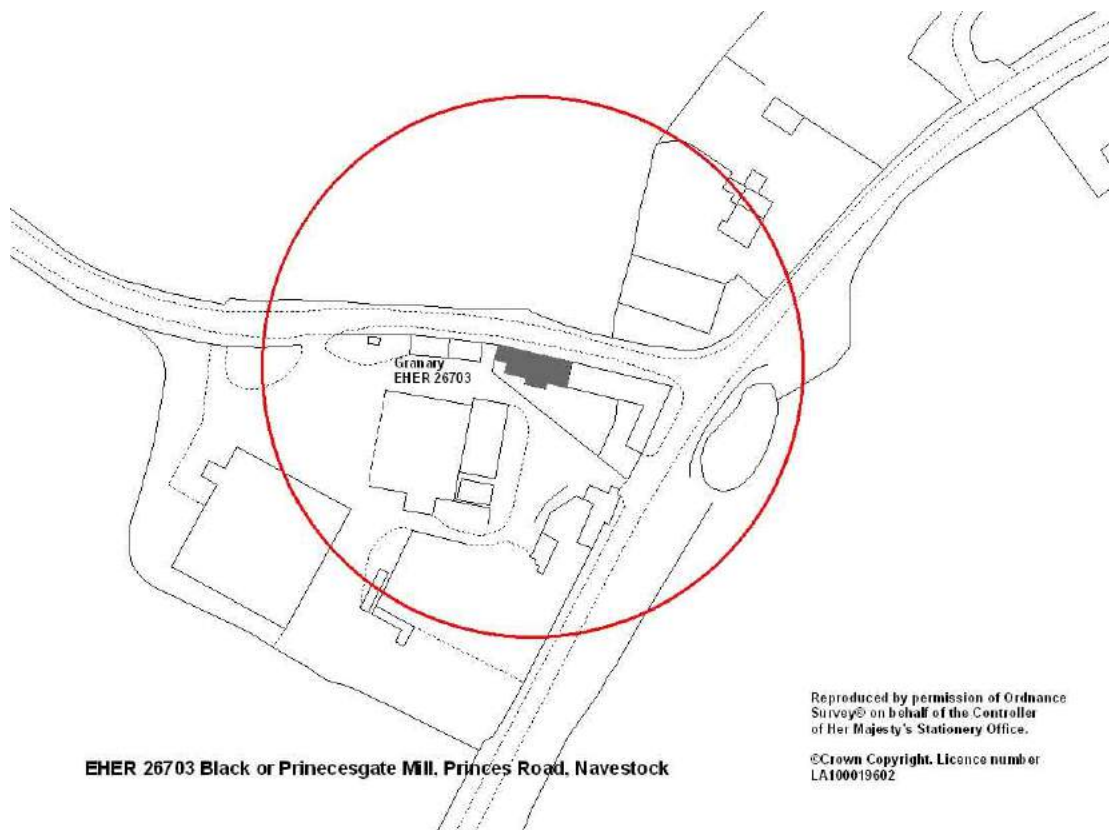
MANAGEMENT

Black Mill is currently in private ownership, occupied and well maintained. Should the opportunity arise an internal inspection followed by a historic building record is recommended to assess and record internal spatial configurations and survival of technologies, fixtures and fittings.

GRADING **



First Edition 25 inch
Ordnance Survey Map
of 1874 (not to scale)



EHER 26703 Black or Princesgate Mill, Princes Road, Navestock

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Black Mill looking east

CHELMSFORD DISTRICT

EHER	Site Name	Grade
Watermills		
31527	Barnes Mill, Mill Vue, Chelmsford	**/**
30651	Croxtons Mill, Blasford Hill, Little Waltham	**
15084	Moulsham Mill, Parkway, Chelmsford	**/**
31579	Old (Hylands) Mill, Off Bekeswell Lane, Chelmsford	**/**
31618	Springfield Mill, Victoria Road, Chelmsford	**/**
Steam Mills		
15082	Chelmer Mill, Hoffman Way, Chelmsford	**/**
40763	East Hanningfield Steam Mill, The Tye, East Hanningfield	**/**
15083	Old Silk Mill, Hall Street, Chelmsford	**
40671	Meesons Steam Mill, Hawk Hill, Battlesbridge	**/**



SITE NAME Barnes Mill, Mill Vue Road			
PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 72680 06520	EHHER	31527
RIVER	Chelmer	EHUID	352523
CURRENT STATUS	Con. Area Yes	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

20/05/1949

A mill of circa 1700, timber framed and weather-boarded. Two storeys high with attics in mansard roof. Fenestration altered by modern conversion into a residence. Roof peg-tiled and plan rectangular. Formerly a breast-shot water wheel, for which the sweep survives. Framed in heavy oak with fine roof trusses having queen posts and elaborate bracing. Passing-braces halved into the east and west walls. The up-and-down shaft remains in situ, of polygonal shaped timber, mounting an octagonally canted great spur wheel with 8 compass-arms. The sack-hoist friction ring survives, also with compass-arms.

JOHN BOOKERS SURVEY

03/09/1973

Late C18 weatherboarded and timber-framed mill and adjacent mil house near Barnes Lock. The mill has been adapted over the last 20 years to grind by electricity for farm purposes. This has resulted in some alterations at the S. end of the ground floor and the building of a ramp for tipping in front of the east face. Some machinery remains; the cast-iron axle and bearings of the waterwheel are in place, the pit wheel has been removed (and the pit filled) but there is a cast-iron wallower beneath the wooden spur wheel. The main shaft is wooden and in situ but the crown wheel has been removed. There is nothing left of the stones on the first floor but the remains of 5 pairs were noted in 1959. On the second floor there is an early hoist wheel and axle shod in iron. Adjoining the ground floor at the SW end is an interesting brick extension with cast-iron window frames, of c.1840 used for steam engine and boiler long since removed, but the pulley wheel remains on the wall and there is a shaft to the great spur wheel. On the first floor there are 2 cast-iron columns by F. Christy (Ironfounder). A lease of a watermill called Barnes Mill with 2 stones in 1648 refers to 'culleyne mill' while an earlier reference in 1569 refer to Barnes Mill. The Marriage family deeds (1774- 1848) also refer to Barnes, Springfield and Croxton mills.

Present Use: Disused

Condition: Dilapidated

ERO SOURCES: (D/DAC 213), (D/DPI 1), (C/T 378/12-35)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

In 1408 Coggeshall Abbey owned this fulling mill. Having been bought by the Mildmay family after the Dissolution, William Mildmay left Barnes Myll along with Sampford Barnes to his grandson (also William Mildmay) in 1570. When the Mildmay estate was disposed of the mill was described as a 3 storey mill erected in brick and timber with a slate roof and iron undershot wheel, pit and wallower wheels and a good wagon shed. In 1792 Barnes Mill was occupied by Joseph Marriage and it had at that time four pairs of stones. It remained with the Marriage family, under the management of Thomas in 1823, then Thomas and Walter in 1848 employing Henry Hicks as miller from 1867 and finally Frederick Marriage until 1917. New Floodgates built to designs by Fredric Chancellor were added in 1912 (ERO D/F 236). Copies of documents relating to Barnes Mill, Springfield include an inventory of the steam

boiler, engine and machinery erected by Messrs F. and H. Hicks on the 9th September 1875 and a valuation with measurements of the tenant's (Mr. P. Marriage) machinery, fittings etc., also made by Messrs Hicks (ERO T/B 374/1). The mill continued in use until 1957 and after the shaft broke it was adapted to electrical power. Barnes Mill then fell into dereliction and was finally converted into a dwelling in 1975. Following its conversion the mill has been occupied by Mr Tuck, Alec Gunn and the present occupants who have been in residence since 1999.

There is records of a corn windmill (Tithe 1842, OS 1875) sited just east of the division of the river into the lock leat and the headrace leat, which may have worked in tandem with the watermill. It was demolished by 1897.

Field Survey 2008

16/01/08

Barnes Mill is sited downstream from Moulsham mill (EHER 15084), lies toward the eastern extent of urban Chelmsford and is bordered to the south by the water meadows/flood plain of the Chelmer Valley. An engineered stretch of the Chelmer (Navigation) passes at a short distance immediately south of the mill, off which the original path of the river loops to the north and rejoins the Navigation to the east. A sluice gate to the west (on the original river course) drains into a by-pass channel which runs around the mill to the south and into the mill pond to the east. Another set of paddles (shut) sited just to the west of the mill and draining directly into the by-pass enables a finer adjustment of water flow through the mill. The complexity of the waterways to the mill is due to the construction of the adjacent Barnes Mill Lock, added when the Chelmer was canalised in the late C18. The tail water passes through a pair of brick arches immediately to the east of the mill. The southern arch is allied with the wheel pit and the northern with a further shut (latterly) controlling water through the wheel pit. Without further investigation it is unclear whether the mill operated two wheels, as the twin arches suggest, although this is a distinct possibility as Barnes Mill was reportedly a six pair mill (i.e. twice the more typical three pair).

Barnes Mill is an C18 part brick, part timber-framed and weatherboarded 3-3½ storey watermill built astride the watercourse on an approximate N-S axis. The steam engine, boiler house and chimney reported by Booker in 1973 (see above), abutting the southern end wall no longer survives, although one cast-iron framed arch headed window, typical of C19 steam engine and boiler houses, remains and is used as a garden feature. A contemporary C18 timber framed and plastered in-line mill house (EHER 31526) adjoins the mill along its northern gable wall. The mill has a Mansard roof with a plain tile lower pitch and a slate covered upper roof, i.e. that between the upper purlin and the ridge. A former oversailing lucam, since converted into a feature window, projects riverside from the southern gable wall, while another lucam, now resembling a gable dormer, lies off-centre and just above the eaves along the rear long (west facing) elevation. Three cat-slide dormer windows punctuate the roofline along the rear pitch. The ground floor is built or rebuilt using gault brick interspersed with occasional soft reds. The upper floors are clad with modern feather-edge weatherboard, painted white to the front and gable ends and treated with a bitumen based paint to the rear. All the present windows are modern replica multi-pane sashes and casements.

Following the mills conversion to residential use in 1975, almost all of the mills internal fixtures and fittings were removed. Notable exceptions are the octagonal timber **upright shaft**, the wooden compass arm **great spur wheel** (with apple wood teeth), the **wallower gear** at the base of the shaft and the timber **hursting**. The **stone nuts**, **crown wheel** and mill stones have been removed and although the **pit wheel** no longer remains, the iron **waterwheel** shaft, wheel hubs and **shut** to the **wheel pit** does. The upper (bin) floors and the roof structure were not examined, though reportedly the grain bins and sack hoist mechanism have been removed. A

disparity in the floor levels across the building and in the timber framing may suggest that the northern 3-4 bays are not contemporary with the southern half of the building.

The Mill house (EHER 31526) dates to c.1700 and is a timber framed and plastered house laid out over an L shaped plan. It is built over two storeys with a north front of 3 bays, a central door and a timber porch with two Ionic columns and an entablature. A three window range of modern casements is above and the roof is peg-tiled, ridged and gabled with half hips. One chimney stack is present in southern slope. The interior has been completely modernised.

The sluice gate, manufactured by GLOVER & HOBSON LTD (Marven) Builder, still retains most of its C19 structure, apart from some of the cogs and the racks which had lost teeth and have now been re-fabricated to the previous designs in mild steel. To the south of the mill and along the manmade stretch of the Chelmer Navigation is Barnes Mill Lock (EHER 31011). The lock and lock gates date to c. 1797 and were built to the designs of engineer John Rennie and carried out by Richard Coates. The lock walls are built in red brick in English Bond with large granite coping stones and quoins. The wooden lock gates with iron hooks and chains and winding gear are all intact. It survives as one of 12 original locks along the Chelmer Navigation.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C18	Timber/Brick	Med -High
Mill house	C18	Timber	Med -High
Sluice	C19	Iron/timber	Low-Med
Lock	C18	Timber/Brick	Med

ARCHAEOLOGICAL POTENTIAL

The mill's conversion to residential use has removed the majority of its technological fixtures and fittings and much of its spatial integrity.

SITE SIGNIFICANCE

The mill is typical of the many residential mill conversions which retain elements of the stone drive as features to add character to the final scheme. It is also typical in its construction and styling of the many C18 timber framed river mills built in Essex, although some uncertainty remains as to the arrangement of the wheel pit/s.

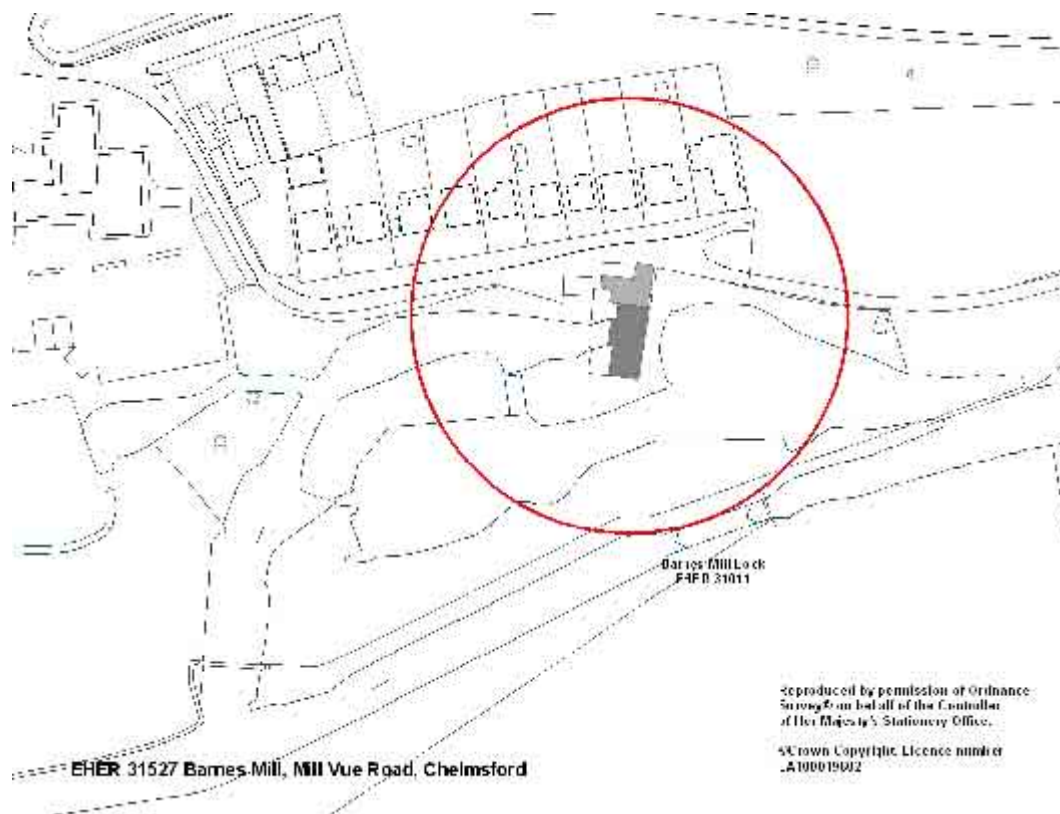
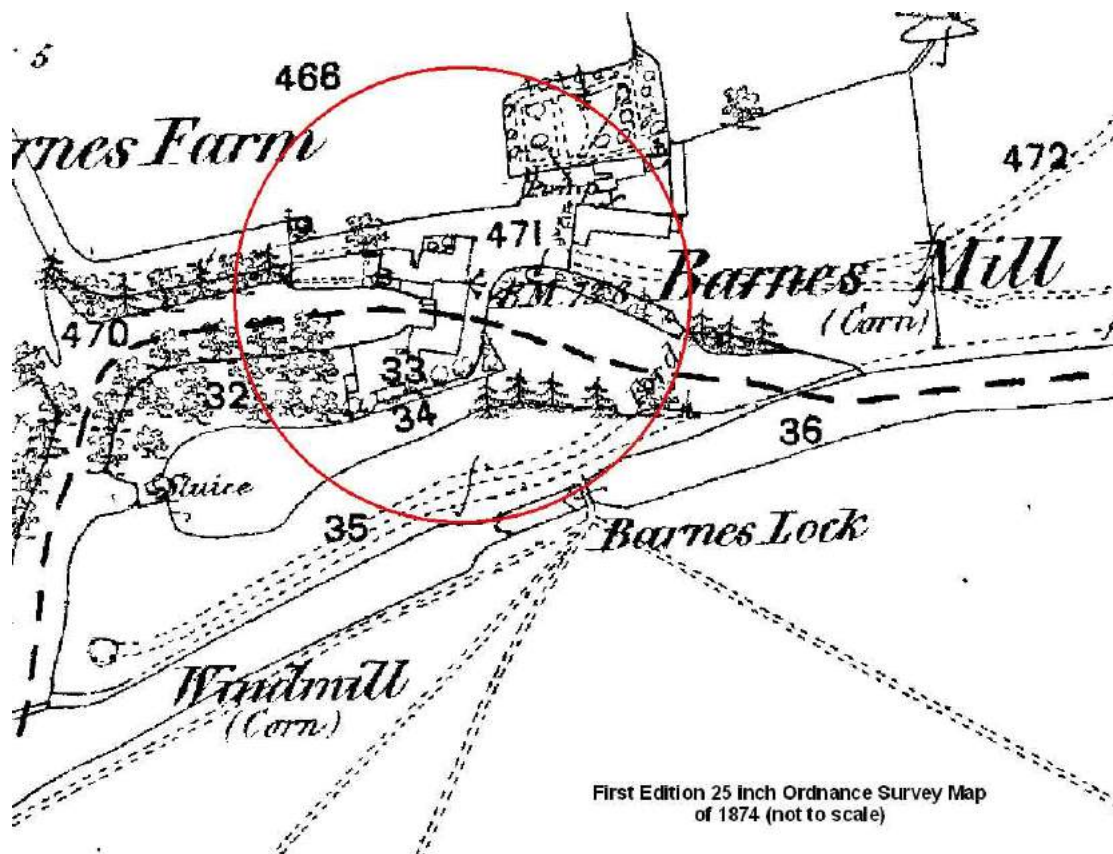
RECOMMENDED ACTION

Maintain its present Grade II listed building status

MANAGEMENT

From a brief visit to Barnes Mill a number of questions regarding its structural and functional development have arisen. A detailed historic building survey at RCHME level 3 should be recommended if the mill building becomes the subject of a planning application for major works.

GRADING **/**





Barnes Mill and Mill House looking west

SITE NAME Chelmer Mill, Hoffman Way			
PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 711 075	EH	15082
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

SITE BACKGROUND:

In 1898 William and Henry Marriage (W. & H. Marriage & Son) purchased Bishops Hall Mead between the Hoffman Ball Bearing Works and the railway and then proceeded to engage local architects Fredric Chancellor & Sons to design a new steam powered roller mill. Plans were drawn up in 1900 by Chancellor (ERO D/F 8/630) and works proceeded with the construction of the Chelmer Steam Mill at a cost of £11, 276. The new mill had a capacity of six sacks an hour (later doubled) which combined with its access to the railway gave the Chelmer Steam Mill a significant advantage over the outmoded water and windmills of the region. The entire mill was formerly powered by a large 120 HP steam engine latterly removed around 1950 (Alderton & Booker, 1980). A Christy Norris hammer mill was installed in the 1970s to produce animal feed stuff along with two electrically driven stones specifically brought in for the stone ground flour market (Benham, 1976). The boiler chimney was taken down in the late 1970s and the stone inscribed W & HM 1836 (believed to have been taken from Marriages Broomfield Mill [demolished]) was removed from the plinth.

Field Survey 2007

19/12/07

The Chelmer mill remains in the ownership of the Marriage family who built the mill in the late C19 and who successfully continue in the business of flour milling, being one of the largest millers in the eastern region. The C19 mill building still stands on site although it now forms part of a large modern milling complex comprising huge production buildings and flour silos to the east and modern steel clad reception and processing ranges adjoining to the south. An early C20 former mill managers/workers cottage remains to the SE and south of an early C20 single storey clerks office, which in common with Chelmer Mill was designed by F & W Chancellor (ERO D/F 8/630). The large C19 industrial buildings of the former Hoffman Ball Bearing Works survive to the west of Chelmer Mill and are now partly in business and partly in residential use.

The former steam mill is typical of many later C19 industrial buildings in its design, materials and fenestration. It is a large brick built 4 storey range set out over 11 bays divided internally by fire walls, rising through the roofline to present a 3-5-3 bay layout. The northern 3 bays have latterly been covered in steel cladding and as such their integrity remains unclear. The dominant feature of the building is an integral 7 storey square plan silo/water tower which rises above the roofline from the eastern half of the southern 3 bays. Capped by a hipped slated roof the tower includes a water tank in its upper stage. The steam mill is built in gault brick but extensively uses red brick for sill, impost and eaves bands, along the gable parapets and to accentuate the window arches. The gable parapets and fire break walls spring from stone kneelers and are capped with plain stone copings. The roof is gable ended and slate covered and is interrupted along its length by a gabled hoist loft projecting through the south-western roof plane and the adjacent tower, built with a fully hipped roof crowned by a gabled turret. The windows and door apertures of the visible (west facing) elevation all have red brick segmental heads comprising 3 on-edge courses while those of the tower are generally narrower or as in its upper stage flat headed.

The majority still retain their original cast-iron framed industrial windows, those in the mill having 5x5 lights and a small central ventilating hopper and those in the tower 4x5 lights with timber-framed sashes in the upper stage. All have stone sills. Doorways with original wrought iron gantries externally connect the southern and central bays at first and third floors. For additional strength the upper two stages above a pronounced stone floor band, are built in pier and panel with external pilaster strips defining 6 narrow bays and three wider bays above. An external access gantry extends around the circumference of the tower between the two upper stages. MARRIAGE MILLERS is displayed in large letters on the south facing wall of the tower just below the roof eaves. Internal access to the building was not possible.

Current Use: Remains in use as part of the flour milling complex

Condition: Well maintained

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Med
Mill house	C20	Brick	Low
Office Range	C20	Brick	Med

ARCHAEOLOGICAL POTENTIAL

The present Chelmer Mill may still retain some original internal fixtures, fittings and spatial integrity but given the continued use of the mill it seems very unlikely that power generating apparatus and early roller mills survive, although it is plausible that the electric powered stone and hammer mills installed during the 1970s, may.

SITE SIGNIFICANCE

Chelmer Mill, the adjacent former Hoffmans Ball Bearing Works and the now redundant Marconi New Street Works form an important group of C19 and early C20 industrial buildings which represent the only significant built remains of industry in the area. In addition to group value the significance of Chelmer Mill and the adjacent Clerks Office is heightened by their association with the notable Chelmsford and London based architect Fredric Chancellor & Son. Chelmer Mill survives as the only 'working' example of a former steam mill and one of only two surviving mills in Essex, the other Langford watermill, to be built by F. Chancellor & Son.

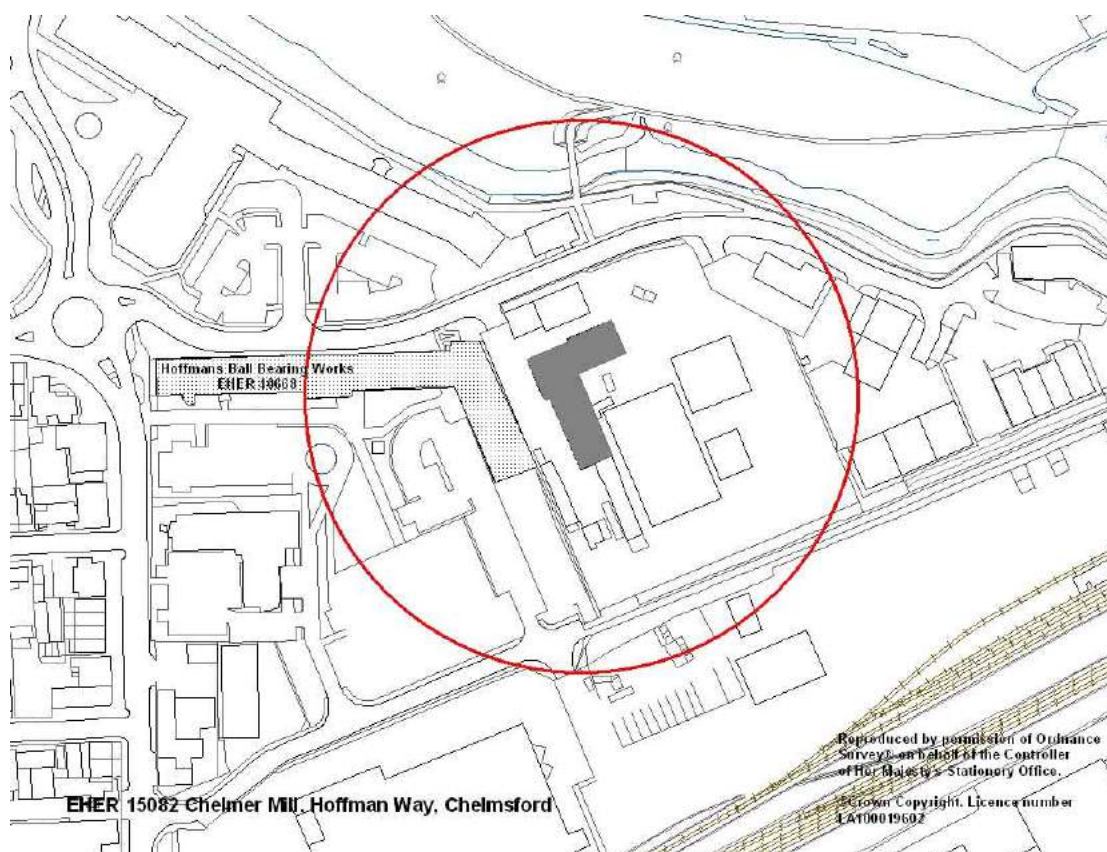
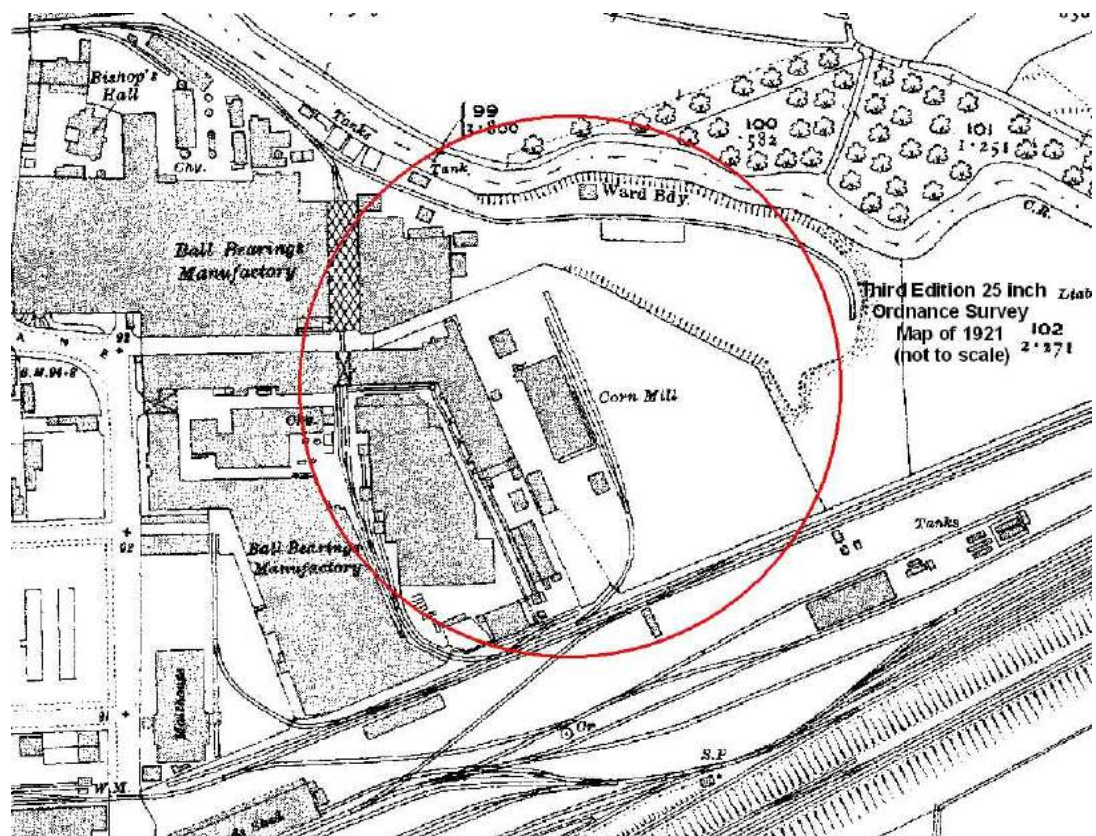
RECOMMENDED ACTION

Given the associations with Fredric Chancellor and its survival as one of only three surviving industrial buildings completed by his architectural practice, Chelmer Mill should be considered for listing and at minimum added to a list of locally important buildings.

MANAGEMENT

Chelmer Mill is currently in private ownership and in day to day use as part of a modern flour milling complex. It is accordingly well maintained. Should the opportunity arise or the building become threatened by significant alteration or demolition, an internal inspection followed by a historic building record is recommended to assess and record internal spatial configurations and survival of technologies, fixtures and fittings.

GRADING **/**





Chelmer Steam Mill looking north

SITE NAME	Croxtons Mill, Blasford Hill		
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PARISH	Little Waltham	DISTRICT	Chelmsford
NGR	TL 71140 11520	EHHER	30651
RIVER	Chelmer	EHUID	112820

CURRENT STATUS	Con. Area	No	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION	10/04/1961
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Approached by a lane from Main Road. A C18 timber-framed and weatherboarded watermill with a loft hoist on the north side. Renovated and altered in the C20. 3 storeys and loft. 4 window range on the west front and 2 window range on the north front. Casements with glazing bars (C20). Roof tiled.

JOHN BOOKERS SURVEY	23/11/1971
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When this mill was inspected in 1959 it was derelict: the machinery had been removed in 1939 and one of the few remains was the octagonal cast-iron water wheel shaft. No machinery survives today but it presents a pleasant sight from the A130 and the repairs and repainting have saved it from collapse. C18, 3 storeys with hoist loft, timber framed weatherboarded and tiled roofs. The west front has 2 and 3 window range of double hung sashes with glazing bars. The mill cottage is probably early C17 but extensively modernised.

Present Use: Storage

Condition: Better than it was in 1959

ERO SOURCES: (C/T 378/12-35), (D/F 21/1 No.63)

SITE BACKGROUND:

Croxtons or Craxtons in the C18, was in the C19 worked by John Marriage, who installed in 1852 iron machinery by John Whitmore of Wickham Market. In 1891 it was a 5 pair mill with a c.14ft waterwheel working by water without steam supplement. It remained as an unindustrialised farm mill into the 1930s but just before the outbreak of war the iron machinery was stripped out and following the war in 1945 it and the neighbouring C16 mill house were sold (Benham, 1976). It was converted to residential use by the 1970s and latterly put to use as offices for a planning consultancy (Andrew Martin Associates).

Field Survey 2008	26/03/08
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Croxtons Mill is located between Broomfield and Little Waltham and to the east of Blasford Hill. It is sited on the western bank of a north-south aligned stretch of mill leat and to the west of the natural river course of the Chelmer, utilised as the by-pass or back channel. A sluice lay to the north of the mill and drained into a pool or widening of the river scoured out at the head of the by-pass. Water levels to the mill leat are also controlled by a small weir sited upstream of the sluice which diverts excess head water directly back into the river. The mill tail rejoins the river at a short distance to the south and just beyond the crossing of a former river ford. The cutting of the leat has formed a small island between it and the river, onto which a concrete pill box, formerly disguised as a small cottage (EHER 10863), was constructed during c.1939-45.

Croxtons is a 3½ storey 5 bay timber framed and weatherboarded mill built onto a brick foundation. It has an unusually tall, straight pitched, plain tiled and gable ended roof, with an oversailing lucam supported on plain cast-iron brackets. The main body of the mill sits alongside and parallel with the mill leat. The waterwheel was

positioned within a wheel pit built adjacent to its northern bays and formerly enclosed within a roofed structure or wheel house (appearing on early OS editions), since removed. The brick structure of the wheel pit, the (now bricked up) opening for the water wheel axle and the groove for the shut are still clearly visible in the brickwork of the east wall. The positions of the shut and axle suggest the waterwheel, whose size can be estimated at c.14ft based on scaring in the wheel pit, was a low breast shot wheel. Whilst the sluice gate/shut was removed along with the wheel, part of the opening mechanism, comprising a single iron shaft and gear, remains in place.

All of the weatherboard is modern as are all of the windows, replaced using a standard 'Crittall style' single glazed metal framed casement. New window apertures have been inserted into the second floor and third floors while a cat slide dormer has been added to the western roof plane and a roof light to the opposing eastern roof pitch. The mills reuse as a house and latterly as an office has removed much of its original internal spaces, flights, fixtures and fittings. Floors have been sub-divided and a modern central newel stair has been inserted. In some areas the timber frame remains exposed and is primary braced. Scribe marks, possibly Baltic marks are present on some of the larger structural timbers. A French Burr mill stone has been re-used as a threshold in the main entrance. An early C17 mill cottage (EHER 30652) lies at a short distance to the north of the mill.

Present use: Office Accommodation

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Watermill	C18	Timber	Med
Mill House	C17	Timber	Med

ARCHAEOLOGICAL POTENTIAL

The mills reuse as a house and latterly as an office has significantly affected the survival of its original internal spaces, its technology and fixtures and fittings.

SITE SIGNIFICANCE

One of a number of C18 timber framed country mills that were renovated and updated in the C19 but had fallen into dereliction by the War. Lacking unsympathetic accretions Croxtons mill still makes an important contribution to the historic/architectural character of the area and particularly the setting along the River Chelmer.

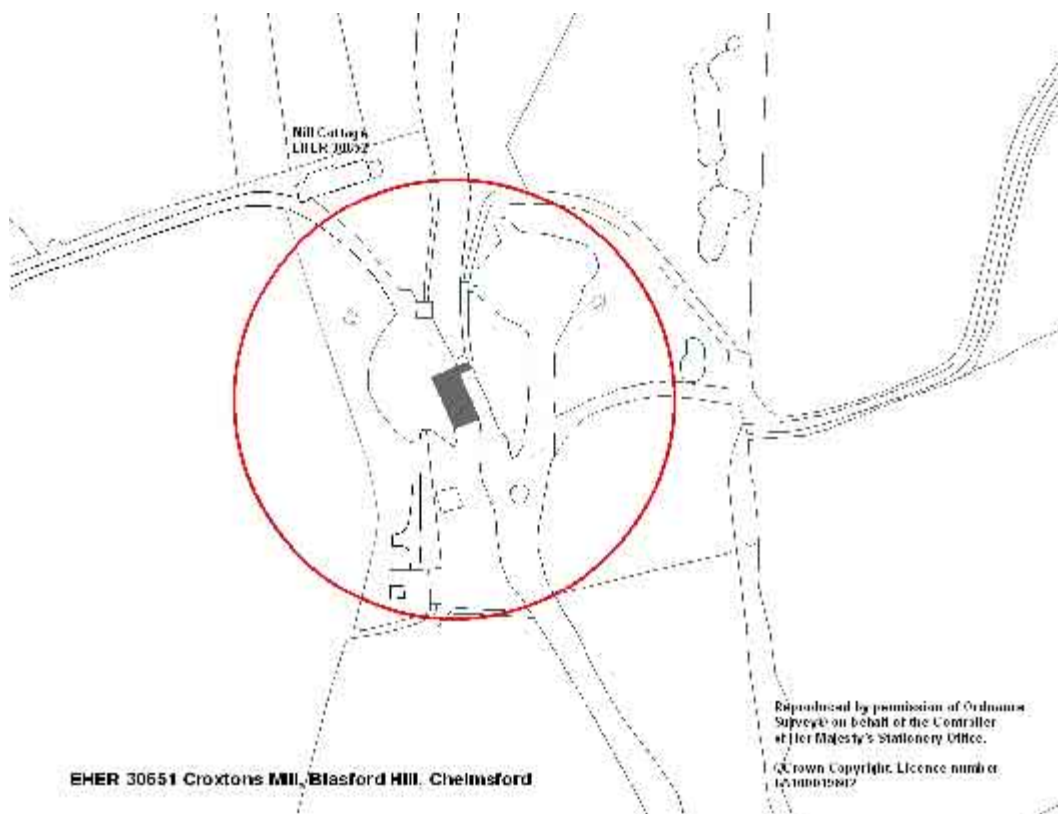
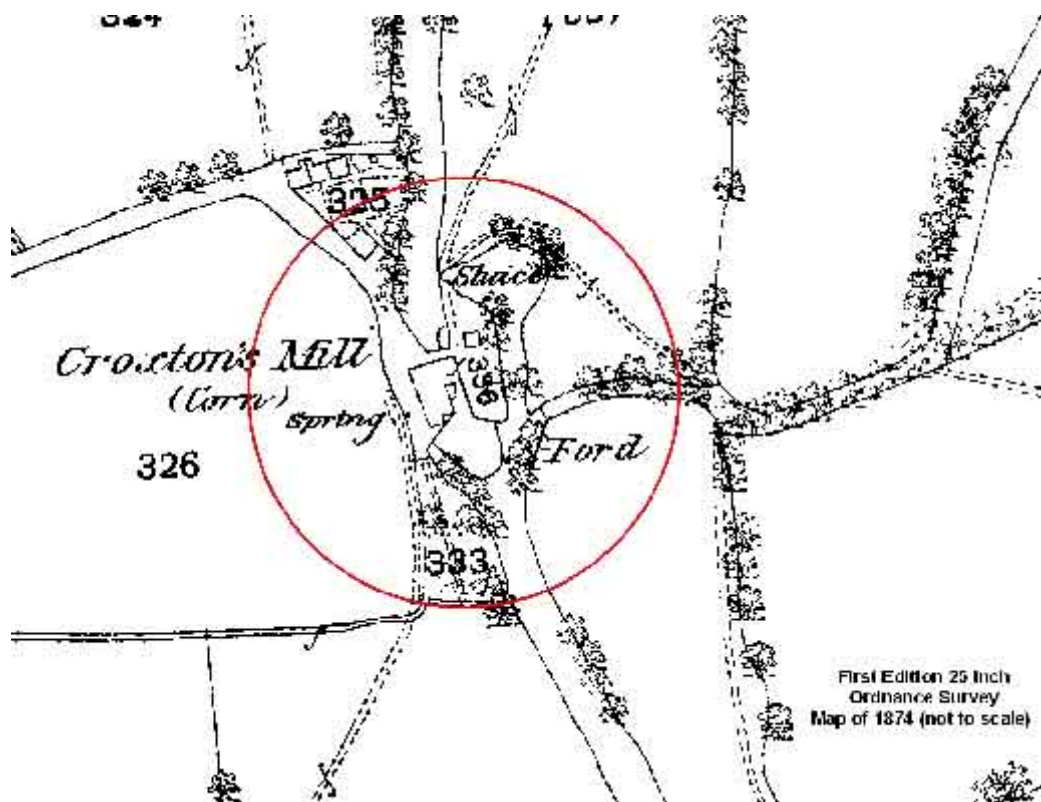
RECOMMENDED ACTION

Maintain present Grade II listing

MANAGEMENT

Croxtons Mill is in use as office accommodation and presently well maintained. A detailed historic building survey at RCHME level 3 should be recommended if the mill building is threatened by major works or demolition.

GRADING **





Croxtons Mill looking south-east

SITE NAME East Hanningford Steam Mill, The Tye, East Hanningfield			
PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 77033 01132	EHHER	40763
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed NL	EBAR No

SITE BACKGROUND:

Late C19 4 storey brick mill with hoist loft and corrugated iron roof. Recently used to grind fertilisers and now a springs factory (Alderton & Booker,1980)

Field Survey 2008

26/03/08

The former steam mill in East Hanningford is set back from and to the west of the main thoroughfare (The Tye) through the village. It originally formed part of a small complex of industrial/farm buildings that appear on the second edition OS of c.1897 and along with the Mill House is the only building from that period to survive. Its rather unusual alignment, at odds with the road appears to have been determined by the confines of the site boundaries and today its setting looks rather incongruous with the modern houses that surround the old mill on three sides. The new houses were built during the mid 1990s and at the same time when the mill was converted from a semi-derelict state for use as offices by the present incumbents Robert Hutson Architects.

It is a 3½ storey 3 bay brick built and slate roofed steam mill with gable ends to the NE and SW, a central lucam to the front and a modern stair tower, incorporating the characteristics of a lucam, to the rear. The brickwork is laid in an irregular bond resembling Flemish Bond and uses a dark red brick interrupted by yellow brick string courses for the façade and a paler red brick for the remainder of the building. The string courses are irregularly spaced but coincide with the window sills on all three levels and the door sills of the two loading doors. This decorative brick treatment was extended to the segmental window and door arches which are turned in two single courses of yellow and red brick on a three brick rise. A departure from this treatment is present in the two loading doors which are flat headed and constructed using a lintel. The roof eaves have an unusually wide overhang supported on simple timber brackets. The gabled lucam sits centrally within the roof, straddling the eaves and cantilevered from the third floor. It has been reclad in modern weatherboard, no longer retains a sack trap and is situated directly above loading doors at first and second floors. The windows are modern replicas of a traditional horned top hung sash window of six lights. Two fully glazed doors have been used in the two front ground floor entrances. Internally the original floor structures were replaced with a steel frame when the mill was converted to office use. No evidence of the engine/boiler house or associated structures survives although the C19 mill house lies adjacent to the north-east.

Present Use: Office Accommodation

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Med
Mill house	C19	Brick	Med-Low

ARCHAEOLOGICAL POTENTIAL

Due to the extent of internal alterations associated with the mills conversion to office use, survival of internal fixtures, fittings and technology is very unlikely.

SITE SIGNIFICANCE

Good example of a small late C19 rural steam mill, although extensively altered internally and now divorced from its original context and setting through unsympathetic redevelopment. The mill still positively contributes to East Hanningfield Conservation Area and to the historic character and the street scene along Tye Road.

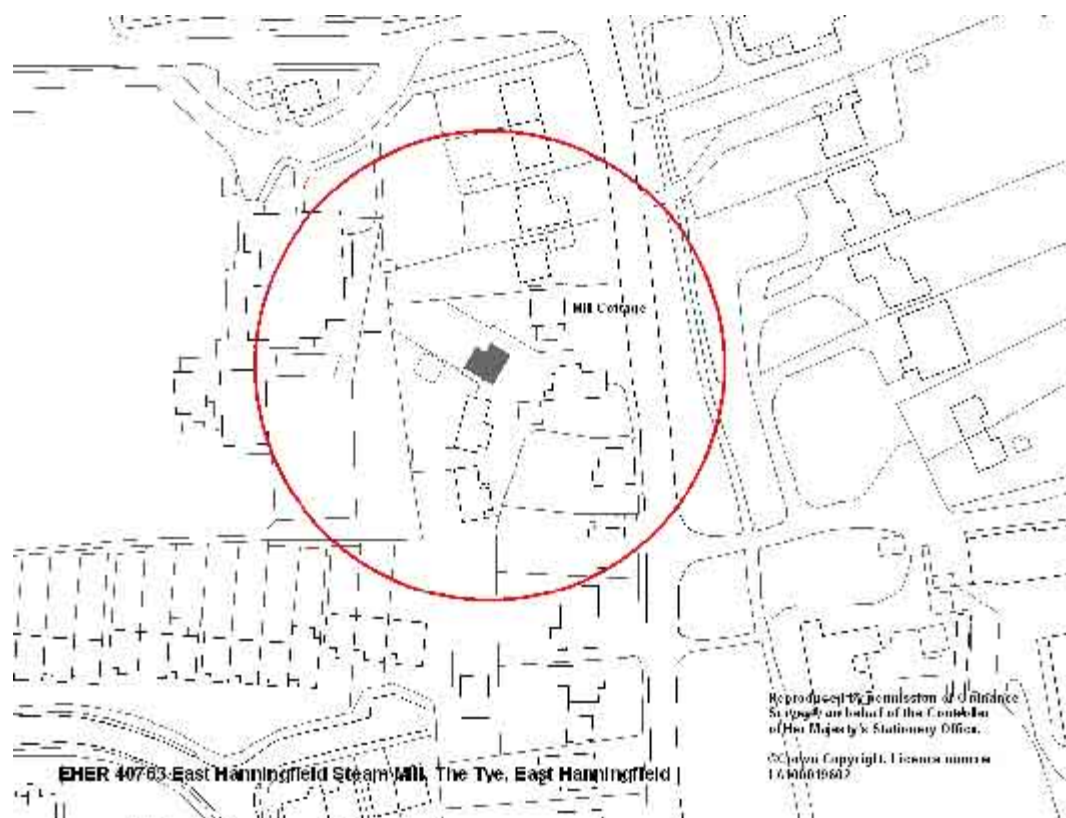
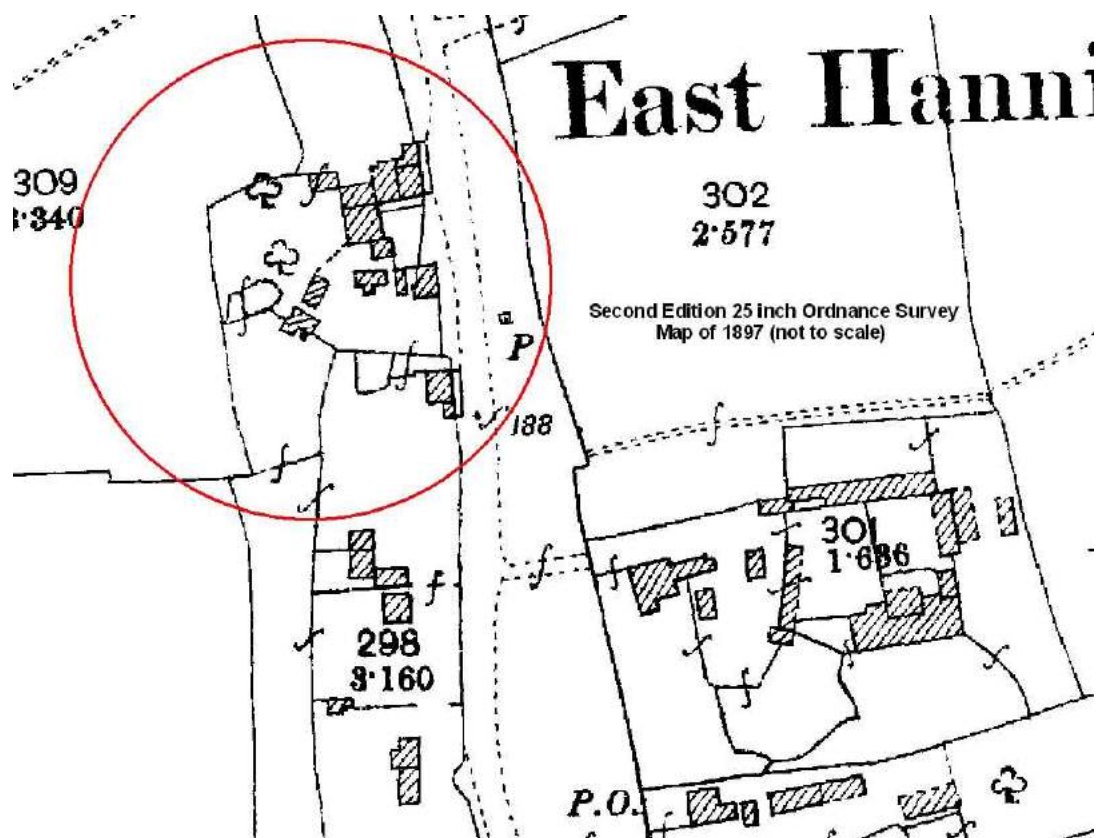
RECOMMENDED ACTION

Due to the levels of its conversion and particularly the loss of its internal integrity, it seems unlikely Hanningford Steam Mill would meet the criteria for listed building designation. Despite this the mill enjoys some protection through its inclusion within the East Hanningfield Conservation Area. While this status should be maintained, it should also be included on a local list of historic buildings and recognised within Local Development Documents.

MANAGEMENT

East Hanningfield Mill is in use as office accommodation and presently well maintained. A detailed historic building survey at RCHME level 3 should be recommended if the mill is threatened by major works or demolition.

GRADING */**





East Hanningfield Steam Mill looking west

SITE NAME	The Old Silk Mill, Hall Street		
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PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 71004 06304	HER	15083
RIVER	NA	EHUID	352506

CURRENT STATUS	Con. Area	Yes	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

06/02/1974

Built in 1898, the first purpose built radio factory in the world. Of gault brick with parapetted south facade having Tuscan pilasters and partly stuccoed entablature with brick dentil course over radiused corner. Brick plinth. Two-storeys with metal industrial type windows having glazing bars and segmental brick arches. Roof clad with slate, plan roughly square with one curved corner. Plaque on the east wall commemorates Marconi's first factory.

SITE BACKGROUND:

19/12/2007

Dating from 1858, the Hall Street works is a former silk mill occupying a corner site with a south front to Hall Street and an eastern long elevation set back from Mildmay Road. A contemporary mill house or managers house (Alfred Cottage) stands immediately to the west. The mill building was extended during the later C19 with the addition of an office range to the east front. Until 1893 the mill was operated by Samuel Courtauld & Co. initially for silk throwing and latterly for crape manufacture (Cocroft & Menuge 2001). From 1893 to 1899 the mill was acquired by W.G. Wenley & Sons and used as a furniture warehouse boasting over 130,000 cubic ft of storage space (Alderton & Booker 1980). A plaque cut into the façade of the former mill commemorates Wenleys purchase of the building in 1893. In 1899 the mill was purchased by Guglielmo Marconi's Wireless and Signal Co. Ltd and converted for use in the development and manufacture of radios until 1912 (when New Street opened). It is presently used as offices by the Essex and Suffolk Water Co.

Field Survey 2007

19/12/07

The only buildings of any age to survive on the old Marconi Hall Street site are the former mill and the mill house. Ancillary buildings to the north and west have been demolished and the western side in particular redeveloped with the addition of modern office ranges for Essex and Suffolk Water. The mill comprises two parallel twelve bay gable ended two storey ranges, with a four bay front and a slate covered double pile hipped roof. It is constructed in pier and panel with external pilasters in yellow/pink stock bricks laid in English bond. Giant pilasters with plain brick capitals divide the bays on the south front and are paired at each angle. There is a plain parapet and entablature to façade. A later office addition extends eastward from the SE angle and is two storey, flat roofed with a rounded SE corner. Its use of pier and panel is in keeping with the main building, but the first floor is at a lower level and brick cogging, not used in the main building, is present along the eaves. Large industrial iron framed windows with a central pivoting hopper are set beneath rough brick segmental heads and onto stone sills throughout the building. A modern plaque on the east wall of the former mill commemorates the Worlds first radio factory.

Alfred Cottage is a three bay two storey double fronted cottage built in yellow brick with a hipped slate covered roof. It has a central front door set within a rusticated and keyed stucco surround and a plain entablature. The sash windows of the ground floor also have stucco surrounds although those of the first floor have gauged brick flat arch heads. The sashes at ground floor (front) are original while those above are modern replacements. Glazed links connect the house (now offices) to the former

mill (also offices) and to a modern office block to the west.

ARCHAEOLOGICAL POTENTIAL

No milling, fixtures and fittings or technology associated with its original or subsequent phases of use survive.

SITE SIGNIFICANCE

Due to its reuse the former mill retains little in the way of important technology or structures and is only slightly significant in terms of a silk mill. However the building maintains relations with two of the counties most prominent industrialists, i.e. Courtauld and Marconi and notably survives as the Worlds first radio factory.

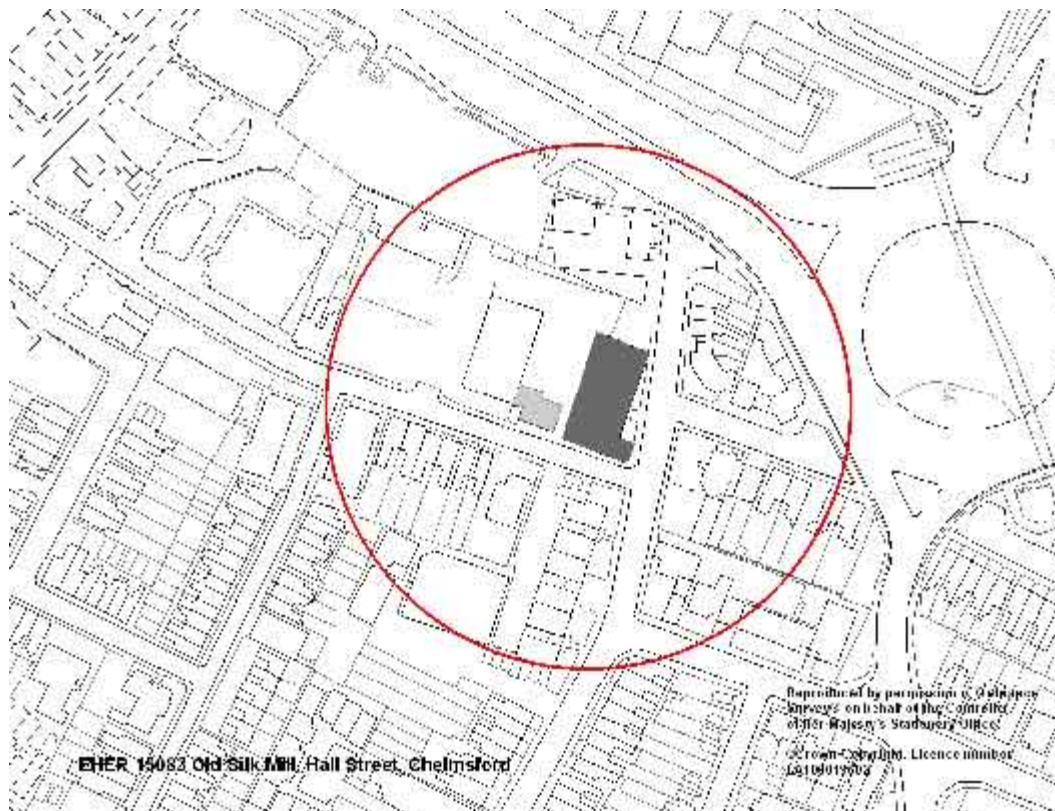
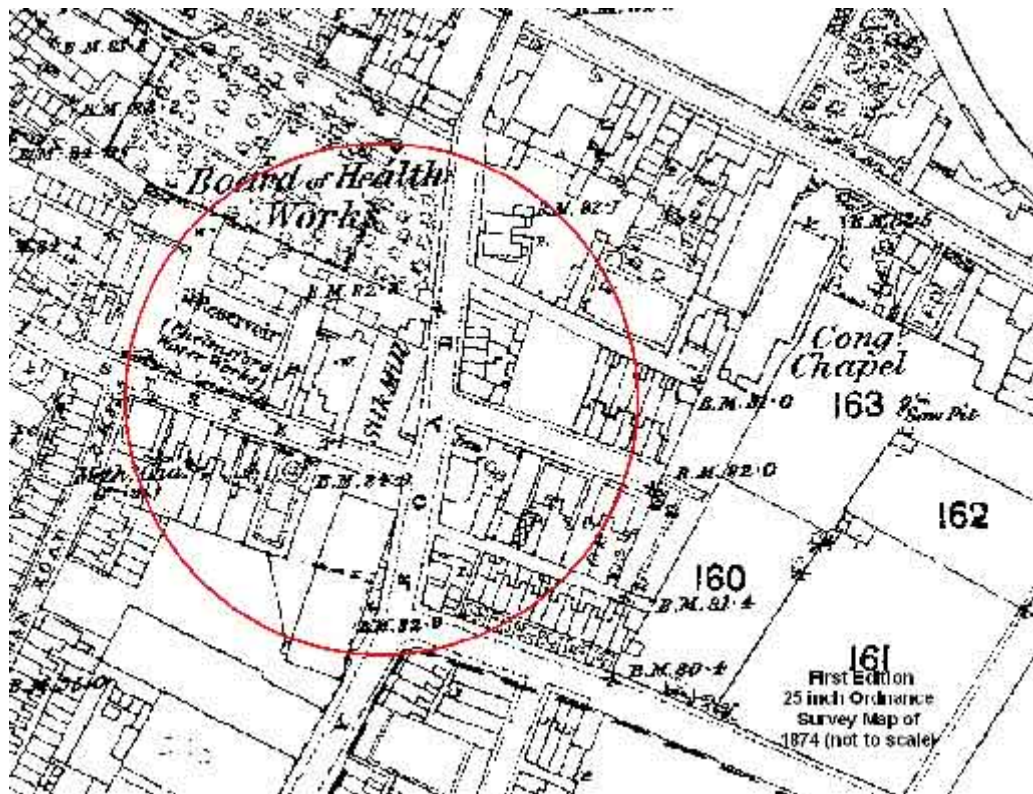
RECOMMENDED ACTION

Maintain listed and conservation area status

MANAGEMENT

Hall Street Mill is presently in use as office accommodation and accordingly well maintained. A detailed historic building survey at RCHME level 3 should be recommended if the mill building is threatened by major works or demolition.

GRADING **





Old Silk Mill (Marconi) looking north-west

SITE NAME Moulsham Mill, Parkway			
PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 71498 06180	EH	15084
RIVER	Chelmer	EHUID	352564
CURRENT STATUS	Con. Area Yes	Listed Grade II	EBARR No

STATUTORY LIST DESCRIPTION

13/11/1969

Late C18 water mill. Timber framed and weatherboarded on brick footings 5 ft high. Of 4-storeys with attics in a gabled roof and jettied central sack hoist loft. Windows in pairs of 9-pane pivot sashes. Roof clad in slate with eaves on paired modillions. Plan, rectangular with stock brick range built at rear during the late C19. Inside on the ground floor there is a central row of 9" x 9" Samson posts supporting deep softwood joists. No water power or machinery survives.

JOHN BOOKERS SURVEY

The mill, a most well known Chelmsford feature, is basically 2 adjoining mills each of 5 floors. The earlier dates from c.1800, is weather boarded on a brick base, the later about 1890 and entirely of brick. Between the mill house and the mill there seems to have been an earlier mill house perhaps C16. The mill was virtually stripped of machinery between 1959 and 1969. At the former date there was a wheel of four rings cast in halves and about 30 elm paddles, the whole carried on a square cast-iron shaft and housed in a special wheelhouse. The first floor had 2 pairs of French Burr stones and the 3rd floor, rolling and cleaning machinery. Two millstones are retained for stoneground wheatmeal but they are worked by electricity. Some iron columns with bridgetrees remain and a few mill stones are scattered here and there around the mill. Three iron columns on the 2nd floor are marked 'Whitmore and Binyon'. The later part of the mill was placed to accommodate barges using the Chelmer Navigation.

Present Use: Provender milling

Condition: slightly dilapidated

ERO SOURCES: (D/DU 480/1), (D/DGe T 6/6, 6/7), (D/DOp B 12/1), (B 3026), (D/DGe T 148), (D/DGe E 11)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

The Bishop of London had one mill in Chelmsford in 1086 (Domesday) although the first documented reference specifically to a Moulsham Mill is in 1382. In 1534 the Abbot of Westminster leased Moulsham to John Longe for 18 years and after the dissolution the manor of Moulsham and Bishops Hall were acquired by Thomas Mildmay, auditor to Henry VIII. Though Walker's map of 1591 clearly shows the mill on the River Can, it must have also controlled the flow of the Chelmer as Mildmay was accused in 1547 of causing flooding at Springfield mill by obstructing the out-flow. Moulsham was leased by the Mildmays to the Strutts from 1667 to 1767 (who went on to purchase Springfield Mill in 1692) and were responsible for the rebuilding of the mill in the early C18. It was rebuilt again around 1780 and in 1792 was leased by Dame Anne Mildmay to Abraham Bullen. By 1805 Robert Eden, a nephew of Bullen, was selling coal from the mill and in 1823 Lowe and Thorn used the site as a base for their coal merchants business. In 1839 Joseph Marriage junior took over the mill and within a few years built a brick steam mill working three pairs of stones. He occupied the site until the middle of the century and was followed by William and Henry Marriage, millers and coal merchants. The steam mill was rebuilt in 1878 and

then converted to roller milling in 1891 by Henry Simon. Renovations carried out in 1891 report the presence of a beam inscribed 'John Strutt built this mill 1716', although it is unclear whether this reference refers to Moulsham or Bishops Hall Mill, another (now demolished) Chelmsford mill run by the Marriages. Fredric Chancellor (architect) submitted plans for a new sluice gate in 1887(D/F 8/254) and for a new boiler house (D/B7 Pb292) and cottages for Marriage and Sons in 1908. In 1917 a sales catalogue records a part brick part timber undershot mill with an iron wheel of 30 paddles and 10ft diameter and breast. It had also had a 10ft iron pit wheel, a similar sized spur wheel and two pairs of 4ft French Burr mill stones driven by water and a single pair by electricity (Large, 1959). The mill continued producing flour for human consumption until 1958 after which much of the machinery, apart from remnants of the stones, was removed (between 1959-1969). The river channel to the watermill was infilled in 1963 and although some grinding continued on site, all business was transferred to Marriages Chelmer Steam Mill (EHER 15082) by the early 1970s.

Field Survey 2007

7/12/07

Prior to the backfilling of the river channel to Moulsham Mill it was ideally situated at the confluence of the River Can and the River Chelmer. The river channel of the Can widened immediately to the east of the mill to form a mill pool and was channelled through a mill race skirting to the north of the mill and directly via a short mill tail into the Chelmer to the north. An overflow sluice was built into the northern bank of the mill pool between it and the Chelmer, although this no longer survives. The presence of a large half circular scar in the lower brickwork of the northern gable wall and a central low brick arch for the waterwheel axle confirm that the waterwheel was external to the main body of the older mill and judging by the early OS editions was probably accommodated within an adjoining wheel house. All the buildings at Moulsham Mill lie within the Chelmer & Blackwater Navigation Conservation Area and are either individually listed or listed by curtilage. These include the mill, two mill houses, an engine house and a stable range. The grade II mill (EHER 15084) in fact comprises two mills built in parallel with a late C18 timber framed and weatherboarded range to the west and a later C19 brick built steam powered roller mill to the rear (east). A single storey brick built engine house projects from the central rear bays of the later mill while a narrow 2-3 storey ?C16 former mill house lies immediately to the south and abuts a much larger grade II listed C18 red brick mill house (EHER 31573). A detached C19 stable range lies at a short distance to the east.

The timber framed and weatherboarded watermill dates to 1780 and is a 4½ storey five bay mill with a slate covered gable ended roof and a central **lucam**. The entire ground floor storey is built in C18 red brick laid in English bond while the primary braced timber frame has been re-clad, probably during the renovations of 1983, using modern softwood feather-edge weatherboard. It is probable that during the same renovations the present multi-pane pivoting windows of the façade and northern gable elevation were inserted, some into existing apertures but mainly into areas previously without fenestration. The sash windows of the ground floor may have re-used existing window apertures, the northernmost rebuilt using a concrete lintel. An original loading door remains within the southernmost bay at first floor and directly above a wide main entrance into the mill which still retains its halved and boarded door. No evidence for another loading door or doors, particularly below the lucam as is common in many mills, could be determined. The central lucam extends the entire height of the roof plane and is cantilevered out from eaves level to the front (west). It is weatherboarded, gable ended and supported on timber knees. As with the rest of the building it has also been re-clad and re-fenestrated. The eaves rest on paired modillions. A modern iron fire escape, allied with the buildings conversion to

business use has been added onto the northern gable wall and a new doorway cut through the timber framing at the junction of the two builds on the upper three floors.

Built in parallel and to the rear (east) of the earlier mill is the brick steam mill of c.1878, built over 4½ storeys and five bays. It has a slate covered gable ended roof with an oversailing lucam projecting to riverside from the northern gable elevation. Yellow stock bricks in English bond are used for the main walls while the ground floor angles and window jambs only, are dressed in red brick. The oversailing weatherboarded lucam is set onto a pair of decorative cast-iron brackets and lies above a tier of double width taking-in doors built into the first to third floors of the northern gable wall. They still retain their double leaf doors, glazed lights and safety straps. The windows are all original industrial cast-iron multi-pane casements, each with a central pivoting hopper, set into segmental arched apertures with rough brick heads and stone sills. The windows vary in dimension but generally increase in size as they rise through the building, with the smallest 3 x 6 lights at ground floor, 3½ x 6 at first floor and 4 x 6 lights on the two floors above. The windows of the upper storey unlike those below have cambered stone lintels partially obscured by the eaves soffit. A later engine and boiler house built to designs by F. Chancellor & Son was added to the rear elevation in 1908. This addition is ably demonstrated by the reduction of a second floor window to accommodate the roof of the engine house and a very slight change in brick and fenestration, although the architecture still closely mirrors the treatment of the mill. Yellow stocks are used for the walls, the angles and windows jambs are dressed in red brick and the slate roof is hipped and uses clay ridge tiles. Internally the entire space is open to the rafters. No power generating technology remains.

The mill was converted into and is still in use as a craft and business centre. As such very few internal features and no technological apparatus remain. The internal dividing wall between the two builds has generally been removed and ascent through both mills is via a common modern newel staircase. Many of the heavy C19 cast iron columns remain in the later mill while a number of columns have been added to strengthen the timber frame below the floor joists at ground and first floors, the latter columns specifically designed to carry line shafting. Although access to the upper floors was not available it seems likely the loss of original features and technology encountered across the lower floors, continues.

An earlier mill house thought to date from the C16 is situated between the mill and its later C18 replacement. The earlier mill house is a narrow single bay width part brick 3 storey range with a gable ended plain tile roof to the front (west) and a lower 2½ storey range with a half hipped roof to the rear. The upper storey of the front range is weatherboarded while the first floor is rendered. The windows in the west facing elevation include C18 vertical sashes of 4 x 3 and 4 x 4 lights without horns. It appears that the older mill house was incorporated into the C18 mill house and was possibly re-used as a service or utility wing adjoining to the rear. The (later) listed mill house (EHER 31573) is rectangular plan, red brick in Flemish bond and built over three storeys and five bays. All the windows are vertical sashes and are C19 replacements with horns. Central to the façade is the front door in a bay of 4½" projection, pedimented and dentilled with two Corinthian pilasters and a semi-circular softwood fanlight. There is a parapet on front and sides and a stucco string course at first floor sill level. The roofs are hipped and peg-tiled with two rear slope chimney stacks. A single storey flat roofed bay with a canted end extends from the western end wall.

At a short distance to the west of the mill lies a C19 brick built gable ended former stable range enlarged by the way of a modern parallel range built onto its rear

(northern) long wall. It is single storey with attics and built over 10 bays with a plain tile roof interrupted along the eaves (southern roof only) by a pair of symmetrically spaced loading/pitching doors. The walls in common with the steam mill are built in yellow stocks in English bond. The eastern 4-5 bays are at odds with the rest of the range, having additional pilaster strips, suggesting it may have been strengthened for use as a granary. Original openings have segmental brick arch heads although all the present windows are modern. A blocked wagon door sized opening can be seen in the western gable wall and a similar but slightly smaller blocking is present in the opposite gable end wall.

Present Use: Craft and Business Centre

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Timber	High
Steam Mill	C19	Brick	High
Engine House	C19	Brick	High-Med
Mill House	Pre C18	Timber/Brick	High-Med
Mill House	C18	Brick	High
Stable Block	C19	Brick	Med

ARCHAEOLOGICAL POTENTIAL

The mills reuse for commercial use has significantly impacted upon the survival of its original internal spaces, technology, fixtures and fittings. The buildings have not however been subjected to extensive unsympathetic alterations/enlargements and remain the last mill buildings on what is an ancient milling site.

SITE SIGNIFICANCE

Interesting group of mill buildings and associated structures which ably demonstrate the development of the site and the move toward steam milling. Its associations with the Marriage family, group value with its two mill houses, stable block and engine house built by the local architect Fredric Chancellor and its contribution toward the historic/architectural character of an area sadly lacking similar structures, are all factors in its significance.

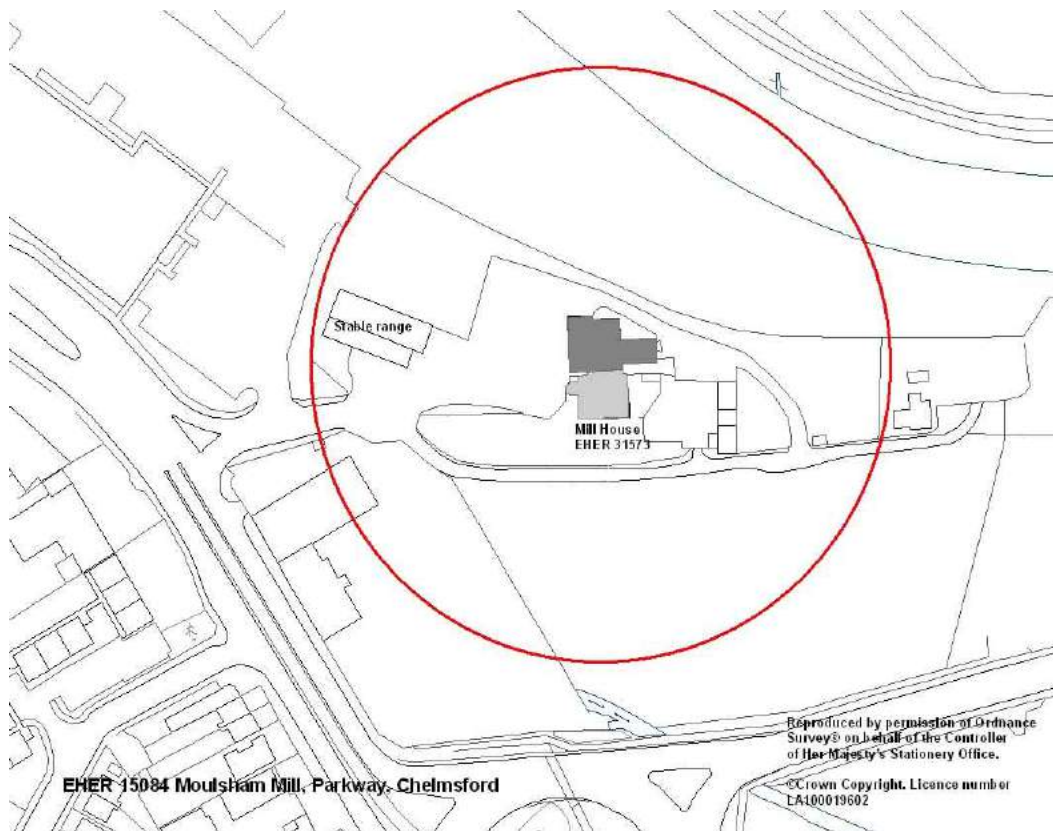
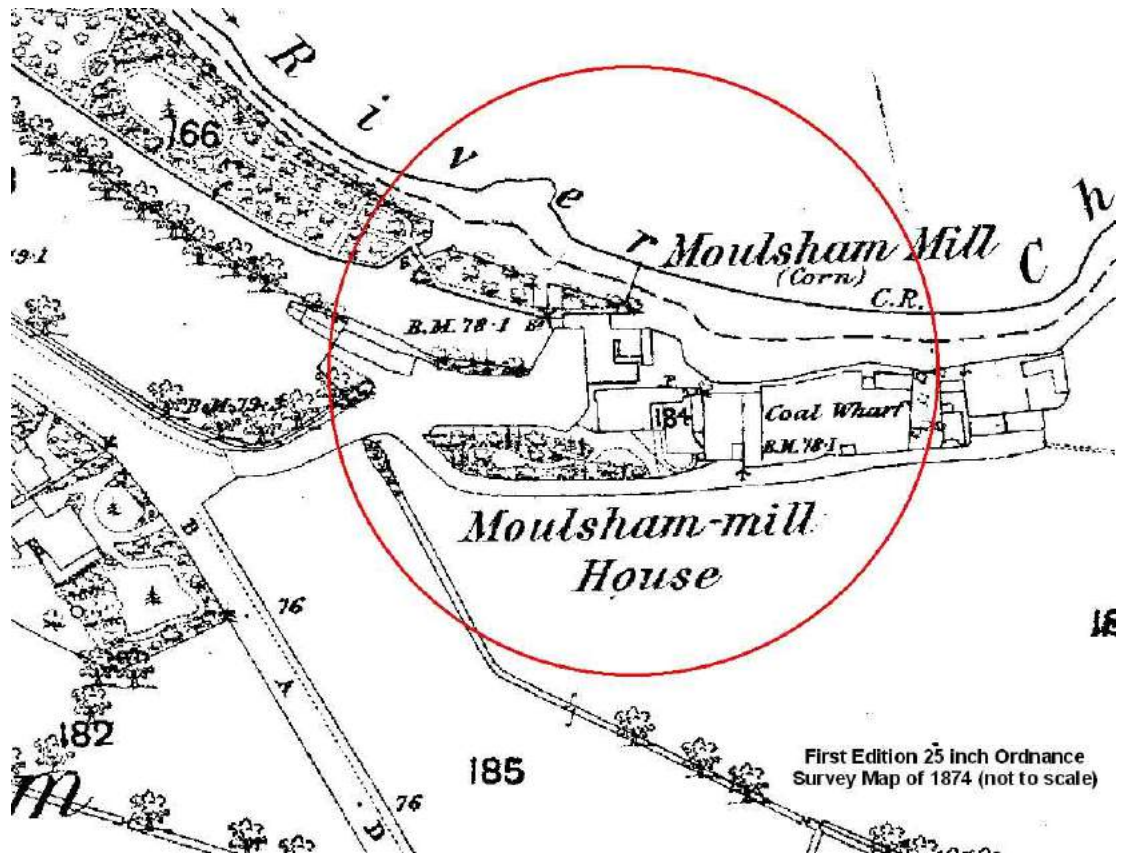
RECOMMENDED ACTION

Maintain listed building status. The comprehensive nature of its reuse precludes any recommendation for upgrading the current designation. Associated unlisted buildings do not merit individual listing but are of historic interest and share group value and listing by curtilage to the mill and mill house.

MANAGEMENT

Moulsham Mill is presently in use as a commercial enterprise and sub let as retail accommodation for many small craft businesses. A detailed historic building survey at RCHME level 3 should be recommended if the mill or associated structures are threatened by major works. To maintain the integrity of the site, significant demolition of the mill and/or associated buildings should be discouraged.

GRADING **/**



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Moulsham Mill looking south-east



Undated Watercolour of Moulsham Mill

SITE NAME Old (Hylands) Mill, Off Bekeswell Lane

PARISH Chelmsford **DISTRICT** Chelmsford

NGR TL 6905 0335 **EHER** 31579
RIVER Wid **EHUID** 352569

CURRENT STATUS **Con. Area** No **Listed Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

Small C18 mill originally housed in red brick, square plan; one storey. Soon after a timber framed wing extended this mill on the land-side. Earlier roof fly-hipped with central louvre, later roof ridged with one hipped end. Inside early C18 king post trusses, with raking-struts. All slate clad. The power was supplied by turbine, but no machinery survives.

SITE BACKGROUND:

It is likely that Hylands mill dates to the last quarter of the C19 as it is neither mentioned in a sale catalogue of 1854 detailing the disposal of properties belonging to the Hylands Hall Estate nor does it appear on the 1st edition OS map of 1874. It does appear on the 2nd edition OS map of 1897 and is mentioned in a sale catalogue of 1920 which describes it as a brick built and slated water powered corn mill comprising one mill room containing a pair of 3ft stones, a disintegrator, crusher, cakebreaker, grindstone, three wooden bins, a double bin, large granary and a turbine house with a 2½ horse-power turbine. At this date it was let to T.D Weeks for £12 p.a. When it ceased operating as a mill is unclear although by the 1950s it was used as a kennels for dog breeding and has latterly been converted to residential use. The mill formerly worked a turbine fed by an inlet sited upstream of a guillotine dam. This layout was reminiscent of and can in principle be compared to the early vertical or Norse paddle wheels (Benham, 1976).

Field Survey 2008

01/02/08

Hylands Old Mill is situated in a rather isolated location on the southern side of Chelmsford and along a minor carriageway (Bekeswell Lane) radiating off the east side of the A414 London Road. The mill is located at a short distance to the south of Bekeswell Lane and along the eastern bank of the River Wid. No evidence of a by-pass channel can be recognised on the ground, but a channel is present to the east of the mill on historic mapping. This channel still survives to the north of Bekeswell Road but has now been diverted or blocked at its junction with the road.

At some point after the mid 1970s, Hylands Old Mill was converted from a dog kennel into a dwelling, as it remains today. It is likely that all the internal machinery was removed during its initial reuse, although the insertion of new fenestration, roof re-profiling and elongation of the eastern range can be associated with its subsequent residential use. The latter works have been carried out since 2000. Hylands survives as a small single storey part brick built and part timber-framed and weatherboarded mill comprising two adjoining ranges. A brick built N-S mill lies nearest and parallel to the river while a perpendicular timber framed former granary extends to the east. The brick walls of the western former mill range are whitewashed so as not to contrast with the white painted modern weatherboard of the adjoining range. The roofs are slated and half hipped and retain a small gabled hoist loft at their ridgeline junction. The casement windows and most of the apertures in the timber framed range are recent insertions although segmental brick arches are still present in the western

range. Blocked bearing boxes visible in the riverside long wall demonstrate the entry of line shafting or another form of auxiliary drive to the mill stones. Although access into the entire building was not possible, large softwood king post trusses typical of the C19 are still present in the kitchen (brick range) area. A guillotine dam by Christy & Norris, Chelmsford, still partly survives upstream of the mill, while a former runner millstone by Corcoran, London lies within the garden.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C19	Timber/Brick	Med
Guillotine dam/sluiice	C19	Iron	Low-med

ARCHAEOLOGICAL POTENTIAL

The mills reuse as a kennel and latterly a house has significantly impacted upon the survival of its original internal spaces, technology, fixtures and fittings. As Hylands was built with a turbine from the outset and not as is common, adapted from a waterwheel, the watercourse and operation of the turbine merit study.

SITE SIGNIFICANCE

A late and unusually small single storey watermill mill built by the Hylands House Estate. The mill is not an exceptional example of a C19 watermill and one which today would not meet the criteria for listed building status.

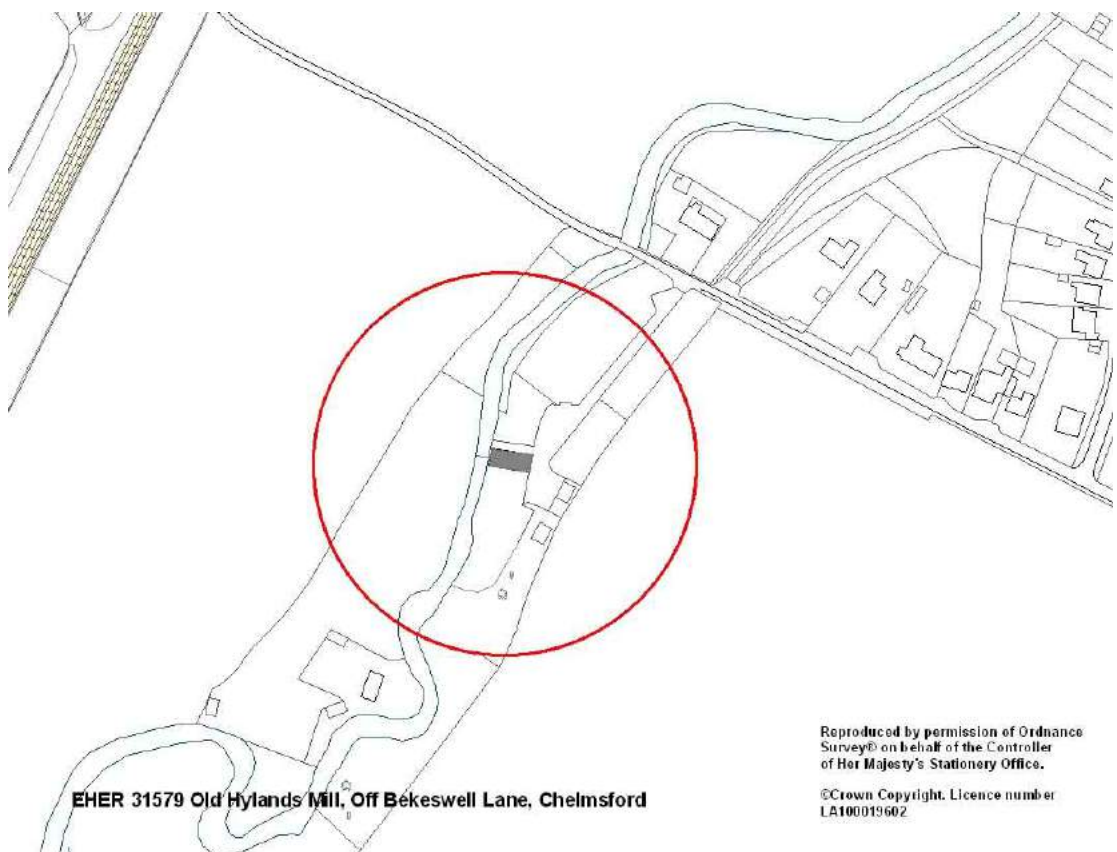
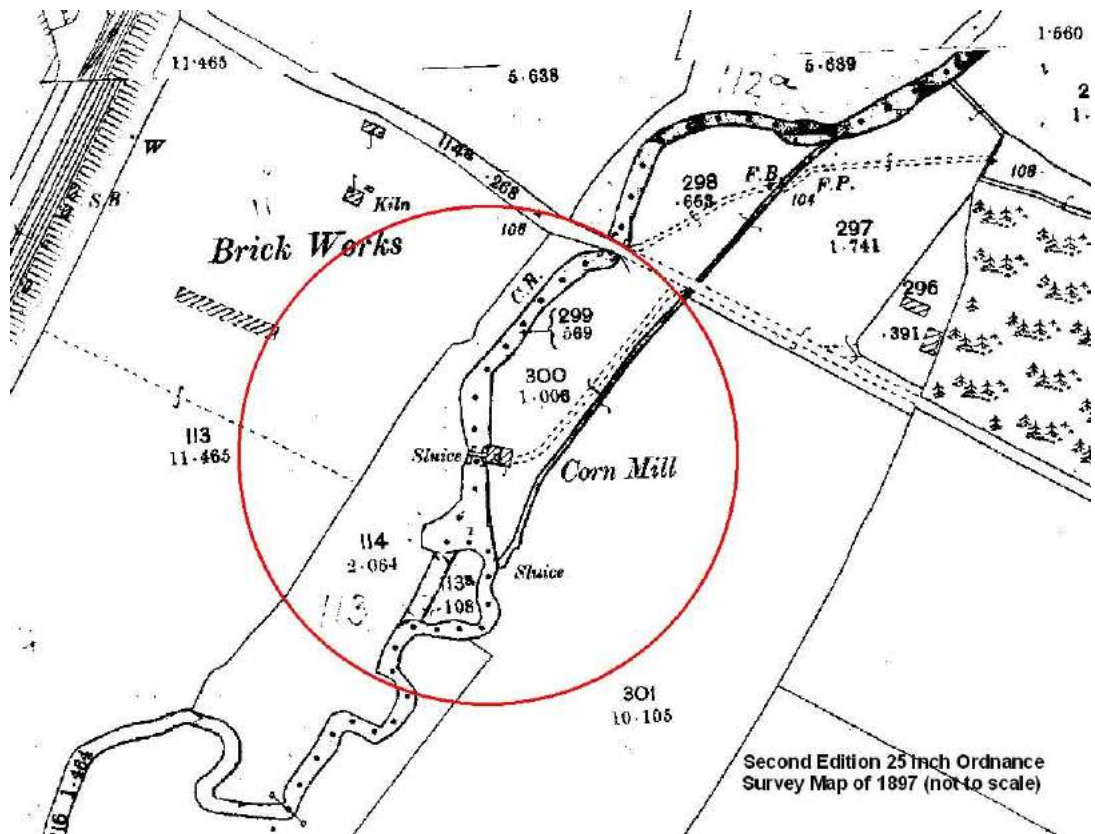
RECOMMENDED ACTION

In order to protect the site from future redevelopment, the present designation should remain, despite its inaccurate list description.

MANAGEMENT

Hylands Mill is in use as a dwelling and is presently well maintained. A detailed historic building survey and analysis of the wheel pit and water management systems should be recommended if the mill is threatened by major works or demolition.

GRADING */**



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Old Hylands Mill looking north-west

SITE NAME Meesons Steam Mill, Hawk Hill, Battlesbridge			
PARISH	Rettenden	DISTRICT	Chelmsford
NGR	TQ 782 947	EH	40671
RIVER	Crouch	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed	Grade NL EBAR No

JOHN BOOKERS SURVEY

28/10/1971

A rather gaunt 4 storey brick and weatherboarded mill with lucam projecting over the wharf. Long disassociated with milling but nevertheless of some interest. This building was first of 2 mills built east of the bridge and can be dated between 1878-1882 and attributed to William Merrifield Meeson; the Meeson family owned the wharf as well as the limekilns previously on site. It is a pity this mill is not given the same amount of attention as the larger rebuilt Provender mill on the other side of the river Crouch. It was probably not equipped with roller mills at the beginning but was nevertheless one of the earlier steam mills built specifically for milling grain imported by barge.

Present Use: Disused

Condition: Decaying

FIELD SURVEY 2007

16/02/07

Large 4½ storey former steam mill built perpendicular to the river, lying to the east of Battlesbridge and adjacent to its own wharf along the north bank of the river Crouch. Presently used as antiques centre, the lower storeys of the mill are brick-built and the upper storeys and loft are timber framed and clad in weatherboard. A lucam projects out over the river and wharf from the southern roof gable while a full height weatherboarded hoist/elevator bay (now stairwell) projects from the corresponding bay in the northern gable end. The present building has been extensively rebuilt and added to during the last century. The earliest phase of the mill (c.1878-1882) is characterised by the yellow stock brick and arched brick window openings seen in the lower two storeys of the central (axial) bays of the mill. The windows of the timber-framed upper floors of the central bays are typically small 8 pane casements with glazing bars. The mill was enlarged or rebuilt during the early to mid C20 (following a fire in 1932?) with the addition of a three storey extension which wraps around the northern end of the building and along both the eastern and western long elevations. This later work is built using Fletton bricks in English bond and is without window openings. A two storey yellow stock brick range to the east, which displays similar architectural characteristics as the earlier build, appears to have been incorporated or re-incorporated into the mill following the enlargement and a modern brick entrance range has been added to the north. Survival of brick floors and cast-iron columns supporting the first floor binding joists are patchy. Although the main structural timber joists remain the original first and second floor common floor joists have been replaced by a modern concrete beam and ceramic block floor. Above the second storey the floor structures revert to timber although much of the original structures, apart from some Baltic pine binding joists, have been replaced. The two upper floors are within the main roof structure. To enable unhindered access through the centre of the 4th floor it was built using queen post trusses braced with outer raking struts. The attic storey, within the upper roof structure, comprised a simple 'A' frame braced at the apex with a bolted collar. A cantilevered joist built into the top of the northern projecting bay indicates the location of a former hoist mechanism. The buildings ultimate commercial reuse has removed all of its milling technology.

Present Use: Commercial
Condition: Good-Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam roller mill (corn)	Late C19	Brick /Timber	Med-Low
Wharf	Late C19	Brick/Concrete	Low-Med

ARCHAEOLOGICAL POTENTIAL

The mills commercial reuse, its rebuilding and alterations have significantly impacted upon the survival of its original internal spaces, technology, fixtures and fittings.

SITE SIGNIFICANCE

Rettenden Mill is another example of a steam mill which retains very little in terms of its historic and technological significance. It does share group value with the remains of the Olde Tide Mill (EHER 35127) and preserves the industrial character of the quayside around Battlesbridge.

RECOMMENDED ACTION

Due to the levels of alteration and removal of technologies it seems unlikely Rettenden steam mill would meet the criteria for listed building designation. It does however benefit from its inclusion within the Battlesbridge Conservation Area and should be added to a local list of historic unlisted buildings. Its conservation area status should be maintained.

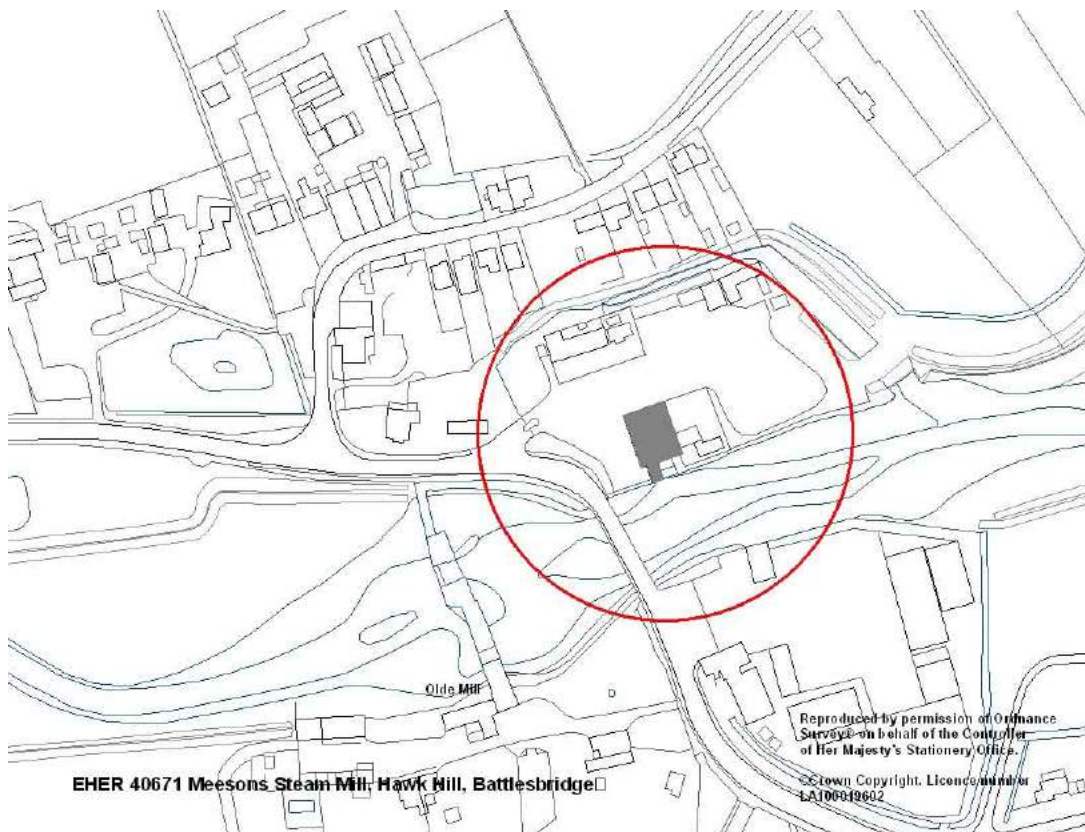
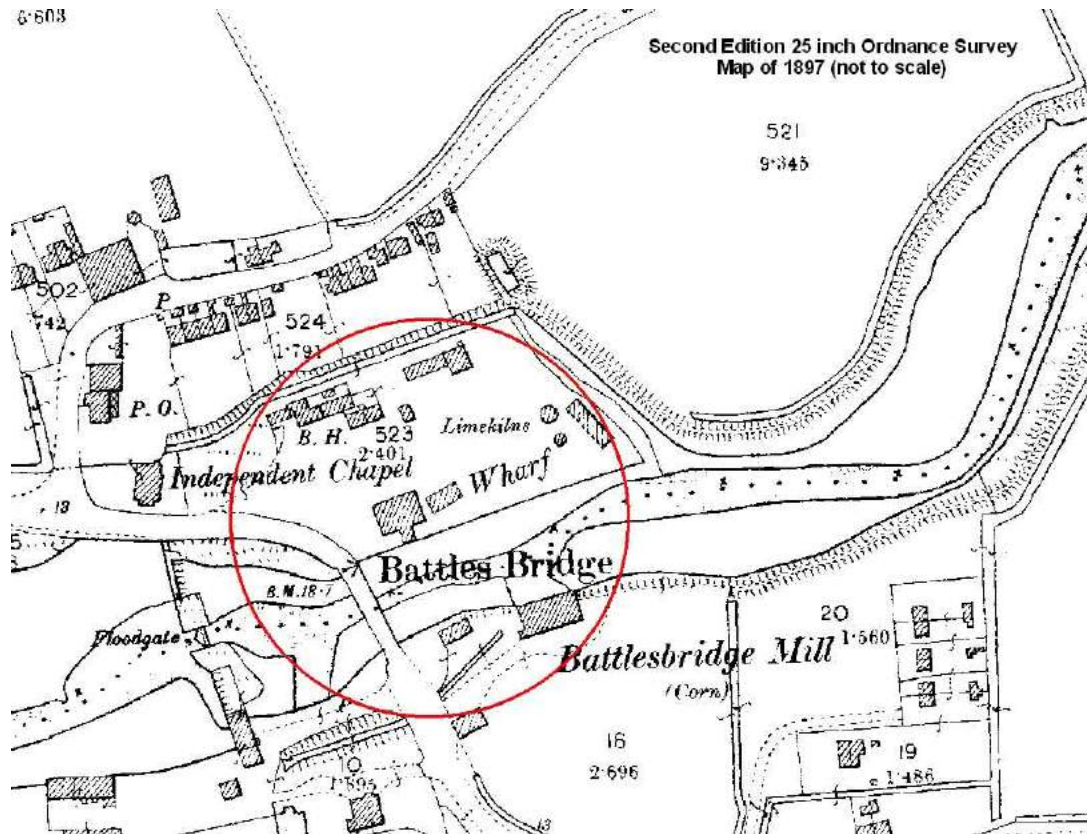
MANAGEMENT

Rettenden Mill is presently in commercial/retail use and is accordingly well maintained. A detailed historic building survey at RCHME level 3 should be recommended if the mill building is threatened by major works or demolition. The mill site should also be recognised as a local historically important site and included in future Local Development Documents.

GRADING */**

6-603

Second Edition 25 inch Ordnance Survey
Map of 1897 (not to scale)



EH0040671 Meesons Steam Mill, Hawk Hill, Battlesbridge

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Meesons Steam Mill looking north

SITE NAME Springfield Mill, Victoria Road			
PARISH	Chelmsford	DISTRICT	Chelmsford
NGR	TL 71302 07050	EH	31618
RIVER	Chelmer	EHUID	352602
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

20/5/1949

C18 undershot watermill, timber framed and weather-boarded. Of 5-storeys, single long range. Front (north) elevation has 4 windows and 2 doors close to the centre, much blocked and altered. First floor, 3 sash windows and 2 doors, one central. Second floor 4 sash windows and one central door. Most windows in pairs of small paned sashes, ground floor 5 windows and 2 doors. Jettied sack-hoist (lucam), over on knees. Roof ridged gabled and slated eaves paired modillions. Plan rectangular. Inside great spur wheel with compass-arms on the up-and-down shaft of heavy oak probably C16. At rear C18 office, one storey and attic, ridged and gabled roof, peg-tiled, weather-boarded on south gable.

JOHN BOOKERS SURVEY

04/11/ 1969

Springfield Mill is late C18, timber-framed and weatherboarded, tiled, 3 storeys with a hoist loft and loading hatches on floors beneath the central lucam. The adjoining millhouse, where the antiquary John Strutt was born, is C18, of 2 storeys red and black brick. At the turn of the last century (C19) the waterwheel was replaced by a turbine. It is reported that of the original machinery there remains only the 8ft wooden spur wheel and cast iron wallower both mounted on the wooden main shaft. The turbine and pit wheel have been removed and the shaft is mounted on a concrete base.

Present Use: Largely disused

Condition: Fair

ERO SOURCES: (D/DM M160), (D/DM T 73), (C/T 378/12-35), (D/DDW B 6/10), (D/DDW B6/9)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

A mill is recorded in Domesday under Springingfelda. Springfield Mill was one of the few Chelmsford mills not run by the prodigious Marriage family. John Strutt held the lease from 1667-1692 after which it was purchased by the Strutt family whose 90 year occupation ended in 1780. Springfield was then worked from 1839-63 by Henry and Fred Hicks. At the turn of the C20 the mill was run by George Ling a seed oil cake manufacturer, followed by Alfred Brabridge, member of a prominent farming family and relation of the Smiths of Bardfield and Tilty mills. Brabridge was a professional miller who installed a forty inch turbine to run four pairs of stones. He also installed a Christy Norris 'disintegrator' mill to grind bone for fertiliser and animal feed. In 1929 the mill was leased to Cramphorns who used it as a store and for seed cleaning. The stones were scrapped in 1939, although the 8ft spur wheel, wallower, wooden shaft and a pair of stones are thought to remain. The mill stands empty but with planning permission to convert it into a furniture store (Benham 1976). Since Benham's visit in 1976 the Christy Norris sluice gate and the turbine have both been removed. The mill leat to the north flows through a culvert now running below the car park opposite and the mill is run as a public house/restaurant/hotel by Youngs Brewery. The timber upright shaft, iron wallower, clasp arm great spur wheel with

wooden cogs and the hursting remains at ground floor in what is now part of the bar area, while a single pair of millstones (Corcoran, London), without furniture, remain as a decorative feature within a first floor 'mezzanine' bar latterly created by the part removal of the first floor structure. A chain hoist and a metering device have been relocated close to the surviving stone drive.

Field Survey 2007

19/12/07

Springfield mill is a large 7 bay 3½ storey timber framed and weatherboarded mill built onto a red brick base with a modern in-line extension to the NW. It has a gable ended and slate covered roof with a central lucam supported by timber knees. The lucam is cantilevered above the eaves level and logically at the level of an internal catwalk. Paired modillions (as Moulsham Mill) are present at eaves level along the older timber frame range. Below the lucam are taking-in doors at first and second floors, both of which only retain the lower halved doors, as the upper portions have been reused as windows. A further taking-in door subjected to a similar treatment lies immediately to the west at first floor. All the windows to the roadside front are vertical sliding sashes with horns, and appear to be replicas of original joinery. They are either 4x3 or 4x4 lights. The windows are symmetrically laid out and their size and locations are relatively original with just a few new insertions. The weatherboard is modern. The sash windows of the rear elevation have received similar treatment as the front. The rear roof line is interrupted by cat slide dormers in the end bays and by a series of three modern triangular dormers within the main roof, just above eaves. The visible roof structure (internal) comprises a butt purlin with a queen post strut.

A small ?C18 gable ended 2 storey range with a plain tile roof projects to the rear of the eastern most bay. This could either be a mill office or a wheel house. A brick three storey two bay in-line extension has been added to the north-western end during the second half of the C20. It has simple rough brick heads to apertures and replica C19 sashes. A modern single storey part weatherboarded store abuts the later extension at the north-western end of the range. A modern single storey lean-to extension to the bar area wraps around the SW angle and extends approx halfway along the length of the rear elevation. Water still passes through the wheel pit and feeds a mill tail which rejoins the Chelmer c.50m south of the mill. The river to the north of the mill appears to have been considerably reworked (redirected) and widened possibly when the leat to the mill was culverted.

Adjacent to the west of the mill is the C18 grade II listed mill house (EHER 31619). It uses polychromatic brickwork with blue burnt headers laid in Flemish bond for the majority of the walls, with the façade (W front) faced in a better quality pale gault brick. The western long elevation covers five bays and is two storey with a brick parapet partly concealing a plain tile hipped roof. The façade is broken by a red brick first floor string course and eaves band. C18 hornless sashes to facade each with gauged brick flat arch heads. Central front door with 8 fielded panels, wide case with fluted pilasters and flat hood on double ogee brackets. A small C19 canted bay window projects to roadside at street level

Present Use: Public House/Hotel

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Timber	Med-High
Office/wheel house	C18	Timber	Med-High
Mill house	C18	Brick	Med-High
Bridge	C20	Steel/Concrete	Med

ARCHAEOLOGICAL POTENTIAL

The mills re-use as a furniture store and ultimately a public house/hotel plus the re-engineering of the waterways has undoubtedly impacted upon the survival of internal fixtures, fittings and technology and external water management controls (sluices etc). Though a remnant of the stone drive and a few examples of milling paraphernalia decorate the bar area on the first and ground floors, little other technology is thought to remain.

SITE SIGNIFICANCE

Typical C18 timber framed watermill but one which shares similarities in architectural treatment with the nearby Moulsham Mill. Although the building has been significantly altered internally and extended, its historic character remains and it, together with the adjacent millhouse, survive as the most visibly pleasing buildings along Victoria Road.

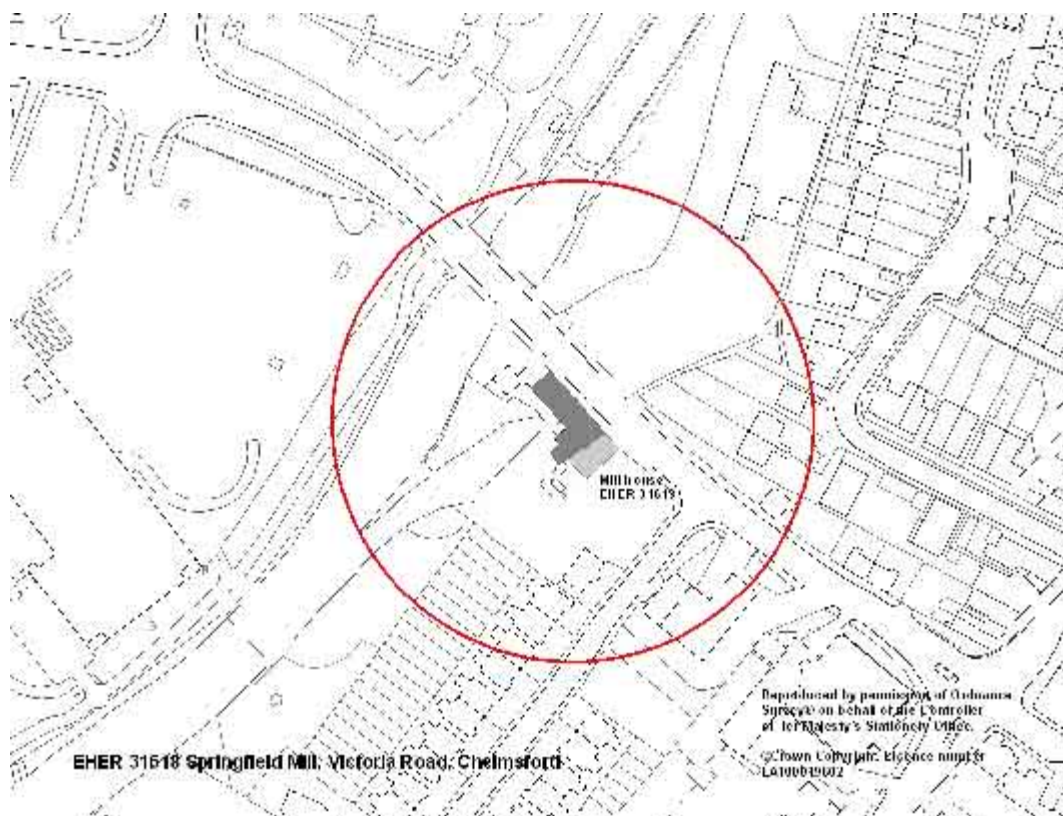
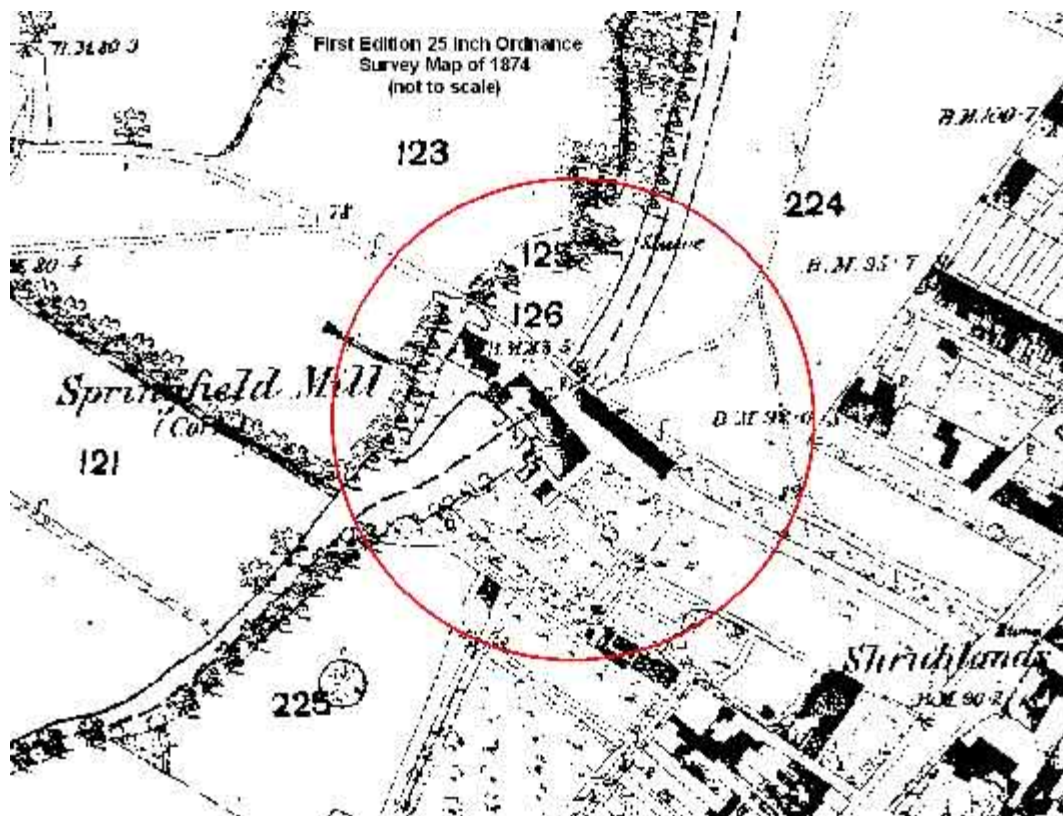
RECOMMENDED ACTION

Maintain current Grade II listed building status. Given the impact on the mills technology, fixtures and fittings, future proposals to remove or significantly alter the remnant stone drive or hursting should be discouraged.

MANAGEMENT

Springfield Mill is presently in commercial use and as such well maintained. A detailed historic building survey at RCHME level 3 should be recommended if the original fabric of the mill building is threatened by major works or demolition.

GRADING **/**





Springfield Mill looking north-west



Early photograph of Springfield Mill

COLCHESTER DISTRICT

EHER	Site Name	Grade
Watermills		
31074	Bourne Mill, Bourne Road, Colchester	****
2568	Cannock Mill, Old Heath Road, Colchester	**
2638	Crockleford Mill, Crockleford Hill, Colchester	*/**
15088	Dedham (Clovers) Mill, Mill Lane, Dedham	*/**
32482	Layer Mill, Mill Lane, Layer de la Haye	**/**
32728	Wakes Colne Mill, Colchester Road, Wakes Colne	***
Tide Mill		
15143	Fingringhoe Tide Mill, Abberton Road, Fingringhoe	***
Steam Mill		
31171	East Mill, East Street, Colchester	**/**



SITE NAME	Bourne Mill, Bourne Road		
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PARISH	Colchester	DISTRICT	Colchester
NGR	TM 00564 23844	HER	31074
RIVER	Colne (Bourne Pond)	EHUID	116864

CURRENT STATUS **Con. Area** No **Listed Grade** I **EBAR** No

STATUTORY LIST DESCRIPTION

21/02/1950

Built in 1591 by the Lucas family from the C12 and C13 materials of the destroyed St John's Abbey (Bourne Ponds belonged to the Abbey) probably on the site of a former mill. Its elaborate character suggests that it was built for a fishing lodge. In the C17 it became a cloth mill (Dutch refugees) and was used as such until the mid C19, when it was converted to a corn mill. It is of 2 storeys and has elaborate Dutch gables at each end with curved and voluted off-sets mounted with pinnacles, and at the apex an octagonal chimney stack. In the south gable is a stone panel inscribed "Thomas Lucas, miles, me fecit Anne Domini 1591". There are original windows on the front with stone mullions and moulded labels, an original doorway with square head, moulded label and moulded panel above with an achievement of the Lucas arms; there is a weather boarded C19 hoist loft. The interior, which has been converted into a dwelling house, retains the mill machinery - 3 great grindstones and the water wheel. An exceptional building and very picturesque.

JOHN BOOKERS SURVEY

09/10/1970

Unique building with Dutch style gables, walls of flint, brick and tile with quoins, door and window dressings and string courses of stone. Inscription on South wall 'Thomas Lucas Miles, Anno Domini 1591'; his arms, quartering two other coats, are over the entrance. Two fireplaces with Tudor heads at each end of the building rise to octagonal stacks in the centre of each gable. Cast-iron overshot wheel c.22ft diameter. Cast-iron pit wheel and bevelled cast-iron wallower. Main shaft rises to apple wood spur wheel in modern living area; some remains of associated machinery on the ceiling but its function is not clear. Living room on S side also has remains in ceiling, perhaps a pulley, elsewhere chutes survive. Water following from the mill pond to the wheel was held in the mill, in a cistern, before falling onto the paddles. On S side of mill, sluice survives to control level in pond. It appears from documents dated 1818 that a mill called Bourne mill with a pond existed before the present structure. The purpose for which Sir Thomas Lucas erected this building, reputedly with materials recovered from St Johns Abbey, is not clear: it may have been a fishing lodge or a dwelling house. Later, it became a cloth and then a corn mill which it continued as until May 1935. The building garden and pond were presented anonymously to the National Trust in 1936.

Present Use: private residence (tenants) owned by the National Trust

Condition: Good

ERO SOURCES: Lees-Milne, J. (ed) 1945, The National Trust

SITE BACKGROUND:

Although six Colchester watermills were recorded in Domesday (1086), it seems unlikely that Bourne Mill site was one of the six. However only ten years later a foundation charter of St Johns Abbey (1096) records the donation of two fish ponds and a mill (most likely Bourne Mill) by Eudo Dapifer. The Chartulary of St Johns Abbey records agreements over land in the C12 and C13, revealing the proximity of lands to Bourne Mill, Bourne Pond and the Abbeys fish pond. Of the four millers recorded in Colchester in 1301, one is thought to be the tenant of Abbots Mill at

Bourne pond. As recorded in the Court Rolls of Colchester, the abbey leased Bourne Mill to a succession of millers from the early C14 through to the C16. John Rogger of Colchester was tenant in 1326, followed by John Halle (1333), John Wyger (1336-40), John Stokfysch (1345-46), William Speller (1351), Thomas Knop (1352 & 1356-66), John Knyght (1354), John Bellamy (1372), John Smart (1374-78), John Potton (1406), Thomas Sawyer (1413-14) & Thomas Buxstone (1525). Records show that Bourne Mill remained a corn grinding mill through the C14 and C15 as lessees were regularly amerced for faulty measures and excessive tolls. There is no evidence for Bourne Mill working as a fulling mill during the later Middle Ages although the possibility cannot be dismissed (Thornton, 2007).

Following the dissolution in 1538 the Abbey and other assets passed into the hands of the Crown. Bourne Mill remained such until 1544 when it was granted, along with other lands, to Richard Duke for £163, 12s 8d. Duke immediately sold on Bourne Mill to alderman Augustine Beriff and his son William who leased the mill and by 1580 'alienated' the mill and pond to miller John Gibson. He subsequently sold Bourne Mill to Sir Thomas Lucas in 1590. The Lucas family already leased Cannock Mill (downstream) from 1575 and it also latterly passed to Sir Thomas from 1594. Thomas Lucas wasted little time in improving or rebuilding his newly acquired asset, as demonstrated by the panel on the south gable wall dating to 1591. It remains unclear whether this building was entirely new and separate from a pre-existing mill built close-by or entirely replaced a former watermill (Thornton, 2007).

During the first half of the C17 at around 1632 Bourne Mill was leased by Dutch refugees who converted it into a fulling mill for the manufacture of bays (or baize), an industry that formed a significant part of Colchester's early trade and wealth. Despite the outcome of the second English Civil War (1648), the execution of Royalist Charles Lucas and the destruction of the Lucas household at St Johns Abbey, it is recorded in 1651 that John Lucas still retained ownership of the mill, its lands and meads. The Lucas estate descended to Mary Lucas who took both Bourne and Cannock Mills as part of the marriage settlement when she married Anthony Grey the 11th Earl of Kent in 1668. By 1730 the mill was leased to George Scrivener, whose lease highlighted the importance of the mill for hunting and fishing in addition to its milling income. From 1778-1792 Samuel Wright was miller while an estate surveyors report of 1797-8 records: *'The mill is for the sole purpose of fulling baize, flannel etc, the demand for which is at present very small.....if trade should continue bad, it may be of advantage to the Estate to put a pair of low millstones to grind corn, in the mill'*. The same observation was made about Cannock Mill, which presumably also operated as a fulling mill from the C17. However, Bourne Mill continued fulling or at least was not converted to corn immediately as a valuation in 1809 by John Wiggins records *'a small fulling mill which required repair'*. A subsequent survey of 1824 notes that the mill was very respectably owned by Mr DeValle (a significant Colchester based baize manufacturer) who uses it as a cording and spinning mill. It is not clear when Bourne mill ceased fulling but it was probably around 1830-40, and at a point when many other mills in Essex went over to grinding corn. Whites Directory records corn miller Henry Digby tenanted Bourne and Cannock mills by 1863. He remained the main lessee until 1878 and may have been replaced (or sub tenanted) following his death by Arthur Pulford from c.1880. Pulford is described as a miller (water & steam) and corn merchant at both mills in 1898. Pulfords son Alfred. E. Pulford worked Bourne mill from 1926 and until its shaft broke in 1935 (Thornton, 2007).

A. E. Pulford placed the mill on the market in 1935. This was brought to the attention of the National Trust who after an inspection by architect J.E.M. MacGregor and millwright John Bryant purchased the mill in 1936 for £1,050. It is recorded in *England Under the Trust* (1937) *'as in good condition, the machinery was still in*

position but of little interest being of C19 date'. By 1943 the National Trust were considering converting the mill to residential use and engaged architect Marshall Sisson to draw up plans, though the scheme fell through by 1947. Proposals for a lease with Colchester Borough Council failed and by 1950 the mill was derelict. In 1951 the Trust leased the mill to Major Ponder and agreed with his requirement to convert it into a private residence. They also agreed to remove the C18-19 bay making sheds set against the northern wall, to convert the interior to a simple dwelling but otherwise to leave the mill machinery alone. At this point it was listed Grade I with a note recording mill machinery, three great grindstones and a waterwheel. After the failed tenancies with Ponder and Major Heriman, proposals were made to 'properly' convert the mill to a house by removing the machinery. On the advice of SPAB these were rejected at first, but persuaded by the deterioration of the building, the conversion was accepted as long as the machinery was recorded in detail and some pieces left in situ. However the conversion proved to be too expensive and was not carried out. By 1959 it was leased as a Field Centre at which point the Trust removed substantial elements of the machinery. The next tenants continued the process of 'conversion' with the partitioning of the upper floors and removal of the remaining machinery and mill stones (by 1968). From 1964 it was leased to Peter Watts and between 1971-1979 by local artist Andrew Dodds. Estimates for repairs to the stonework and waterwheel made in the early 1970s topped £5000, while another to get the wheel turning once more came in at around £3000. In 1974 Rex Wailes (millwright) was invited to inspect what was left of the machinery and was disappointed that the machinery and stones had been 'unnecessarily scrapped' (Thornton, 2007).

Field Survey 2008

1/02/08

Bourne Mill is situated toward the southern extent of Colchester town, to the west of the Hythe and Old Heath and along Bourne Road. Formerly lying on a quiet tributary of the Colne the mill now lies in a rather incongruous location sandwiched between C19 and later housing developments. The river course flows on an east-west direction downstream to Cannock Mill, Distillery Pond and Hulls Mill (now demolished) and eventually via a culvert beneath the Haven Road Industrial Park, to the Colne. Borne Pond was created by embanking and widening the river along its eastern edge, thus forming a large mill and fishing pond capable of providing a sufficient head of water to power the fulling mills. The mill butts up against the eastern embankment and was built so that its lower storey containing the wheel pit and overshot waterwheel lies below the level of the mill pond while the upper, stone floor (and lodge) is above. The short mill leat enters the wheel pit centrally from the west and spent water is channelled away via a culverted tail race emerging at a short distance to the east. A modern sluice gate, in a permanently open position, drains into a bypass channel that skirts around to the south of the mill and rejoins the watercourse c.72m downstream. The mill cottage lies to the NE of the mill.

Built in 1591 by the Lucas family Bourne Mill is thought to have been constructed as a dual purpose structure incorporating a fulling mill within the lower storey and a fishing lodge heated by two fire places on the first floor. The attic or bin floor is a later insertion of c.1830-40 associated with its conversion to a corn mill. The mill is built over five bays and 2½ storeys with elaborate Dutch gables to the north and south elevations, each with curved and voluted off-sets mounted with pinnacles and an octagonal chimney stack at the apex. In the south gable is a stone panel inscribed 'Thomas Lucas, miles, me fecit Anno Domini 1591'. The pitched roof is covered with red clay plain tiles and incorporates inserted C19 gable dormers to the front and rear and a central C19 weather-boarded **lucam** supported on straight braces. The lucam rises above the eaves and is cantilevered from the level of the lower purlin. It lies above a central loading door inserted into the façade at first floor during the C19.

Original windows on the front and rear have stone mullions and moulded labels. An original arched doorway with a square-headed surround and moulded label lies within the northern bay and below a moulded panel bearing the Lucas arms. Diagonal angle buttresses and a single two table buttress provide additional support to the eastern bays against the weight of the mill pond and action of the waterwheel. The walls of the building are constructed partly reusing C12 and C13 materials recovered from St John's Abbey. They comprise an amalgam of limestone pieces (some dressed), septaria and brick set into lime mortar with joints dressed using 'strings' of angular black flints.

Despite the mills conversion to a dwelling house and the removal of much of the auxiliary machinery, fixtures fittings and the millstones, it still retains an operational C19 **overshot** iron wheel, upright drive train and a layshaft with pulleys. The recently restored iron-framed wheel produces approximately 14hp and measures 18ft in diameter, 5ft in width and has 64 steel buckets. It is fed by an iron trough or **penstock** with a shut mechanism that finely controls the through-put of water to the wheel. The present circular iron wheel shaft or axle is a later adaptation and replacement of a heavier square section timber axle. The size and form of the original axle can be seen in the castings of each wheel hub. Although the wheel turns freely it suffers from back watering due to problems with the tail. The waterwheel drives a bevelled iron **pit wheel** and iron **wallower** mounted onto a timber octagonal upright shaft rising to the level of the binding joists at first floor. Just below the spur wheel the upright shaft is decorated using lambs tongue stop chamfers, a feature popular during the C16 and C17. The spur wheel has apple wood cogs and engages with a bevelled wooden gear mounted onto a layshaft. This in turn rotates a pulley belt driving the **sack hoist** on the floor above and a large drum belt driving auxiliary machinery (removed) on the stone floor. Although no evidence of the stone nuts or the millstone apparatus survive, some individual millstones remain on site.

Bourne Mill is presently owned by the National Trust, who maintain the fabric of the building, have conserved and repaired the surviving mill apparatus and actively promote the mill by encouraging visitors during the summer months. At the time of the survey the National Trust were undertaking a restoration of the lucam and repairs to the dormer windows.

Present Use: Visitor Attraction owned by the National Trust

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C16	Stone/Brick	High
Mill Cottage	C19/C20	Brick	Low-Med
Sluice	C20	Iron	Low-Med

ARCHAEOLOGICAL POTENTIAL

Although no evidence of the mills use in fulling remains, the later overshot waterwheel and elements of the inserted C19 mill gearing does survive intact. Many of the internal divisions and alterations inserted as part of its former use as a dwelling have now been removed and the mill has returned to something resembling its former industrial layout.

SITE SIGNIFICANCE

An exceptional, ostentatious and unusual dual purpose building with a complicated history; first built as a corn mill and fishing lodge, later converted to fulling and then

back to corn milling. Bourne mill is unique in Essex and it is unlikely that many other similar mills/buildings combining an industrial and social function were built or remain on a regional or national level. It is also one of earliest mills to survive in the county, with only two other examples, Lt Braxted and Wethersfield Mills thought to retain C16 or earlier fabric. It is also one of a very few overshot mills to be built in Essex, one of only two that retain a waterwheel (the other Spring Valley Mill) and the only watermill to preserve a working overshot wheel.

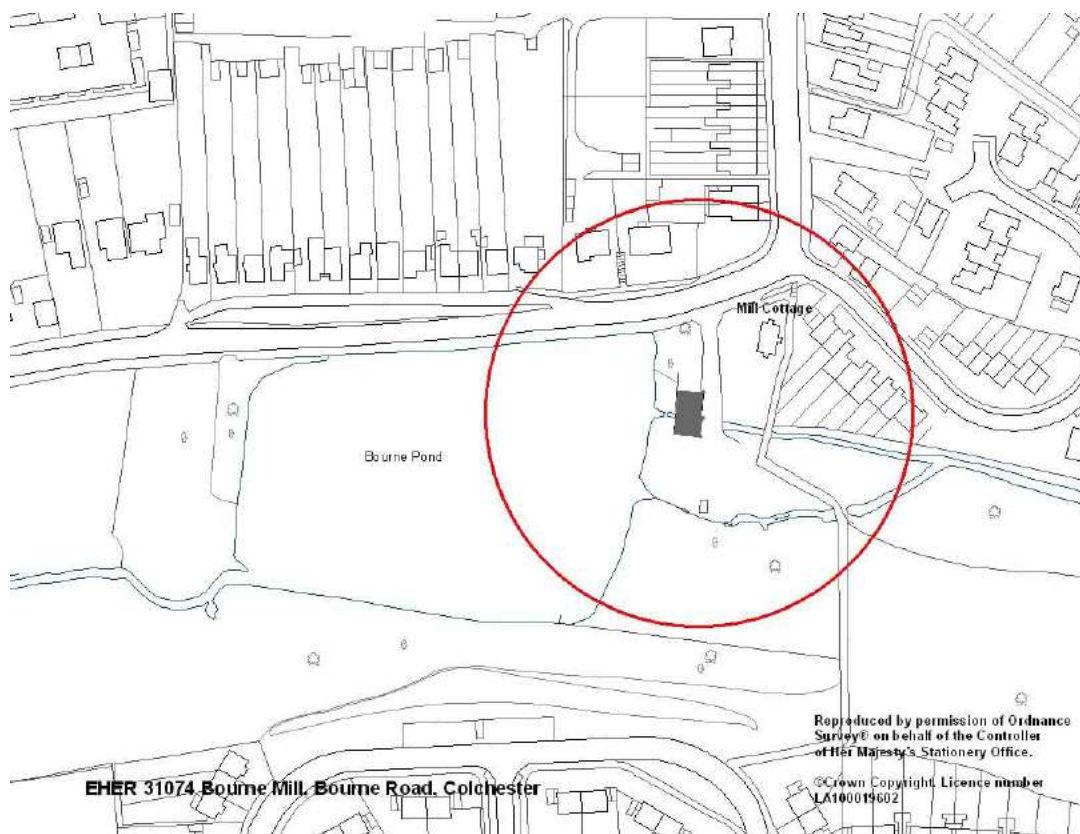
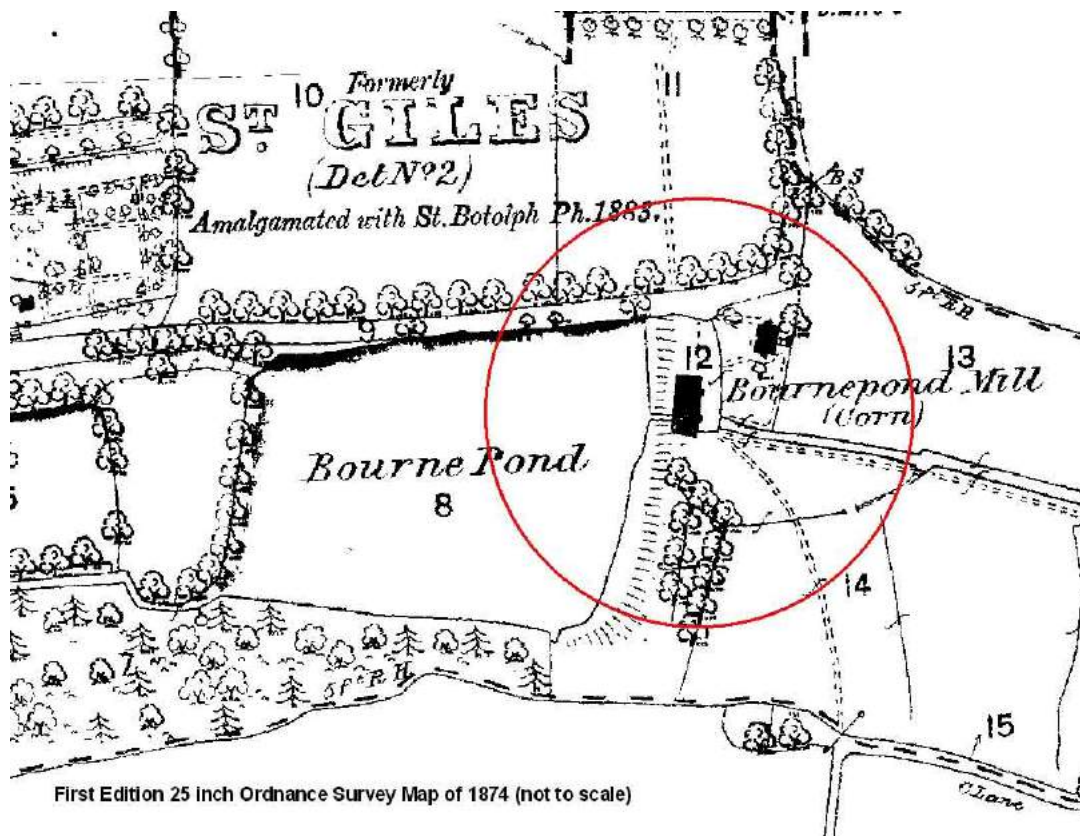
RECOMMENDED ACTION

Although the list description of 1950 is out of date as it records 'three great grindstones', Bourne Mill, for a whole host of reasons, namely architecture, date, historic association and technological survival still merits its Grade I listed building status.

MANAGEMENT

Bourne Mill is presently owned by the National Trust, who conscientiously maintain the fabric of the building and through a scheme of repairs have brought it back into a semi- working order. Recommendations for detailed historic building or archaeological survey should be made on any significant planning applications affecting the building or the surrounding site.

GRADING ****





Bourne Mill during restoration works 2008, looking north-west



**Bourne Mill, gable end,
looking north**

SITE NAME	Cannock Mill, Old Heath Road		
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PARISH	Colchester	DISTRICT	Colchester
NGR	TM01067 23817	EHHER	2568
RIVER	Colne	EHUID	117159

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

02/12/1971

Picturesque weather-boarded building, rebuilt in 1835, 3 storeys and hoist loft, the roofs of slates. Old tiled outbuilding on the east.

JOHN BOOKERS SURVEY

28/09/1973

Water mill c.1800, weatherboarded, three storeys with lucam and brick ground floor, slate roof. To the east is an old tiled outbuilding. No machinery. Owned by Messrs. Cramphorn

Present Use: Disused

Condition: Under repair

ERO SOURCES: (D/CT 90),

SITE BACKGROUND:

A Cannock mill is recorded in the will of Sir Thomas Lucas dated 1611 and in a later estate surveyors report of 1797-8 which along with its sister mill, Bourne mill, records: *'The mill is for the sole purpose of fulling baize, flannel etc, the demand for which is at present very small.....if trade should continue bad, it may be of advantage to the Estate to put a pair of low millstones to grind corn'*. The same observation was made about Cannock Mill, which presumably also fulls baize from the C17. A valuation of the De Grey Estate in 1809 included both Bourne and Cannock Mills. It records that Cannock mill had a good dwelling house with a fulling mill, a small flour mill adjoining and a bank ideal for drying baize (woollen cloth). It also reports that part of the original fulling mill had been converted for corn milling and both were fully employed serving the garrison. The fulling mill was bankrupt under Henry Dunnage & Sons by 1819 although was back in business milling corn five years later as survey of 1824 notes that Cannock mill is *'now entirely a flour mill, the fulling trade having ceased'*. The present mill dates to 1845 and according to Whites Trade Directory was run Henry Digby, corn miller by 1848. Built with a timber frame and clad using traditional weatherboarding the mill had an external **overshot** wheel fed by three pipes from an embanked mill pond to the rear. Cannock and Bourne mills were worked by Arthur Pulford (water & steam, corn merchant) from 1880 and continued under Ernest Pulford until just after the end of the second World War. Latterly the mill became a store for Cramphorns but by the early 1960s, was so dilapidated that the wheel was removed. At this point all of the internal machinery fixtures and fittings were removed and the mill was re-used to house the business of the current owner, trading as Dolphin Aquatics since c.1988.

Field Survey 2008

1/02/08

Cannock Mill is sited downstream from Bourne Mill (EHER 31074) to the west of the Hythe and along Old Heath Road. It was once situated along a quiet tributary of the river Colne, but due to urban expansion in the area of Old Heath the mill has now been absorbed into a modern suburb. The mill is built parallel to and on the southern side Old Heath Road and is aligned NW-SE across the SW end of its mill pond, that adjoins to the rear. The mill pond was banked up to a height sufficient to feed an external **overshot** wheel formerly situated on the SE end wall. The mill tail is

culverted below Old Heath Road to the east and drains into another mill pond (distillery pond) downstream to the east. A by pass channel skirts around the mill and the mill pond to the north before rejoining the watercourse toward its junction with Old Heath Road. Due to the insufficient volumes of water passing along this tributary of the Colne, all three of its mills, Bourne, Cannock and Distillery or Hulls mill were provided with large mill ponds to store up adequate levels of head water. The final mill, Distillery Mill on Distillery Pond was demolished in 1896, but the sluice gate and wheel pit remain intact to control water levels in its mill pond and the drainage of the mill ponds upstream. Water from Distillery Pond was and still is culverted for a significant distance, passing below Haven Road (and now the Industrial estate), before its eventual outfall on King Edward Quay.

Cannock Mill is a mid C19, narrow five bay 3½ storey timber-framed, weatherboarded mill with a brick built ground floor storey. It has a slate covered gabled ended roof with gables to the NW and SE and a central gabled lucam on straight braces to the roadside front. A two storey timber-framed lean to extension abuts its NW end elevation. The window and door apertures are symmetrically arranged with a central front door, taking in door and lucam above, each flanked by a single window either side. The window openings in the brickwork of the ground floor have segmental arches while those of the timber framed upper floors are flat headed. Apart from the smaller windows in the lucam and gable ends, the windows comprise 4x4 light top hung sashes, replicating original fenestration. Original halved vertically boarded doors remain in the ground floor opening and the first floor loading door. A simple loading gantry projects out from the door threshold of first floor loading door. Internally no technology, fixtures or fittings associated with its former milling use remains, although the softwood timber frame remains exposed and intact. Former C19 single storey outbuildings to the mill, now in use as a day nursery, lie immediately to the north of and enclosing the northern corner of the mill site while a later C19 mill house, Cannock Mill House, is situated to the south.

Present Use: Commercial

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C19	Timber/Brick	Med
Mill House	C19/C20	Brick	Low-Med
Outbuildings	C19	Timber	Low-Med

ARCHAEOLOGICAL POTENTIAL

No milling technology survives due to its subsequent use as a store and now an aquatics business. However an archaeological study of the building, its frame, earthworks and watercourses would provide invaluable information on the operation and historic development of this unusual overshot, former fulling and corn mill.

SITE SIGNIFICANCE

Former fulling and later corn mill that has historic associations with the Lucas family and group value with its sister mill, the Grade I Bourne Mill sited further upstream. The mill has been extensively altered internally and now lacks significant technologies, fixtures and fittings. It has, however, not been adversely affected by unsympathetic accretions and continues to make a positive contribution toward the historic/architectural character of the area and the homogenous value of the mills, earthworks and mill ponds along this tributary of the Colne.

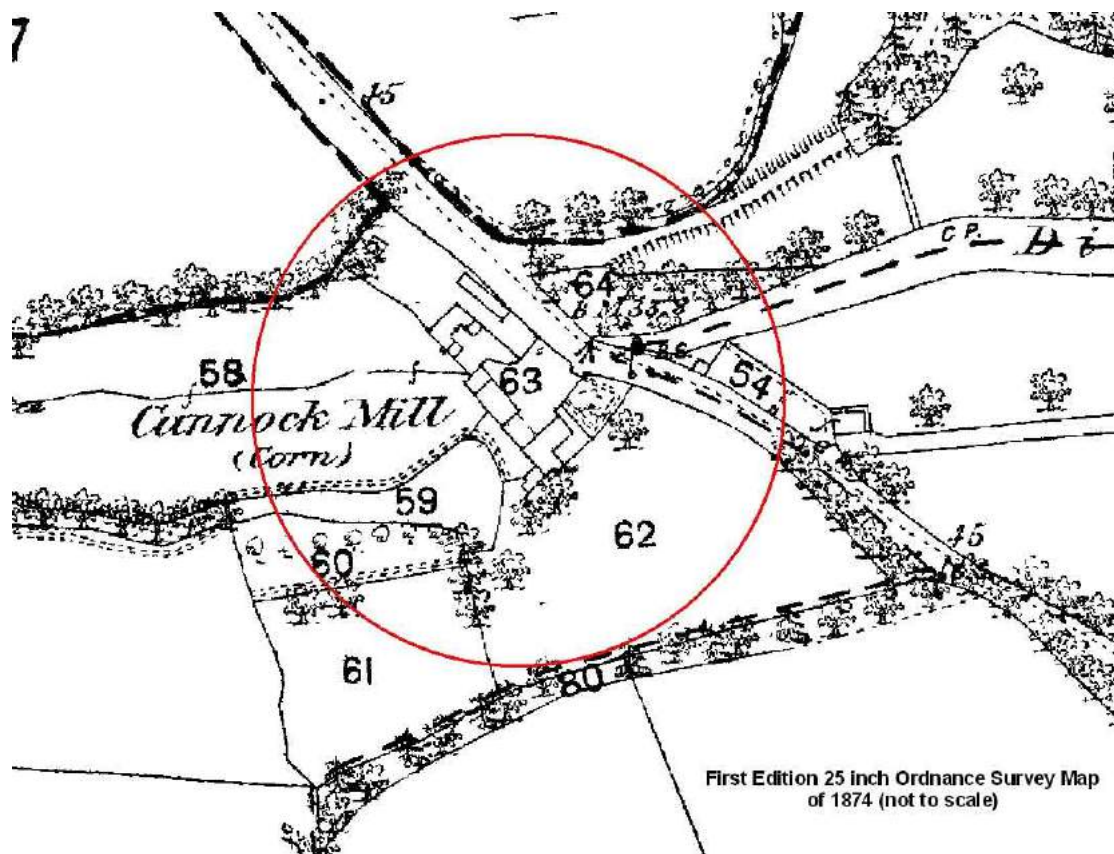
RECOMMENDED ACTION

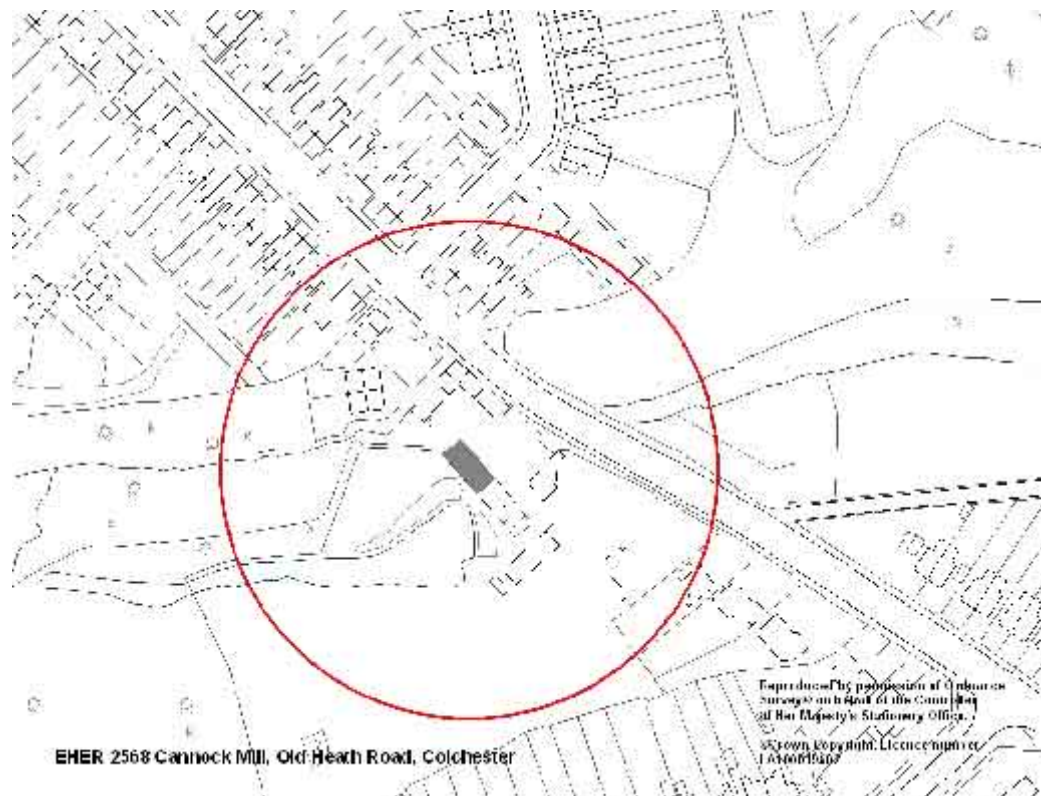
Maintain its present Grade II listing

MANAGEMENT

Cannock Mill is presently in commercial/retail use by a small family owned business. A detailed historic building survey at RCHME level 3 should be recommended if the mill building is threatened by major works or demolition

GRADING **





Cannock Mill looking south-west

SITE NAME	Crockleford Mill, Crockleford Hill		
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PARISH	Colchester	DISTRICT	Colchester
NGR	TM 03114 26371	EH	2638
RIVER	Salary Brook	EHUID	NA

CURRENT STATUS	Con. Area	No	Listed	Grade	NL	EBAR	No
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JOHN BOOKERS SURVEY	05/02/1974
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Brick Victorian mill of three floors below a wooden lucam. Said to have an overshot wheel driving one pair of French Burr stones and a second pair of Derby Peak stones W.W. Payne ground corn here until 1955; the building is noted for its climbing grape vine. Site of a fulling mill on the Chapman & Andre map of 1777.

Present Use: Part of farm

Condition: Renovated for domestic use

ERO SOURCES: (T/B 216/2), (D/CT 90), (D/CT 6)

SITE BACKGROUND:

One of three fulling mills built along the Salary Brook. Crockleford mill was first recorded in 1588. It seems to have been part of Shaws Farm, being held by Edmund Church before 1647 and by John Roberts in 1810 and 1811. It may have been built by William Beriff, the Colchester clothmaker who acquired the farm in 1545, although it was not listed with the farm at his death in 1595. In 1657 it was rebuilt as a small bay-thickening or fulling mill and was a fulling mill in 1777 and a bay mill in 1797. In 1818 John Oakley sold the mill to his son also John Oakley and by 1819 was leased to Thomas Stammers who converted it to grind corn. Stammers was quickly bankrupt and the mill converted to an oil mill, but it was destroyed by fire in 1823. The present brick mill was built, retaining some oil mill plant and was placed on the market in 1837 as a chemical plant and water corn mill, with three pairs of edge stones. With this plant the London Chemical Works manufactured 'Mother Liquor'. This proved to be unsuccessful and Crockleford was converted back to a corn mill with two pairs of stones driven by an overshot wheel. It was worked by the last miller W.W. Payne up until about 1955, after which it stood derelict for 15 years before being converted to residential use. The penstock and wheel were removed at this point.

Field Survey 2008	25/01/08
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Crockleford was a small rural mill built along the Salary Brook to the east of Colchester. Its rural location has over the past c.50 years been compromised by the encroachment of modern housing estates, including Parsons Heath and Welshwood Park now adjacent to the west. The mill lies in open countryside and within an island formed by the course of the Salary Brook to the east and the by-pass channel which circumvents the mill to the west. A sluice is sited north of the mill and at the juncture of the brook and channel, while a small brick built single span accommodation bridge provides vehicular access to the mill. The mill leat is now dry.

The present mill dates to the first half of the C19 (c.1837) and is a small three bay red brick 3½ storey mill with gable ends to the SE and NW. An over-sailing weather-boarded lucam on straight brackets projects out from the NW gable end and over a taking-in door (now window) at first floor and the main entrance at ground floor. The latter has a replica halved door and a plain flat canopy/porch. The walls are laid in Flemish bond and have segmental headed apertures with rough brick heads. All of the window joinery is modern and replicates multi-pane sash/casement windows typical of the C19. The grape vine mentioned by Booker remains (although it is being

displaced by a large Wisteria) but the two pairs of stones, have now gone and no internal fixtures, fittings or technology survives (pers comm). A single storey former workshop/forge abuts the mill to its NE, while former C19 and later farm buildings extend to the N and a small C19 mill cottage lies adjacent to the NW. The mill cottage was latterly used by W.W. Payne although the previous millers occupied a much larger house fronting Bromley Road (now 115 Bromley Road). The mill was converted to residential in 1971 and in appearance has changed very little since Benham visited in the early 1970s. The present owner is Mr. T. Parker.

Present Use: Residential

Condition: Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C19	Brick	Med
Mill House	C19	Brick	Low-Med
Farm Buildings	C19/20	Brick/Timber	Low-Med

ARCHAEOLOGICAL POTENTIAL

The mill's latest reuse as a house has significantly impacted upon the survival of original internal spaces, technology, fixtures and fittings.

SITE SIGNIFICANCE

A C19 corn, fulling and oil mill unusual in its use of an overshot wheel. Although Crockleford no longer retains its overshot wheel or any original technology, fixtures or fittings, its visual appearance has not extensively changed since it stopped milling in the mid 1950s and it still retains elements of its historic character.

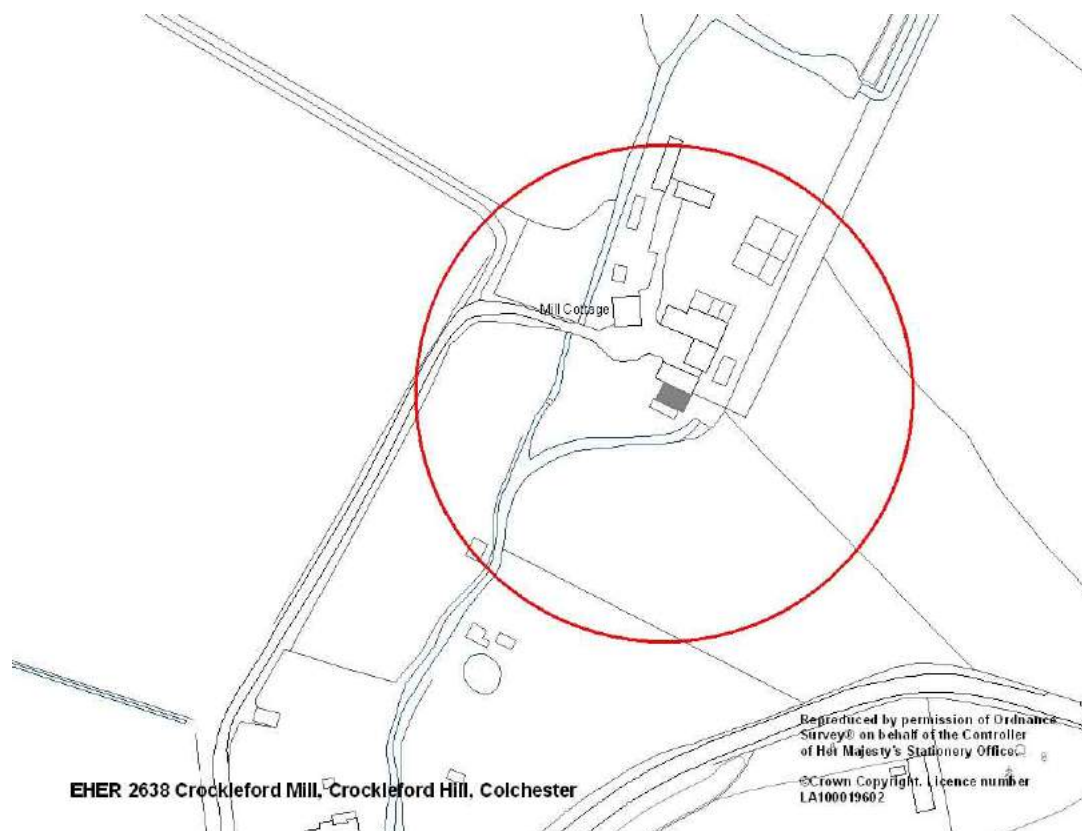
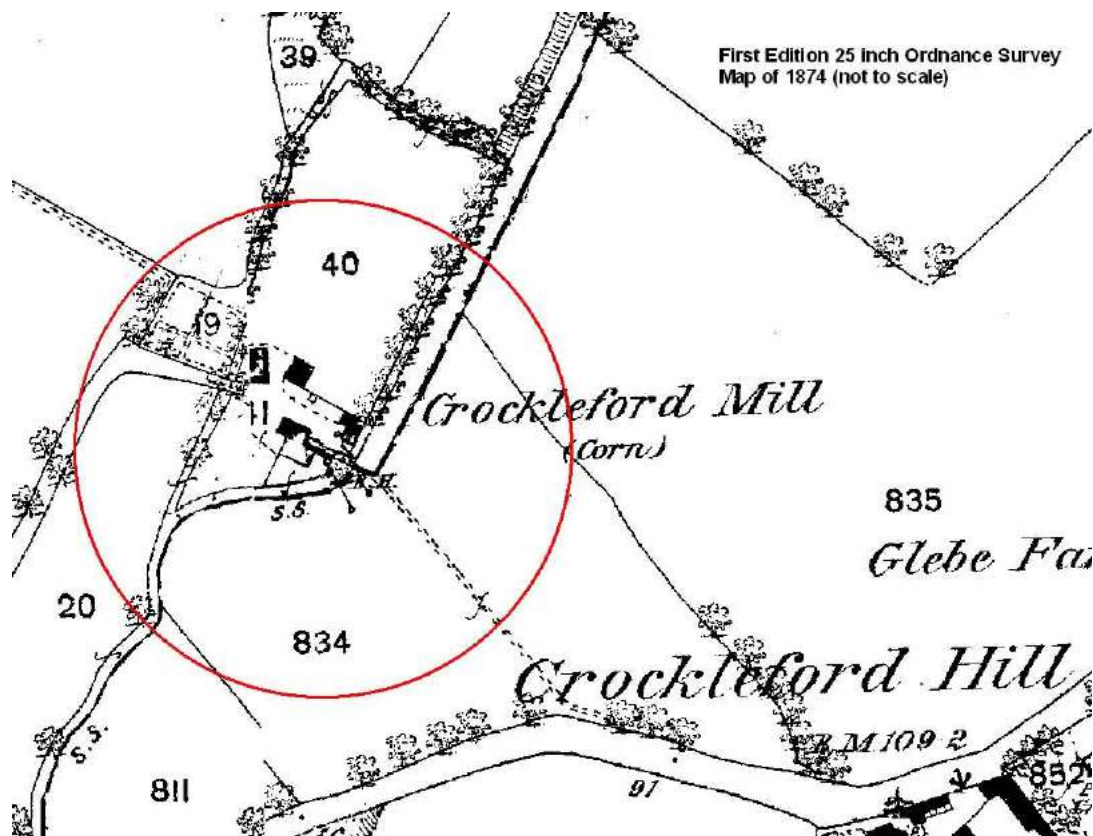
RECOMMENDED ACTION

Crockleford Mill does not meet the criteria for listed building status. However, its local importance should be recognised and as such placed on a local list of significant buildings and included in future Local Development Documents.

MANAGEMENT

Crockleford Mill is presently in residential use and in a fair condition. A detailed historic building survey at RCHME level 3 should be recommended if the mill and/or associated buildings are threatened by major works or demolition.

GRADING */**





Crockleford Mill looking south-east

SITE NAME Dedham (Clovers) Mill, Mill Lane			
PARISH	Dedham	DISTRICT	Colchester
NGR	TM 0575 3345	EH	15088
RIVER	Stour	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

03/06/1971

The main interest is not the present building but in the associations of the site with the well known Constable painting Dedham Lock and Mill. The mill which J. Constable depicted in c. 1817 was demolished in the mid C19 and replaced by a mill with an iron undershot wheel and iron pit wheel, by 1860. The extant cast-iron sluice gate and gangway are marked Whitmore and Son (i.e. pre-dating the foundation of Whitmore and Binyon) and must belong to this second mill. The present building is reported to have been built in 1913 after a fire in 1908. It had a waterwheel and later a turbine which went out of use at the beginning of the last war and was latterly powered by electricity. The mill house of c.1600, remains on the east side.

Present Use: Milling (electric)

Condition: Good- working order

SOURCES: (D/P 26/28/5), (D/DC 25/1), (D/DB T 1063) (D/DVy 13) J. Constables; Dedham Lock and Mill

SITE BACKGROUND:

Dedham mill was an undershot mill driving 8 pairs of stones for grinding corn. It was owned by Constables father Abram Constable until 1846 when it was sold at auction in Ipswich (Beckett, 1955).

Field Survey 2008

25/01/08

Clovers Mill was built astride the River Colne and as such is located at a short distance to the north of the historic core of Dedham and along Mill Lane. The mill site comprises a tall and imposing multi-storey red brick mill with a detached two-storey granary and outbuildings sited along the rivers edge to the south and west. The site was redeveloped in 1987 by the Southend Estates Group PLC who subdivided the mill into residential apartments, converted the granary to domestic use and provided additional accommodation with new build to the west. A pair of C19 brick built cottages to the east of the road and facing the mill may well be mill manager/workers accommodation.

Clovers Mill is aligned approximately N-S across the east flowing River Colne. A by-pass sluice sited adjacent to the mills north-western angle regulates the passage of water through the mill and diverts excess head to a large mill pool scoured out immediately to the north. The watercourse is complicated further by the Navigation and Dedham Lock, which diverts around the mill to the north and flows into the same mill pool and eventually the natural course of the river. The mill tail has been culverted between the mill and Mill Lane and continues on an almost straight path east, before turning north to rejoin the Colne along its southern bank. The sluice mechanism remains the same Whitmore & Son mechanism as that reported by Booker in the early 1970s (see above). Five of its six gates are still manually cranked using the original rack and pinion mechanism, the sixth however has in recent times been automated and is opened by an electric motor.

Clovers Mill comprises three distinct builds probably constructed over two periods. The earliest build is the tall five storey red brick range to the front, which appears to predate a plainer four storey building wrapping around its NW angle and a similarly plain, contemporary three storey range to the rear. Although these may be later they were built as part of the mill and are not modern additions associated with its later residential use. The principal front range is seven by three bays and is built in pier and panel construction in red brick in English bond. External strip pilasters are visible at bay intervals between the first floor and the brick parapet. They rise from a projecting stone string course at first floor and terminate below a dentil course which forms part of an over-sailing brick (eaves) band below the parapet. The front range is generally symmetrical apart from a disharmony in the heights of windows between the southern four and northern three bays. The southern four bays are laid out over five storeys with a series of smaller apertures along the upper floor, while the northern bays are laid out over four storeys with a range of taller windows along the top storey. The window positions suggest that the internal floor levels are at odds which each other and that they were internally divided and functionally distinct. All the windows have segmental brick arch heads, plain stone sills and modern replica sash windows of four or six lights. An external gantry or walkway on decorative wrought iron brackets and terracotta corbels projects from the southern elevation at fourth floor. A wrought-iron loggia extends along the ground floor and to the front of the main entrance, which in common with the lower courses of the angles has blue brick dressings. The rear ranges lack the decorative features used in the principal range but share some similarities in fenestration and decorative ironwork. The northern bays of the rear ranges are built onto a steel raft supported on piles which rise out of the river and presumably facilitate unhindered flow of water to the wheel or latterly turbine pit. This feature also enabled barges to moor close up to the mill and below the **lucam**, which still projects out over the river from the rear three storey range. A pair of loading doors (now reused as patio windows) are located below the lucam at ground and first floors.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Flour Mill	C19	Brick	Med
Granary	C19/C20	Brick	Low-Med
Sluice	C19	Iron	Med
Lock	C19	Brick	Med-High

ARCHAEOLOGICAL POTENTIAL

Due to the mills conversion into apartments it seems unlikely that any original internal spaces, technology, fixtures and fittings survive. The site does however retain some archaeological interest in the continued use of a C19 sluice by Whitmore and Son and its association with the adjacent navigation.

SITE SIGNIFICANCE

An early C20 brick built water-powered flour mill which in common with the majority of large brick built water or steam mills has been converted into apartments or is in office/commercial use. The mill contributes toward the historic character of the Conservation Area which includes Dedham Lock, made famous by John Constables painting of the lock and the present mills predecessor.

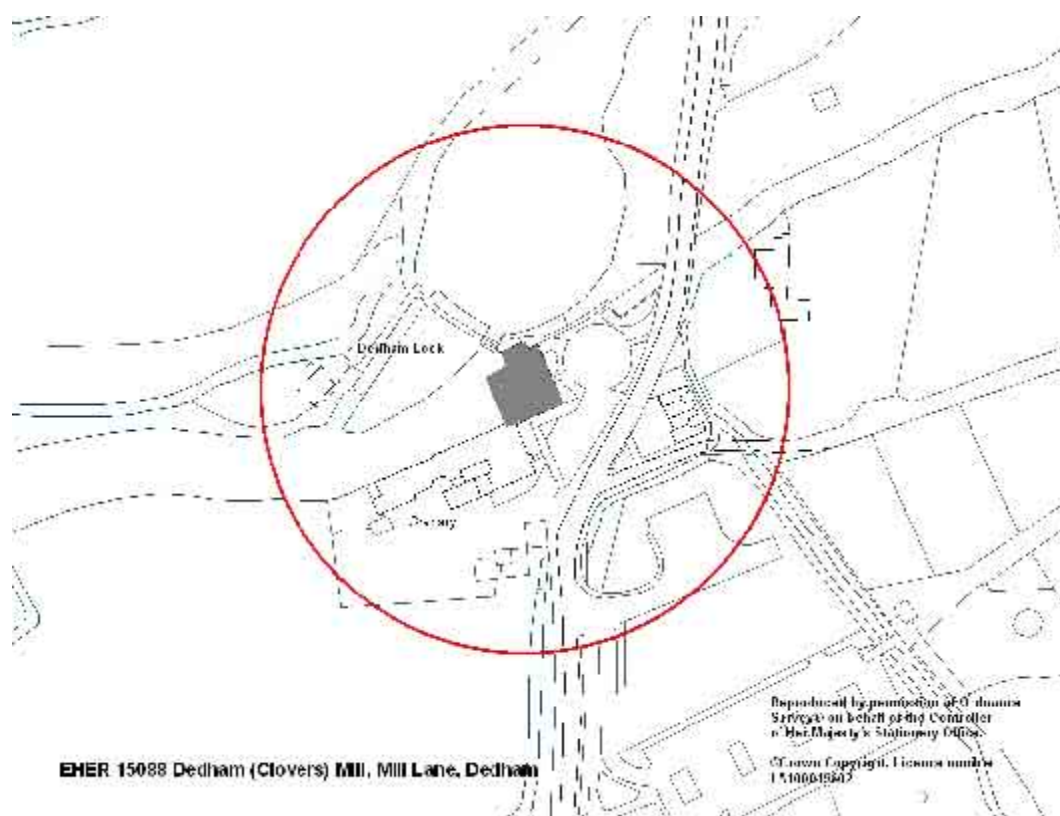
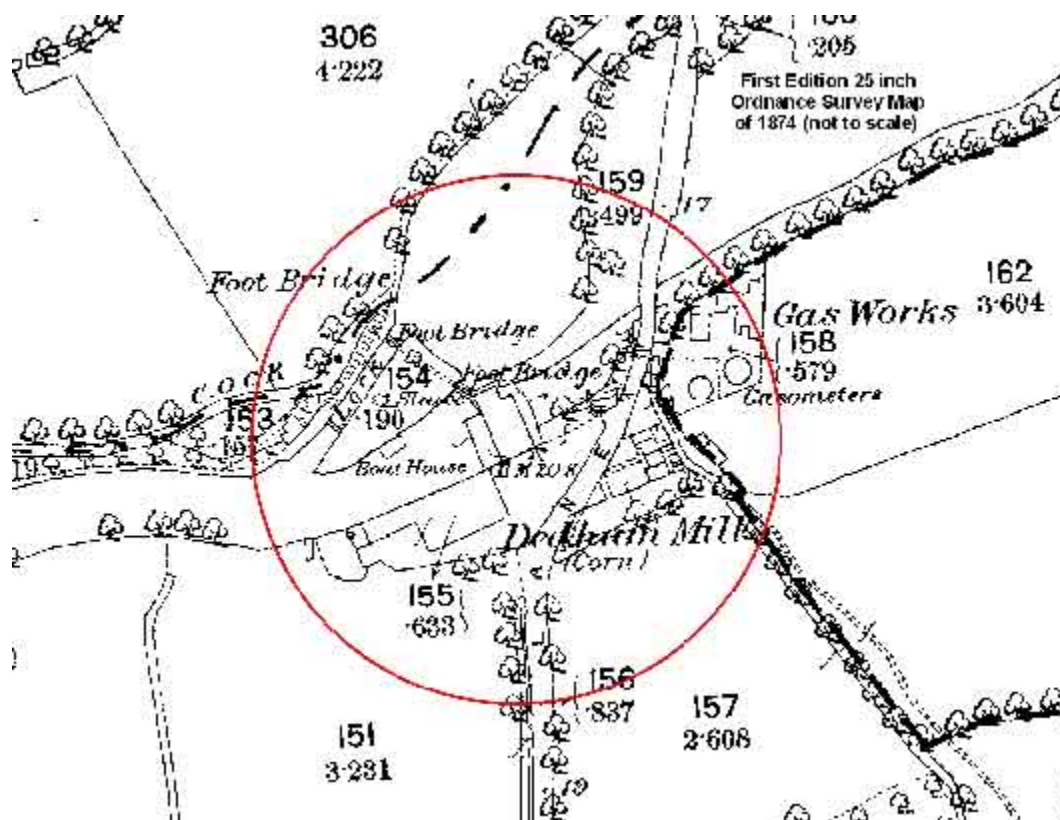
RECOMMENDED ACTION

Given the levels of alteration associated with its residential use it is unlikely that Dedham Mill would meet the criteria for listing. The site should however be recognised as in future Local Development Documents and included on a local list of significant buildings.

MANAGEMENT

Dedham Mill is presently in residential use and in good repair. A detailed historic building survey at RCHME level 3 should be recommended if the mill is threatened by major works or demolition.

GRADING */**



EMER 15088 Dedham (Clovers) Mill, Mill Lane, Dedham

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Dedham (Clover) Mill looking north-west

SITE NAME East Mill, East Street			
PARISH	Colchester	DISTRICT	Colchester
NGR	TM 00684 25338	EHHER	31171
RIVER	Colne	EHUID	116959
CURRENT STATUS	Con. Area Yes	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

25/03/1968

Mid/late C19. Front block, apparently built in 2 parts, of interest, with rather later tower behind. Additions to west and to much altered building at rear. Front block of yellow brick, 4 storeys, 11 windows with segmental arches, strip pilasters rising on the end elevation to 3 round arches. Slated roof with hipped gables and bracketed eaves. Timber hoist loft: later entrance door. Tower also yellow brick with pyramidal slated, roof and corbelled eaves. Round-arched windows; triangular dormers. Nos. 70 to 75 (consec.) form a group with East Mills and the Mill House.

SITE BACKGROUND:

East mill, on the Colne at East bridge, was held by St. Botolph's in 1311, and remained in the priory's possession until the Dissolution when it was granted to Sir Thomas Audley. It worked as a corn mill until the mid 15th century or later, but was a fulling mill in 1552. Audley conveyed it in 1536 to John Christmas, whose son George sold it in 1554 to John Maynard. The mill was a fulling mill in 1569 and in 1582 when it was run by Maynard's widow Alice. In 1624 it comprised both corn and fulling mills. By the latter part of the C18 East Mills were in the hands of Samuel Wright, who was declared bankrupt by 1783. The corn mills were then expanded by Henry and John Dunnage, millers in the late 18th century, alternatively by Bartholomew Brown and when Edward Marriage bought the mill in 1840 it was a breast or overshot mill with six pairs of French Burr stones. Marriage installed an auxiliary steam engine in 1844, introduced the first silk screen flour dressing machine and subsequently won a diploma for his products at the Great Exhibition of 1851. In 1865 Marriage improved the river above the Hythe to enable London barges to reach the mills. In the 1870s Edwards son Wilson became partner and further improvements were made to the mills and their machinery, including the installation of a second steam engine and the introduction of roller mills. Between 1885 and 1893 the mills were almost completely rebuilt and extended to accommodate a 6-sack roller plant, besides the old mill stones. Warehousing was extended. The mills were renovated in 1930-1 by Rank Hovis McDougall, the mill stones and water wheel being dismantled but were closed by 1976 and converted into an hotel in 1979. It has subsequently been converted into residential apartments.

Field Survey 2008

1/02/08

The East Mills were built on the eastern side of the River Colne and at the junction where it is crossed by East Street and the East Street Bridge (dated 1802). It survives as a large multi period rambling brick built mill sited on a very old mill site. The majority of the mill dates from the later C19 with a roller mill of 1885, warehouse, silo and grain discharging elevators of 1888, main mill building of 1890 and a tower for watertanks and wheat cleaning plant, 1893 (Alderton & Booker, 1980). Attached to the eastern end wall of the front range is a Grade II listed C18 or early C19 mill house (EHHER 31172). The front range which presents its façade to East Street is a large 4½ storey, yellow brick, eleven window range with a half-hipped slate covered roof and an off-centre gabled and weatherboarded lucam on wrought iron angle brackets. The off-centre positioning of the lucam, the slight but distinct change in the colour of brickwork between the eastern six and the western five bays, the slight

disharmony in the window heights and the inclusion of tie bars in the west bays only, favour the suggestion that the front range was built or rebuilt over two periods. Apart from these slight architectural differences the front range follows a uniform treatment with external strip pilasters topped with simple brick capitals extending between the first floor and the eaves. The windows apertures all have yellow gauged brick segmental arched heads and yellow stone sills and retain their later C19 iron framed 'industrial' windows each with 4x3 lights and a central pivoting hopper. A departure in this styling, in the form of taller round headed arches, is used in the end gables. This window treatment was also used in the adjoining earlier red brick range to the rear. Paired modillions extend the length of the front at eaves level while a tier of loading doors rise up from first to third floor beneath the lucam. Each loading doorway has blue bull nosed jambs but have been modernised with the addition of balconettes and part glazed doors. They are positioned above one of two main entrances built side by side in the centre of the range. The eastern of the two is remarkable in that it has an ornate stone surround with a scrolled pediment and the date 1890. To the rear of the western bays is a six storey water tower, built in the same yellow brick as the front range and topped with a pyramidal slate covered roof and weather vane. Each face of the upper stage has three tall, narrow round headed arched windows with exaggerated brick keystones set below brick corbelled eaves and triangular dormers. The tower, dating to 1893, is the most visible part of an extension which also incorporates a five storey flat roofed range and a corner turret with a pyramidal roof which formerly housed elevators and grain cleaning plant. A canted single storey building with tall Georgian style arch headed windows wraps around the western end wall of the front range. It has a full height opening to the front and ornate brick detailing along the eaves. The architectural style of the building is typical of a steam engine and boiler house.

To the rear of the main range and abutted by the tower to the west is an earlier and slightly taller four storey six bay range. The slate covered roof is gable ended with brick kneelers to a gable parapet and has two large Gothick ventilators piercing the ridge. Built in red brick, (now extensively patch repaired) the uniformity of the walls are disrupted by the use of yellow brick arches to accentuate the window apertures. The windows of the lower storeys have rough brick segmental arches while those of the taller upper storey accordingly have tall round headed arches but built using gauge brickwork. These more elegant windows are repeated in the eastern end elevation and in the later front range. They appear to retain their later C19 iron framed fixed glazed 'industrial' windows.

A link from the 'tower extension' unites this complex of multi-storey multi-phase roller mills with a pair of granaries built parallel but at a short distance to the north. The southernmost of this pair is a large five storey part rendered brick, part timber-framed and weatherboarded range with a half-hipped and slate covered roof. It adjoins along its northern long wall with a slightly larger red brick 4½ storey granary with a half-hipped slate covered roof. Paired modillions are present along the eaves. An unusual weatherboarded loading gantry (1888) supported on cast-iron columns with ornate brackets and a (?later) flexible suction arm for loading barges, projects out to riverside from second floor level of its western gable end wall. Loading doors, now converted to windows, are present at first and second floor in the opposite eastern gable wall, and lie below an aperture formerly carrying a hoist beam or similar. The two lower storeys have been latterly rendered. All the windows are replacement modern casements although some of the original yellow gauge brick flat arch or round arches remain. A two storey yellow brick mill house or office range abuts its northern long wall.

The C19 brick built gate posts to the main entrance still remain adjacent to the Siege House (public house) and form a terminus for the decorative wrought iron railings that front onto East Street and extend across East Street Bridge.

Present Use: Residential/Business

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Med-High
Mill House	C18/19	Timber	Med
Mill Office	C19	Brick	Low-Med
Grain loading gantry	C19	Iron/timber	Med
Granaries	C19	Brick/Timber	Med
Engine House	C19	Brick	Med
Gate posts	C19	Brick	Low-med
Railings	C19	Iron	Low-med

ARCHAEOLOGICAL POTENTIAL

Due to the conversion of the complex of mill buildings at East Mills into apartments it seems unlikely that original internal spaces, milling technology, fixtures and fittings survive. The site does however retain archaeological interest due to the size, development and complexity of the various structures and its continuous use since the C14 as a milling site.

SITE SIGNIFICANCE

In common with the majority of the surviving C19 brick built mills in Essex it has been converted into either apartments or used for office/commercial use. However, due to its complicated structural and chronological development, its architectural treatments and historic associations, East Mill survives as one of the foremost examples of a C19 industrialised milling complex within the county. East Mill contributes greatly to the historic character of the North Hill, East Hill, St Johns Green Conservation Area and as a group of buildings, including East Street Bridge, to the street screen along East Street.

RECOMMENDED ACTION

Maintain current Grade II listed building status

MANAGEMENT

East Mill is presently in residential use and in good repair. A detailed historic building survey at RCHME level 3 should be recommended if the mill or associated buildings/structures are threatened by major works or demolition.

GRADING **/**



East Mills looking north



East Mills looking south-west

SITE NAME	Fingringhoe Tide Mill, Abberton Road		
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PARISH	Fingringhoe	DISTRICT	Colchester
NGR	TM 03001 19832	HER	15143
RIVER	Roman	EHUID	422003

CURRENT STATUS	Con. Area	No	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

25/02/1994

Former tidemill, later store. Late C18 or early C19, clad in asbestos sheeting after 1952. Only the south part of the complex is of listable quality. Timber-framed building, clad in weatherboarding now concealed under asbestos sheeting. Roof covering of slate also concealed under asbestos sheeting. Two storeys and attics. Irregular fenestration with many windows blocked in since mid C20. West elevation has been heightened. South elevation has hoist, unloading doors and wide ground floor later C20 entrance. East elevation has 5 windows. Three central windows are five-light pivoting casements, end windows are 12-pane sashes. Interior retains frame, including original rafters without ridgepiece, blocked in sash windows, original floors, chamfered beams, wall frame with diagonal braces and reused timbers include octagonal barge masts. Breast shot water wheel said to survive underneath.

JOHN BOOKERS SURVEY

06/07/1971

Three sets of buildings, the oldest astride the river, with a large brick built mill on the S side which abuts a later roller mill. Weatherboarded, formerly slated and once with two lucams, now removed. Half waterwheel, very little of other machinery remains. There are a number of difficulties with this mill; the sketch and the sale catalogue (1848) show the lucams in different positions, the sale catalogue refers to the mill as 4 storeys, which seems too high, and the larger brick mill seems to have been built for steam power but the mill was empathetically driven by water, at least until 1899, on the evidence of entries in Kellys Directories. The roller plant was working by that date. The oldest part of the present structure may date from 1732 when John Cox of West Ham (timber-merchant) was granted a building lease for a watermill on this site. The granary was added around the mid 1840s as it is mentioned as 'newly constructed' in the sale catalogue of 1848. Presently occupied by Hitchcock Ltd (Flour Millers).

Present Use: Store for adjacent modern mill

Condition: Fair

ERO SOURCES: (D/DU 691/2), (D/DU 559/94)

SITE BACKGROUND:

Records show that a tide mill driven by a breast-shot wheel was extant by c. 1400. It is known that there was a tide mill at Fingringhoe in 1531, as it is referred to in a judgement in favour of Thomas Audley which states 'the newly built by Richard Whiter and Robert Cooper, had been wrongfully alienated by the Abbot of St Johns Colchester and the College of Higham Ferrers'. The tide mill was entirely rebuilt in the C18 and by the end of that century records show that Fingringhoe Tide mill was occupied by Richard Stone and later Edward Stammers, Samuel Heath and John Royce. George Hellen took over the mill in 1848, at which point it run 5 pairs of stones with an output of 12-15 loads per week. Around 1890, the 16ft x 8 ft water wheel and particularly its iron shaft was extended by means of a claw clutch and an additional axle shaft and pit wheel (Benham, 1976). This increased its capability to drive two sets of three pairs of stones. With a good head of water it could drive four pairs and all the dressing machines, however the additional load eventually caused

the axle to fail and by 1893 a new steam roller mill, augmenting the old tide mill, was built by Messrs Chopping. One pair of stones remained in use up to the late 1920s and the waterwheel continued, powering a dynamo up until World War II, after which it was removed. In 1933 the mill was purchased by Messrs Hitchcock, a 6000 quarter silo was added and the mill converted to a provender mill for the manufacture of flaked maize and maize based products. At the same time plant for the production of Sussex ground oats was installed and 550HP of oil engines. After a fire in 1938 which destroyed the silo, the whole site plant was converted to electric power. It was rebuilt in c.1939 and a second silo added in c.1957. Grain arriving on barges via the adjacent creek was unloaded by suction plant with a capacity of 20 tons per hour and transferred via conveyor to one of 16 bins. The waterwheel in the tide mill was last used up until 1942 and the sailing barges servicing the mill continued until 1978. C. Hitchcock Ltd of Bures continued in business until 1993 and following its closure the whole complex was sold for redevelopment. At that point the site broadly comprised three buildings, the tide mill, (used as a store) covered in corrugated iron, the late C19 four storey brick and slate steam mill and a large C20 flour mill/silo. The latter has since been demolished.

A low level record of the former tide mill, carried out prior to its residential conversion in 1996, records a timber framed 2½ storey tide mill straddling the Roman River. It was built with much reused timber, clad with metal sheeting and had many C20 additions. Internally the floors were supported on wooden and cast iron columns, some mounting brackets for line shafting and sealed trap doors for sack hoists were visible. A truncated metal wheel survived in situ as did some modern grain machinery and wooden hoppers on the upper floors (Gould, 1996).

Field Survey 2008

1/02/08

The mill buildings at Fringringhoe lie at a short distance to the north of the village centre and parish church and either sit astride or perch on the southern bank of the Roman River. The site has changed significantly since its visit by H. Benham in 1976 and by S. Gould twenty years later. Only two of the three buildings mentioned remain, the large C20 grain silo/flour mill has since been demolished, while both surviving mills have been converted to residential use.

The external appearance of the former tide mill has been significantly altered following its conversion to residential use. These alterations include the removal of its utilitarian iron cladding and replacement with more traditional weatherboard, the recovering of the roof with slate, the insertion of new window apertures into both long walls and roofline, and the reinstatement of a (replica) over-sailing **lucam**, onto the northern gable. The survival of internal features, technology, fixtures and fittings is expected to be minimal. The former tide mill is a 3½ storey, timber-framed and gable ended range with a catslide roof continuing down over a later, lower extension built up to the western long elevation. All the windows and most of the apertures are modern insertions, comprising a mixture of multi-pane sashes and casements. Roof lights have been inserted into the western roof plane and three lead covered flat roof dormers, into the opposing east roof. A large fixed glazed 'picture window' of an approximate bays width sits central to the eastern elevation. This window exposes a length of heavy scantling primary braced framing whose character suggests an C18 date. Loading doors are present in both north and south gables, the northern door lies above another former loading door (now converted to a window) and below a modern over-sailing lucam on straight braces, while a single door remains at first floor in the southern wall.

Adjoining the tide mill to the south is the four-storey five-bay brick and slate steam mill of 1893. The steam mill is built in pier and panel construction with yellow brick

walls interrupted at bay intervals by red brick strip pilasters. The slate covered gable ended roof has gable parapets, large ridgeline ventilating ducts and a central weatherboarded lucam to the east front. The gable roofed lucam, serving the upper (third) floor straddles the eaves and is supported on cantilevered steel joists instead of the more common braces. The lucam lies directly above loading doors at both second and first floors. The central main entrance at ground floor and the loading door at first floor both have blue brick jambs and arches, although this treatment is not replicated in the loading doorway of the second floor, suggesting a later insertion. The mill is typical of many C19 industrial buildings in its robust build and symmetry. This symmetry is noticeable in the pattern of fenestration across both principal elevations. From the ground to second floors the windows have rough red brick segmental arch heads which contrast with the yellow brick walls while across the upper storey the window apertures adopt a flat arch with similar contrasting red brick. All of the windows are modern replica sashes. Tie bars cross the building axially at floor level and longitudinally at second floor. Strip pilasters reinforce the gable walls. In common with the tide mill it is expected that the levels of surviving technology, fixtures and fittings is low. The built remains of a timber jetty survives to the east of the steam mill and within a 'quayside or cut' opened out for lighters or barges.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Tide Mill	C18	Timber	Med-High
Steam Mill	C19	Brick	Med
Jetty	C19/C20	Timber	Low-Med

ARCHAEOLOGICAL POTENTIAL

As both the steam and tide mills have been converted for residential use, the likelihood that original internal spaces, technology, fixtures and fittings survive within either building is remote. The site does retain significant archaeological interest, particularly the survival of waterways, tide pools and a quay that once served the site.

SITE SIGNIFICANCE

Later modifications and residential conversion have impacted upon the historic and architectural significance of both buildings. Despite these alterations and due to the loss of equivalent tide mills, including examples at Battlesbridge, Stambridge, Walton, St Osyth's and Heybridge, Fingringhoe survives as an important historic mill as it is one of only two extant, broadly complete tide mills (the other Thorrington) in Essex.

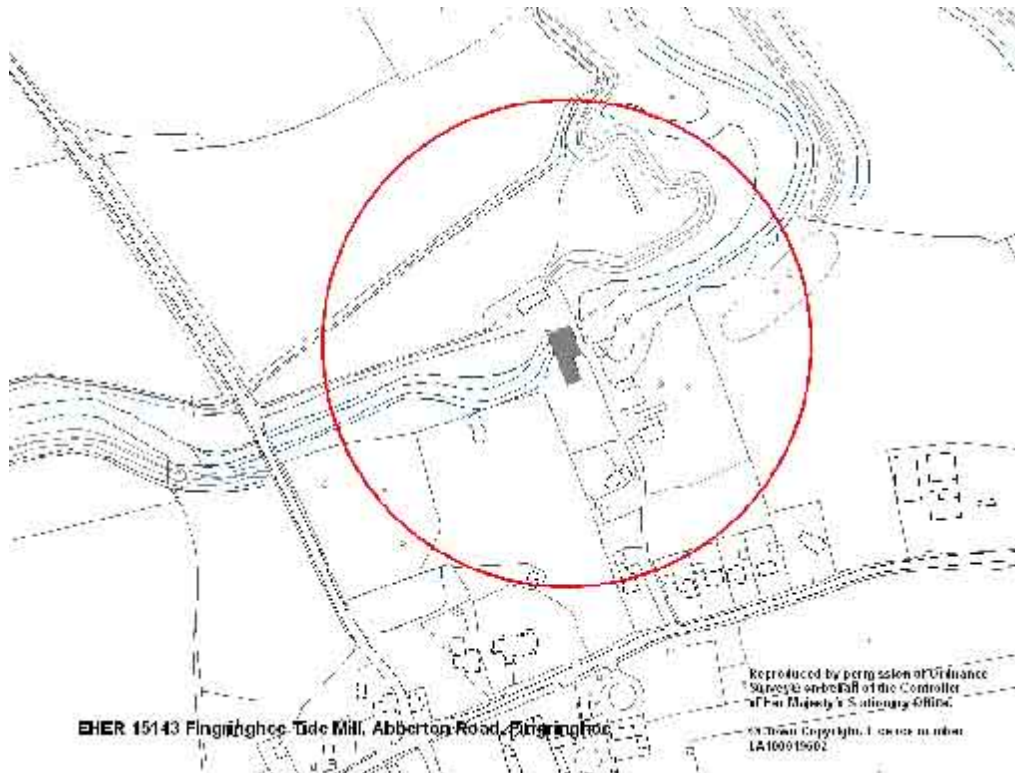
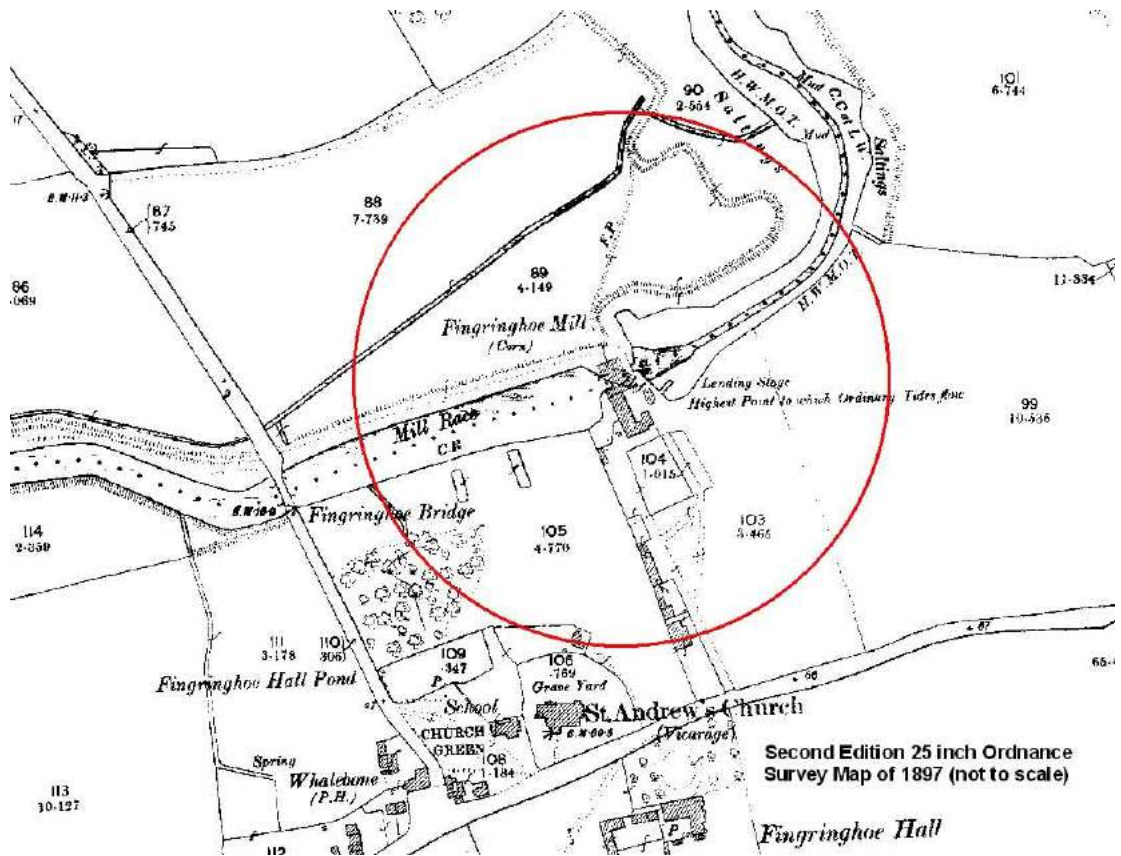
RECOMMENDED ACTION

Maintain the current Grade II listed status. This designation should also apply to the steam mill through listing by curtilage.

MANAGEMENT

Fingringhoe tide and steam mills are both presently in residential use and in good repair. A detailed historic building survey at RCHME level 3 should be recommended if either of the mills are threatened by major works or demolition.

GRADING ***



EHER 15143 Fingringhoe Tide Mill, Abberton Road, Fingringhoe



Fingringhoe Tide and Steam Mills looking east

SITE NAME	Layer Mill, Mill Lane, Layer de la Haye		
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PARISH	Layer de la Haye	DISTRICT	Colchester
NGR	TL 98074 20636	EH	32482
RIVER	Roman	EHUID	419821

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION	27/ 01/1982
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Late C18 water mill. Timber-framed and weatherboarded, with grey slate roof. Two storeys. Two window range double hung vertical sliding sashes with glazing bars. Cantilevered hoist.

JOHN BOOKERS SURVEY	05/02/1974
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C18-C19 weatherboarded watermill with tiled mansard roof: 3 storeys and hoist loft. There is a C19 mill house attached. Waterwheel has been removed

Present Use: Market garden premises

Condition: Good external condition

ERO SOURCES: (D/DBe T 21), (D/DEL T 295)

SITE BACKGROUND:

Layer Mill dates from the later C18 and was worked by John Royce in 1848 and thereafter by William Royce in 1863. It later served the mushroom farm, in which it still remains, grinding a product used for mushroom cultivation. It continued in this vein until c.1960 when the external waterwheel and all the machinery were removed and it was converted into a house. Externally the mill retains an iron belt wheel on the front where, no doubt, a steam portable engine lent a hand when the water was low (Benham, 1976).

Field Survey 2008	01/04/08
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Layer Mill is located at a short distance to the east and beyond the built up extent of Layer-de-la-Haye and sits abreast the Roman River, which gently meanders on an easterly path towards the Colne Estuary. The river widens out immediately upstream to form a mill pond which channelled water onto an external breast or low breast shot waterwheel formerly situated within a brick built wheel pit built up against the northern end of the mill. A by-pass channel, regulated by a sluice at its junction with the mill pond, skirts around the mill to the north before rejoining the river c.65m downstream. Although the waterwheel no longer remains the guillotine sluice mechanism that finely controlled the flow to the wheel, remains in use to this day.

Layer appears to be a typical example of a C18 timber framed country watermill. It is a 3 storey weatherboarded mill with a Mansard Roof and gables facing north and south. An in-line two storey brick mill house extends to the south while an open-sided pitched roofed shelter covering the wheel pit, is situated between the northern end wall and a later mono-pitched weatherboarded outbuilding. An C18/early C19 ?stable range/outbuilding lies at a short distance to the north, between the river and by-pass while further to the north and east lie a regiment of prefabricated/lightweight sheds used for the cultivation of mushrooms. The watermill dominates the surrounding buildings and is typically a white washed weatherboarded mill with a central lucam projecting from above the eaves line to the front. The **lucam** is weatherboarded with a gabled, tiled roof. It is cantilevered from an internal catwalk or gantry, projects out above the upper purlin and is supported from below by straight braces rising up from the top plate. The roof was originally covered in plain tiles, there use clearly seen on

the upper roof plains, but the lower roofs to front and rear have both been repaired and partially re-covered using slate. This change in roofing materials was probably carried out some time ago as the entire roof, tiles and slates have since been painted with a commercial waterproof paint, suggesting failure of the roof. The lucam is sited above a taking-in doorway, with a vertically battened door at first floor level. It sits central to a pair of C19 and later windows, one multi-light casement the other a similarly styled sash. The windows throughout the building follow this treatment and are predominantly modern. According to Benham the mill retains an iron belt wheel, sited on the external wall adjacent to the wheel pit, used to supplement power to the stones using a steam portable engine, when the water was low. Alternatively the wheel, which lacks a recess for a belt and is arguably too large (in diameter) for such purpose, may have been used to open and close the shut to the waterwheel and not an external drive. The mill is now in residential use and although needing some remedial treatments to the exterior, particularly the roof, it remains in a fair condition. No internal access

The adjoining mill house has a plain tile gable ended roof, has modern windows and a number of C19 and later brick accretions. A pair of rendered 1½ storey brick built mill cottages lie at a short distance to the south of the mill.

Present Use: Residential within Mushroom Farm
Condition: Fair

ARCHAEOLOGICAL POTENTIAL

The loss of the external waterwheel and as a result of its conversion to residential use few significant examples of technology, fixtures or fittings are expected to survive.

SITE SIGNIFICANCE

Layer mill is typical of an C18 weatherboarded Essex mill built characteristically with a Mansard roof and the regionally distinct lucam. The loss of its internal technology, waterwheel and general renovations associated with reuse have impacted upon the historic and architectural significance of the mill, although it still retains group value with the outbuildings, mill house, cottages and watercourses that still occupy the site.

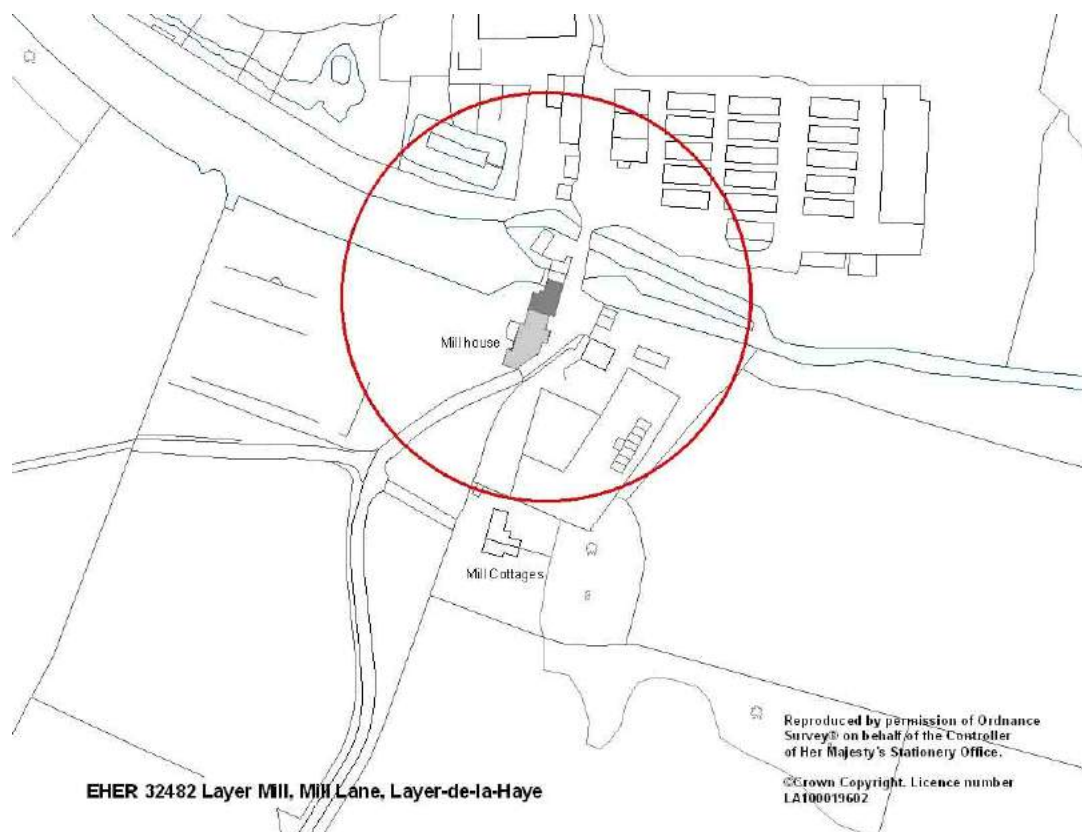
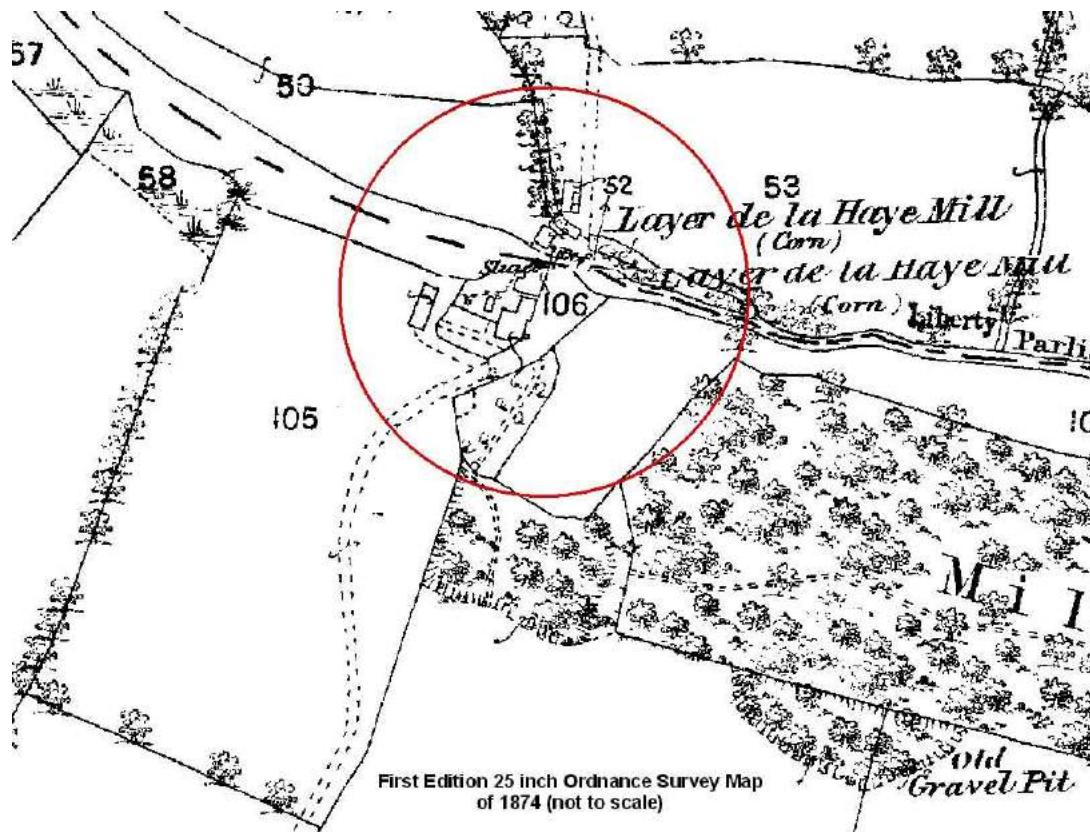
RECOMMENDED ACTION

Maintain the current level of listed designation. Although the building appears, at present, to be weathertight, the roof will undoubtedly require some attention in the near future.

MANAGEMENT

Layer Mill and the adjacent buildings are presently in residence/office use and are maintained. Should the opportunity present itself an internal inspection and/or historic building survey at RCHME level 3 is recommended if the watermill (or the site as a whole) become threatened by redevelopment, significant alteration or demolition.

GRADING **/**



EHER 32482 Laver Mill, Mill Lane, Laver-de-la-Haye



Layer Mill and Mill House looking north

SITE NAME Wakes Colne Mill, Colchester Road

PARISH Wakes Colne **DISTRICT** Colchester

NGR TL 89216 28398 **EH** 32728
RIVER Colne **EHUID** 421206

CURRENT STATUS **Con. Area** Yes **Listed Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

27/01/1982

Wakes Colne Mill and House. Watermill circa 1840, brick walls in Flemish bond, 3 storeys and range of 4 windows, doors centrally on first and second floors with jettied sack-hoist over. Roof hipped and gambrelled, slate clad with lead flashings. Windows all 6-pane fixed. Half doors central to ground storey. Inside 3 pairs of millstones underdriven mounted on a hearse. Two storey ranges to south and east. Two storey gault brick office or house on north-east corner circa 1820, two window range of marginally glazed sashes at first floor, angled bay window below.

SITE BACKGROUND:

The mill dates from c.1850 (the earliest date for the Colchester pattern tie plates) and exemplifies the ingenuity which flowered as part of the Great Exhibition of 1851. Christopher Farrow worked both a corn and oil mill at Wakes Colne in 1848. By 1853 he was succeeded by George Clark Baker and in 1878 by J. Green (who also managed Ford Street mill). In about 1891 Robert Brooks took over as manager of the mill for E.M. Johnson. William Ashby bought the mill from Brooks, followed by his sons Arthur and Harry Ashby, who ran the mill, producing flour by waterpower up until about 1945. After the war they reverted to electric grinders due to the decreasing flour trade but latterly concentrated on the coal merchant side of the family business.

Following a visit by Benham during the early 1970s Wakes Colne Mill is described as a three storey brick and slated corn mill flanked on one side by a disused oil mill and the other by the mill house. The oil mill retains the pit wheel wallower and instead of a spur wheel and stone nuts the vertical shaft drove a single overhead shaft. As the oil trade had almost certainly finished by 1894-1900, the edge runner stones and kettle were removed and latterly (c.1960) so was the iron waterwheel. The corn mill latterly grinding by electricity, retains an iron waterwheel (20 x 10 ft) with toothed rim engaging a 3ft pinion wheel. This set up was not uncommon generally in the mid C19 but was unusual in rural Essex. Its repair using a pattern held by Hunts (Atlas Works) of Earls Colne suggests they may have originally engineered the wheel. The pinion drove horizontal shafting carrying 5 pit wheels, each engaging overhead pinions and working one pair of stones, in a layout known as a 'counterdrive'. Two pairs of the five stones with pit wheels, have been removed but three examples with iron gears, wood cogging remain. There is a centrifugal governor beside each pit wheel but only two tender the three remaining stones, the third working a speed indicator. The stones were fed by a system known as Fairburns 'silent feed' which was common in larger mills but no so in smaller country mills. This also incorporated a conveyor along the line of stones which took the meal to an elevator and up to a bolter (Benham, 1976).

Field Survey 2008

25/01/08

Wakes Colne Mill lies to the south of the Colchester Road and west of Chappel Bridge. It sits astride the river Colne which appears to have been straightened

(upstream) and in parts embanked for a length of c.500m. The mill tail continues on the E-W line of the straightened watercourse, to rejoin the river Colne to the east. The mill pool or bypass, fed by a sluice immediately west of the mill, skirts around the mill to the south.

The present site comprises a number of historic structures dating from the earlier C19. The mill is now in residential use and is a 3½ storey brick built five bay building with a slate covered hipped Mansard roof. A perpendicular set gault brick two storey mill house with a slate covered roof, built flush with the façade, abuts the mill to the north. The front bays of the mill house in turn front an in-line ?earlier brick built 2½ storey range with a plain tile roof, which continues to the rear (west). The remains of the former red brick oil mill, since converted to residential use, abuts the mills southern end wall, while a two-storey brick built granary (also residential), in turn abuts the former oil mill to the south. A detached brick built stable block, now used as a store, lies to the north and west of the mill.

Unusually the brickwork of the mill changes in bond from Flemish bond across the lower storeys to English bond above the heads of the first floor windows to the eaves. This change could be symptomatic of a rebuilding/strengthening of the upper floors of the mill. All the apertures have segmental rough brick heads and the windows, where original, have stone sills. An off-centre (south) weatherboarded, slated and gable ended lucam projects to the front (east) from above purlin level. It is supported on a pair of curved timber braces springing from wall plate level and is positioned over taking-in doors that remain at first and second floors. The main entrance into the mill is also off-centre and biased to the north. All the windows of the façade retain their original metal framed fixed glazed frames, although the glazing has been replaced using modern (toughened) glass. Original metal framed windows are present at ground floor only in the rear elevation, with those of the first and second floors comprising replica timber sashes. Two of the rear first floor window apertures were inserted when the mill was converted to residential. They can be recognised by the use of timber sills instead of stone. An off-centre taking-in door survives at first floor and above a line of tie bar bosses, suggesting the strengthening of the stone floor to cope with the bank of five in-line-stones. A blocked bearing box in the rear elevation at first floor suggests the provision of a steam drive to the stones. A steam engine and later portable engine was situated within the adjacent oil mill. A wide shallow arch spanning the southern bays of the rear elevation opens into the wheel pit. This still retains the original iron breast shot waterwheel built or inserted, according to graffiti on the wheel in 1850. The iron wheel turned clock-wise (back) and retains its metal buckets, sole boards and pen trough, but has latterly suffered from corrosion and due to subsidence in one of the bearings now interferes with the wall of the wheel pit.

Most of the milling apparatus, fixtures and fittings were removed when the mill was converted, although it still retains the bank of three stones mentioned in the list description (pers. comm.) and of course the water wheel. All the gearing has also been removed from the former oil mill and the building survives in a partly derelict and partially rebuilt state as a residence. Four or two pairs of edge runner stones from the oil mill have been incorporated into the surrounding gardens as landscape features and although the original external waterwheel to the oil mill was removed in c.1960, the brick wheel pit and brick arch for the axle shaft remains. This is situated to the rear (W) of the mill and adjacent (parallel with) the by-pass sluice. The original rack and pinion winding gear for the sluice is still in working order and operates a pair of gates draining from the mill leat to the lower mill pond situated to the south and east.

Part of the present site remains to this day in use as a coal merchants and is still owned and operated by the Ashby family.

Current use: Residential

Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Corn Mill	Mid C19	Brick	Med-High
Mill house	C19 & ? earlier	Brick	Med-High
Oil Mill	C19	Brick	Med
Stable Block	C19	Brick	Med
Granary	C19	Brick	Med
Sluice	C19-20	Iron	Med

ARCHAEOLOGICAL POTENTIAL

Following the conversion of the mill buildings and granary at Wakes Colne Mill to residential use much of their original internal spaces, technology, fixtures and fittings have been removed. This is certainly the case for the oil mill and granary, although the corn mill still retains parts of its innovative mid C19 mill gearing. As a whole, the site incorporating the remains of an oil mill and an industrialised corn mill retain significant archaeological interest.

SITE SIGNIFICANCE

Few equivalent examples of a purpose-built highly innovative and industrialised watermill were built or survive in Essex and as such Wakes Colne Mill survives as one of the most important C19 watermills in the county. Although compromised by subsequent alterations, the corn mill still retains the majority of its original 'counterdrive' mechanism and an unusual waterwheel arrangement. The mill has group value with a number of contemporary mill and farm buildings and continues to make a positive contribution toward the historic character of the Conservation Area.

RECOMMENDED ACTION

Its Grade II listing should be maintained.

MANAGEMENT

The majority of the buildings at the Wakes Colne Mill site are presently in residential use and in good repair. A detailed historic building survey at RCHME level 3 should be recommended if the mill is threatened by major works or demolition.

GRADING ***



**Wakes Colne Mill
looking west**



**Edge runner mill stones
from the former oil mill**

EPPING DISTRICT

EHER	Site Name	Grade
Watermills		
32981	Fyfield Mill, Queen Street, Fyfield	***/*
33349	Littlebury Mill, Off Romford Road, Stanford Rivers	**/*
34059	Passingford Mill, Ongar Bridge, Stapleford Tawney	***
33639	Roydon Mill, Roydon	*/**
Gunpowder Mills		
34148-51	Waltham Abbey Gunpowder Mill (D,F & G)	***/*
34150	Waltham Abbey Gunpowder Mill (E)	***/*
34152	Waltham Abbey Gunpowder Mill (C)	****
3450	Waltham Abbey Gunpowder Pump and Press House	***/*



SITE NAME	Fyfield Mill, Queen Street		
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PARISH	Fyfield	DISTRICT	Epping Forest
NGR	TL 57158 06614	HER	32981
RIVER	Roding	EHUID	118375

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

29/06/1984

Watermill. Early C19, timber framed and weatherboarded, with grey slate roof. Original and C20 small paned casements, under wooden pediments. Two pairs of half doors. Single storey extension to east end. Red brick footings. Part of the machinery survives in-situ.

JOHN BOOKERS SURVEY

16/04/1970

Early C19 watermill, weatherboarded with a slated roof. The mill house has been modernised. The mill was still in use until quite recently but regular milling has said to have ceased in c.1945. Two pairs of iron turbines are said to have been preserved and are in working order. This is believed to be one of the smallest watermills in the country

Present Use: Part of private residence: disused

Condition: Good

ERO SOURCES: (D/DA T 56)

SITE BACKGROUND:

Fyfield mill was built in the late C18 and in common with many Essex watermills was re-gearred and renovated in the later part of the C19. The mill continued producing flour up until the 1932 but stopped altogether by 1942. After the mill closed it quickly fell into dis-repair and was on the verge of demolition when it was purchased in the 1960s and sympathetically restored to its present working condition (pers comm.)

Field Survey 2007

24/05/07

A timber-framed and weatherboarded 2½ storey watermill, built over three equal bays with a slate covered roof and gable ends to the NW-SE. Built onto a red brick plinth, a weatherboarded lean-to, formerly accommodating the original undershot waterwheel, abuts the northern bays to the NE. The waterwheel was replaced in 1890 by the present undershot twin turbine by J.J. Armfield of Ringwood, Hants. This event is recorded as graffiti on a glass pane in a first floor window. The windows are all original and were built to an unusual design, each capped with a timber triangular pediment. This distinctive style of window was fashionable at the time as they were designed to commemorate Nelsons victory at Waterloo. Otherwise the windows are standard 3x4 pane casements. A steam engine house was located to the NW of the mill but has since been demolished, however, the take off pulley can still be seen on the external SW wall of the northern bay. Internally the softwood timber-frame appears mainly unaltered and the mill still retains its straight flights although the timber floors have been replaced.

Fyfield mill still retains the only working turbine in the east of England (pers comm.). The entire gearing has been repaired and conserved by the owners working with the County millwright. At present it is capable of driving one of the two surviving sets of stones. As would be expected the cast-iron gearing, pulleys, **hursting** and associated mechanics of a functioning mill remain at ground floor. There are two pairs of **millstones** on the first floor, the western set are **underdriven** and retain their

complete furniture, while the eastern stones, although in place are at present incomplete. The auxiliary belt drive which also powers the **sack hoist** lies to the east of the stones and the sack trap lies central to the floor and within the middle bay. The presence of sack chutes suggest the grain bins still survive in the attic storey. Various other pieces of equipment, machinery and milling paraphernalia collected by the owners are on display for visitors during mill open days. Directly north of the mill is the sluice gate which controls water-flow to the original stretch of the Roding by-passing the mill to the east. The sluice is operated either manually by winch or alternatively the central gate can be raised using hydraulics. To the west of the mill is an extensively altered timber framed 2 storey mill house with plain tile half-hipped roofs. It appears to incorporate C19 outbuildings to the south but has little historic significance apart from its group value with the mill.

Present Use: Restored and periodically open to the public

Condition: Very Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Watermill	Later C18	Timber	High
Mill house	C18-19	Timber	Low
Sluice	C19/20	Iron	Low-Med

ARCHAEOLOGICAL POTENTIAL

An important mill which has survived relatively unaltered. It still retains its spatial integrity, many original fixtures, fittings and much of its technology including a fully restored and working turbine

SITE SIGNIFICANCE

An very good example of a well maintained and lovingly restored watermill that boasts many unusual and now rare attributes including the unusual use of an undershot turbine, its continued survival as one of the smallest mills in the region and the restoration and maintenance of the only working turbine in the East of England. Additionally it remains one of an increasingly small number of watermills that have not been subjected to residential/office conversion and one of only three that remain in an operational condition. Fyfield Mill is one of the most important surviving mills in Essex.

RECOMMENDED ACTION

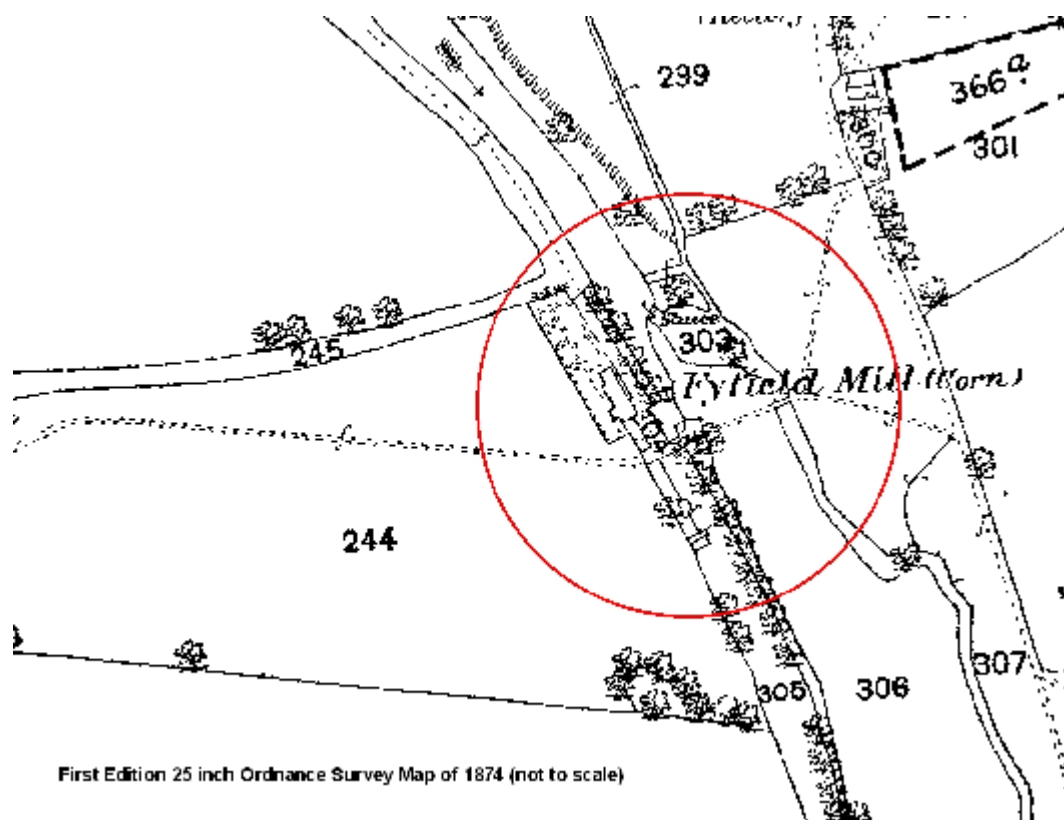
Increase its statutory listing from Grade II to II* to fully protect one of the few working watermills that remain in the region.

MANAGEMENT

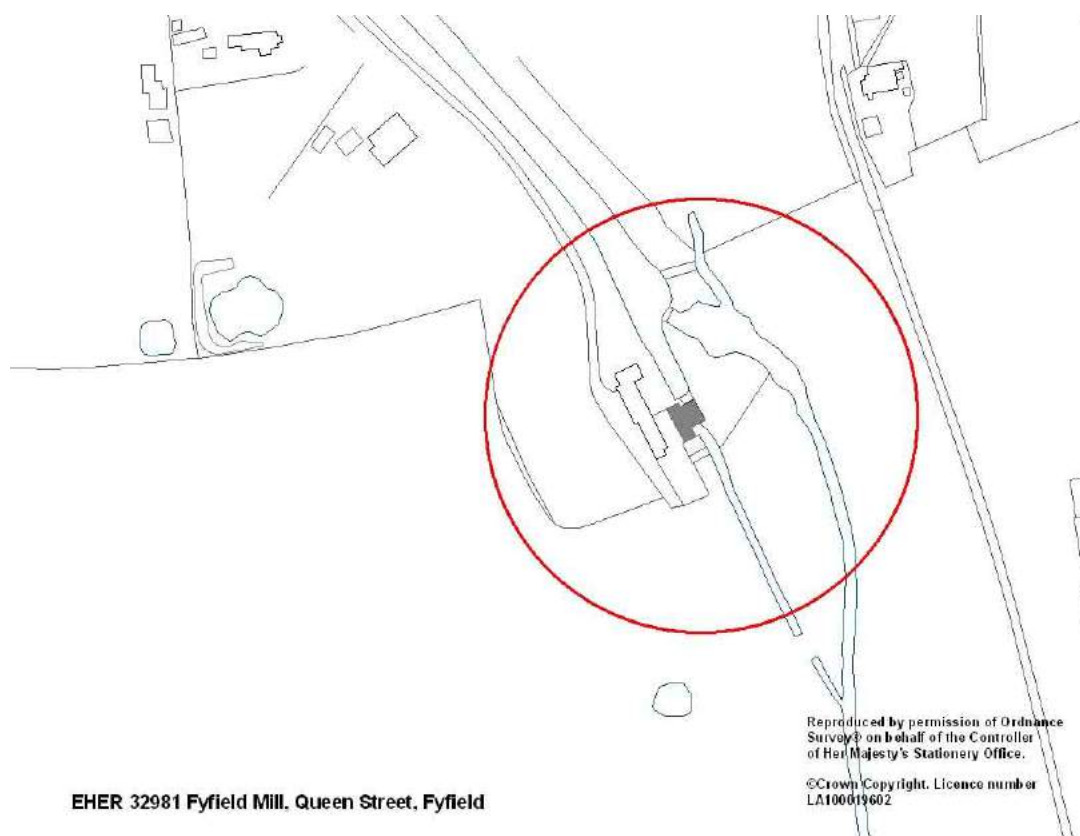
Fyfield Mill is a rarity. It has not been converted to residential use but has been lovingly restored by its owner and is periodically opened as a visitor attraction on mill open days. Given the significance of the mill, future proposals to convert to residential use should be discouraged. If the mill becomes threatened by alteration, major works or demolition, its significance should first be considered by an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features, followed by a detailed historic building survey at RCHME level 3 or 4.

GRADING

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First Edition 25 inch Ordnance Survey Map of 1874 (not to scale)



EHER 32981 Fyfield Mill, Queen Street, Fyfield

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**Fyfield Mill looking
south-south-east**



**Fyfield Mill
Stone Floor**

SITE NAME	Littlebury Mill, Off Romford Road		
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PARISH	Stanford Rivers	DISTRICT	Epping Forest
NGR	TL 55108 01004	EH	33349
RIVER	Roding	EHUID	117917

CURRENT STATUS	Con. Area	No	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION	11/04/1989
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Mill. Originally a watermill (c1840) later converted to Steam and Electricity. No longer working. Mainly timber framed and weatherboarded with brick base. Gabled grey slate roof with central weatherboarded lucam. 2 window range of small paned vertical sliding sashes, the ground floor with segmental heads. Central, 2 part doors to ground and first floors. Much of the original machinery remains including the wheels, the wheel house, bins and stones, but not in good condition.

JOHN BOOKERS SURVEY	28/09/1971
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Early C19 weatherboarded mill with brick base, 3 storeys and hoist loft, slated roof. The mill house separated. According to the ministry list the mill changed from water to electric power in 1946 and was working at the date the list was prepared (1960).

Present Use: Part of farm

Condition: Quite good

ERO SOURCES: (D/Dc T 37), (T/P 83/2)

SITE DESCRIPTION:

The mill lies within a small group of multi-period buildings to the south of the working farm and at a short distance from the derelict Grade II* Littlebury Farmhouse (entered on the Essex Historic Buildings at Risk Register in 1992). It lies immediately south of a concrete silo base, a small C18 timber framed granary and a modern faux stable building. To the west is a C18/C19 barn and abutting its southern elevation a large modern concrete and steel framed shed. The mill was latterly electrically powered and used to prepare cattle food for the Littlebury Hall Farm dairy herd.

Field Survey 2007	24/05/07
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Littlebury mill is a part brick, part timber 3½ storey weatherboarded and timber framed mill with a slate covered gabled ended roof built with an over-sailing lucam projecting from its western gable end. The remains of a collapsed wheel house abuts its eastern wall and is set astride a culvert formerly fed by the mill race to the south and east of the mill. The mill comprises a brick built ground floor supporting an intact pine primary braced timber-frame and roof structure. The distribution of apertures is relatively symmetrical throughout the mill with windows flanking the entrance and taking-in door of the principal western elevation and spaced evenly across the long walls. The windows of the brick-built ground floor are set into segmental headed arches and retain their original 4x3 pane vertical sliding sashes. This is predominantly the case throughout the mill. The mill is no longer completely weathertight as areas of feather-edge boarding are missing and some slates along the rear pitch have been dislodged through contact with an adjacent tree.

Internally the mill still retains much of its spatial integrity and some of its gearing and milling apparatus. Within the collapsed (since 1989) and roofless rear wheel/engine house the main components of the mill gearing, such as the turbine, wallower/crown wheel, horizontal drive shaft and take off pulleys all remain, although in disrepair. At

ground floor the hursting and gearing to the stones have been completely removed, while a pair of c.1950s grain elevators, presumably replacing or working with the sack hoist, have been inserted into the central bays. The straight flights to both the first and second floors are intact as are the majority of the original floor boards and joists. A selection of farm machinery including a late Victorian flour screen is stored at ground floor. A single set of millstones with some furniture remains in situ within the easternmost bay on the first (stone) floor. Immediately S of the stones is an auxiliary drive shaft and pulley which originally powered the sack hoist bollard. The second (bin) floor mainly comprised grain bins built using timber partitioning. A flight from the second floor led up to a central raised loading gantry running axially E-W from the lucam. The roof structure appears to remain relatively complete and has recently been repaired using a Seletex membrane.

The mill is suffering from many small problems but is mainly dry and currently not at immediate risk of significant damage. However some maintenance works are needed if the building is to remain completely weathertight, the most important the cutting back of an encroaching tree which is damaging the roof and the repair of the weatherboarding and broken windows. The mill race is now completely dry but could conceivably be engineered back to life.

Present Use: Redundant

Condition: Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Early C19	Timber	Med-High
Granary	C18	Timber	Med-High
Barn	C19	Timber	Med-Low
Stables	C21	Brick	None
Farmhouse	C14/15	Timber	High

ARCHAEOLOGICAL POTENTIAL

An interesting semi-derelict mill which has remained relatively unaltered within an active farm site. It still retains many original features and elements of its technological and spatial integrity. Of particular interest are the derelict but unaltered remains of the turbine and stone drive.

SITE SIGNIFICANCE

Unusual survival of a small mid C19 country watermill mill that has not been significantly altered through residential or commercial re-use and remains without unsympathetic accretions. Littlebury shares group value with the adjacent farm buildings, the derelict Grade II* farmhouse and is one of only six, including Hylands, Belchamp, Townsford, Thorrington & Hallingbury extant C19 fully timber framed water mills to survive in Essex .

RECOMMENDED ACTION

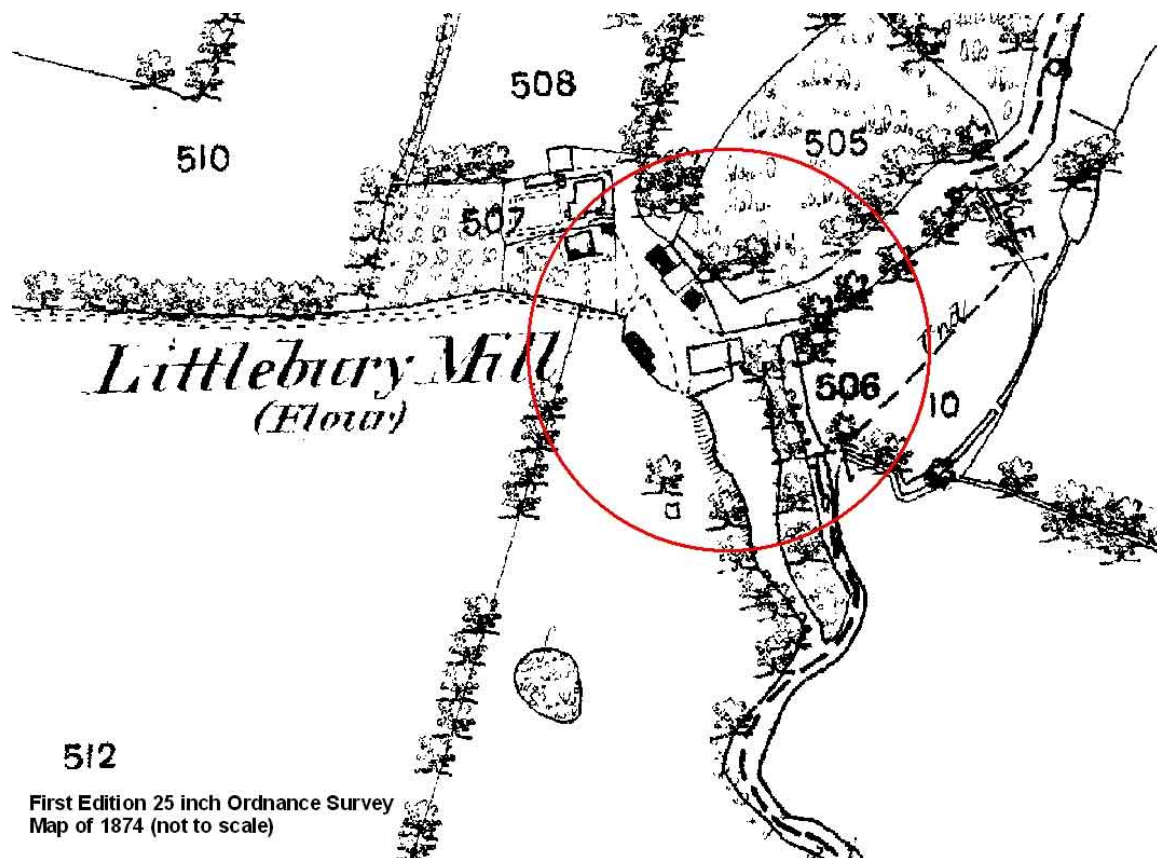
Maintain present level of Grade II listed building status

MANAGEMENT

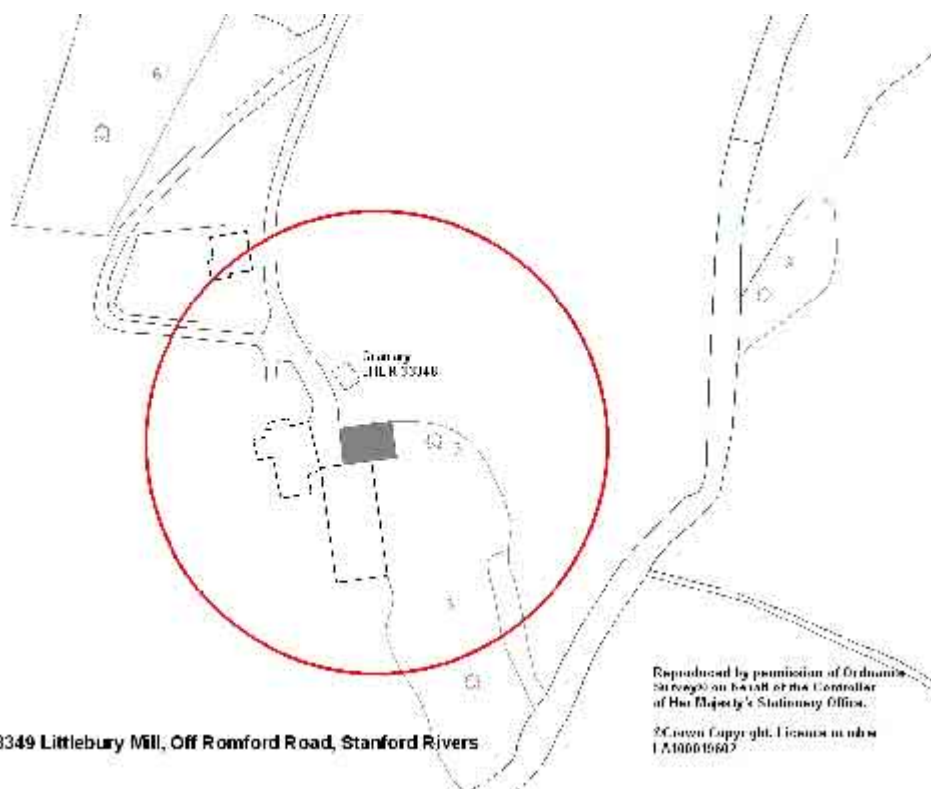
As the owner intends to submit a planning application to convert the mill to residential use, an historic building impact assessment should be attached to any future application. The recording and investigation of the turbine and the gearing to the stones could form an area of important archaeological research.

GRADING

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First Edition 25 inch Ordnance Survey
Map of 1874 (not to scale)



EHEN 33349 Littlebury Mill, Off Romford Road, Stanford Rivers

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Littlebury Mill looking south-east



**Littlebury Mill Millstone
and auxiliary drive mechanism**

SITE NAME Passingford Bridge Mill, Ongar Road			
PARISH	Stapleford Tawney	DISTRICT	Epping Forest
NGR	TQ 50140 97440	EHHER	34059
RIVER	Roding	EHUID	118693
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR 2006

STATUTORY LIST DESCRIPTION

27/08/1952

Water mill, C18. Timber framed, weatherboarded, roofed with handmade red clay tiles. Aligned approx. N-S on S bank of River Roding, with brick wheel-housing at N end. 3 storeys with attics. All windows are C18 and C19 casements. Original hoist mechanism inside. Converted to turbine operation in early C20, with stationary engine in brick building to N of wheel-housing, installed in 1930s. Still in use at time of survey (1983).

JOHN BOOKERS SURVEY

06/11/1969

This is a small but interesting mill-one of the very few that is still capable of working (by turbine). It appears to be a late C18 building; among various inscriptions within is 'Zack Tuck 1760' which is believed to be the name of the first miller and date of construction. A new water/corn mill was on this site by 1779, in place of two earlier mills and a windmill. The present building is weatherboarded with a tiled roof, 3 storeys and a hoist loft. It was worked by steam power but the principal feature is the turbine, reportedly installed in 1931 in place of a waterwheel. There are two mill houses the earlier dated 1635.

Present Use: milling

Condition: Quite good

ERO SOURCES: (D/DSd T9), (T/Z 81)

FIELD SURVEY 2007

04/06/07

A later C18 three storey timber-framed and weather-boarded flour mill with gable ends to the N and S and a plain tiled roof. The main mill is built over 4 or 5 bays with a two storey lean-to abutting the southern (roadside) end, a single storey lean-to to riverside (north) and a small 2 bay lean-to central to the western elevation. There is a 4:4:3 window range along the eastern elevation and a 2 window range in the opposite western wall. The windows are a mixture of styles, sizes and periods but are mainly C19 and C20 replacements. A taking in door is present at first floor level in the roadside lean-to. No lucam. The roofs and particularly the main roof have been patch repaired quite recently but still require more localised attention. The weatherboarding is modern (C20) softwood feather-edge boarding which has been extensively repaired and patched over in recent years but still requires further repair to cover exposed timber framing. Deformation central to the western long wall at eaves level and within the roof suggests movement within the frame probably caused by structural failure or subsidence. The mill is clearly not weathertight and should remain on the Essex Buildings at Risk Register.

A C19 mill house lies to the east of the mill and a complex of out-buildings lie directly to the west. The C18 grade II listed Olde Mill House (EHHER 34057), predating the mill house/cottage directly adjacent to Passingford mill, lies c.200m to the west. A modern cranked weir and sluice gate feeds into the original water course which bypasses the mill site to the north. No internal access to the mill was gained.

Present Use: Redundant
Condition: Poor and deteriorating

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Later C18	Timber	Med-High
Mill house	C19	Brick	Low
Outbuildings	C19	Timber	Low
Olde Mill House	C18	Timber	Med

ARCHAEOLOGICAL POTENTIAL

Passingford Mill remains an unknown quantity, as it may still retain the turbine and internal hoist mechanism mentioned in the listing and elements of its internal gearing, fixtures and fittings.

SITE SIGNIFICANCE

A small free standing later C18 watermill, altered in the early C20 to operate on turbine and steam power and reportedly (in 1969) still potentially capable of working. It is presently disused and is one of a small number of watermills in Essex that have not been compromised through residential or commercial re-use. To an extent its significance will depend upon the levels at which its internal spatial integrity and machinery survives.

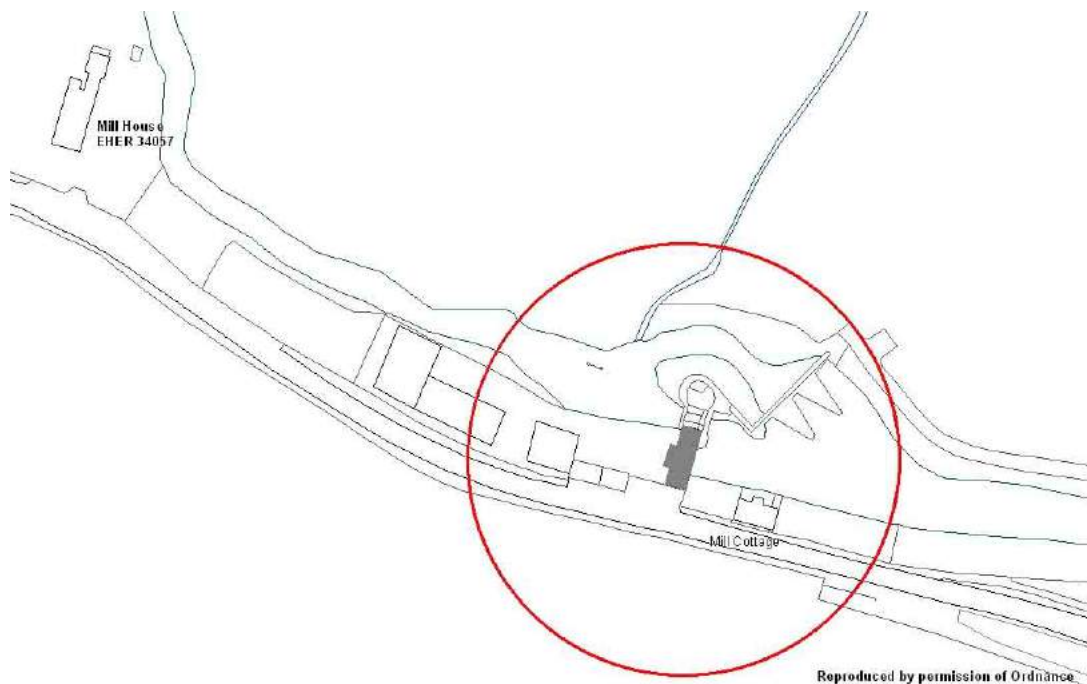
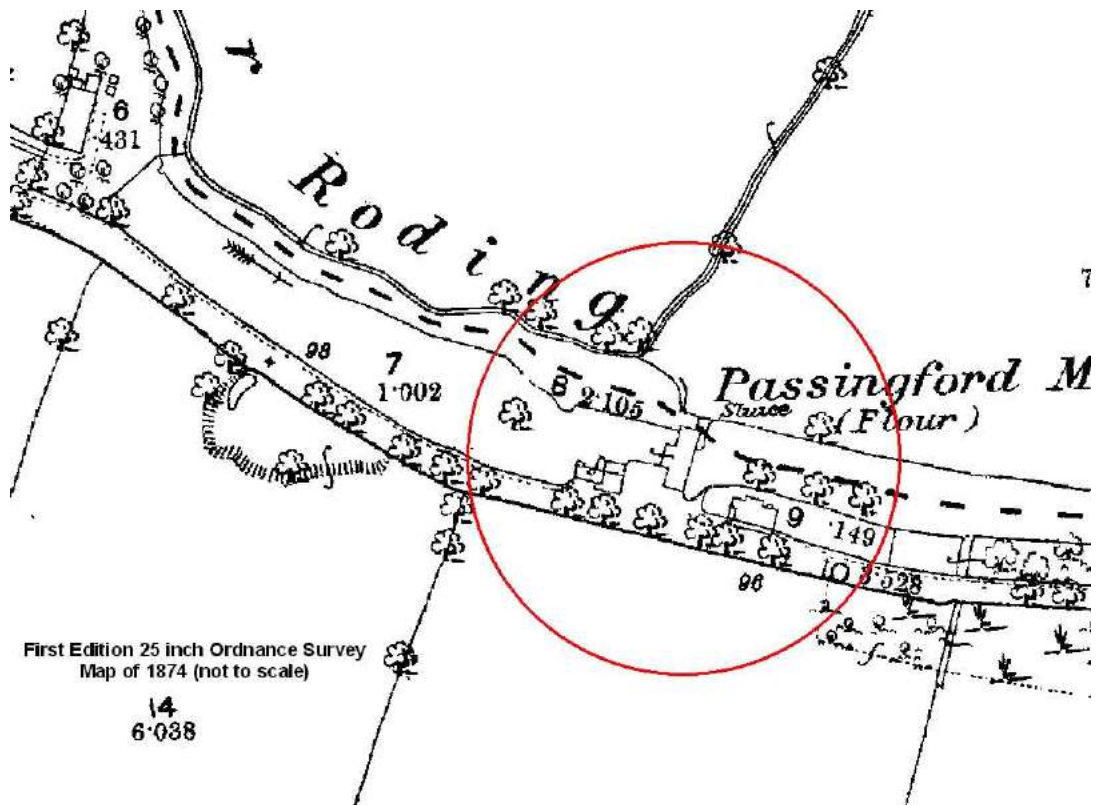
RECOMMENDED ACTION

Maintain its present listed building status. In its present condition it should remain on the Buildings at Risk Register as urgent repairs are needed to prevent water ingress and counter movement in the timber frame. A Repairs Notice should be considered by the District Council.

MANAGEMENT

Given the opportunity an internal inspection to assess levels and significance of internal fittings fixtures and technologies should be carried out, while an impact assessment should form part of the preliminary stages of any future planning proposals affecting the integrity of the mill.

GRADING ***



EHER 34059 Passingford Bridge Mill, Ongar Road, Stapleford Tawney

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Passingford Mill looking north-west

SITE NAME Roydon Mill			
PARISH	Roydon	DISTRICT	Epping Forest
NGR	TL 40256 10258	EHHER	33639
RIVER	Stort	EHUID	118772
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

6/12/1979

Watermill. Early C19 with yellow stock brick to ground and first floor, timber framed and weatherboarded above. Grey slate roof. 3 storeys. 4 window range, fixed iron windows with glazing bars and small opening lights. Windows to lower floors have segmental heads. At the south end there are boarded loft doors and a projecting loft hoist supported on curved braces.

FIELD SURVEY 2007

25/06/07

Roydon Mill is an early C19, 3½ storey, c.8 bay, half brick, half timbered former watermill with a double pile Mansard roof. It has been converted to residential use and now comprises 9 individual apartments. During these works the timber framing of the upper storey (2nd floor) was replaced with block-work, new window joinery was added and the roof was rebuilt and re-profiled to the north and rear with the addition of a second Mansard, replacing a rear flat roof. The turbine and all internal gearing, fixtures and fittings were removed during these works. The wheel pit and culverting remain below the southernmost bay but river water is now channelled through a modern pipe to the mill tail.

The ground and first floor is built in yellow stock brick while the upper storey and gable ends are clad in weatherboard. A weatherboarded and gabled ended **lucam**, supported on curving brackets, projects out from the southern bay at eaves level. Below is a taking in door (now partly blocked) on first floor and a blocked brick arch at ground floor which formerly opened into the wheel pit. The canopy of another hoist survives in the penultimate northern bay and sits above a taking-in door (now blocked) on the first floor. The lower window openings all have rough brick segmental arched heads (two on-edge courses) and brick sills. The window joinery is uniform, comprising modern nine light casements on a vertical central pivot. Plain tie bar bosses at first floor level suggest additional loading and storage on this level. Roof lights have been inserted into the slate covered roofs.

To the south is a detached mill house. It dates to the C19, is timber framed and built over two storeys with a hipped slate roof. All the original windows have been replaced with modern UPVC double glazed units and a modern porch has been added to the front. To the SE is a yellow brick and slated C19 outbuilding which once formed part of the group but is now owned by Waterways. East of the mill and crossing the Stort Navigation is a wrought iron beam bridge with brick revetment walls, stone jambs and wrought iron railings. It bears a plaque dated 1880 which reads 'The Lee Conservancy', (Act of 1868) 5 Ton Limit, S.R Hobday General Manager.

Condition: Good Order

Use: Residential

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Watermill	Early C19	Brick/Timber	Med
Mill House	C19	Timber	Low
Outbuilding	C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of building works associated with the mills conversion into apartments, no significant technology, fixtures or fittings survive.

SITE SIGNIFICANCE

An early C19 'industrialised' watermill whose historic and architectural significance has been severely impacted by its conversion into apartments. The mills standing is not considerably increased by group value with the neighbouring structures but in a wider context it does share some group value with the few remaining extant watermills along the Stort (Little Hallingbury & Parndon Mills) and architectural similarities with the latter.

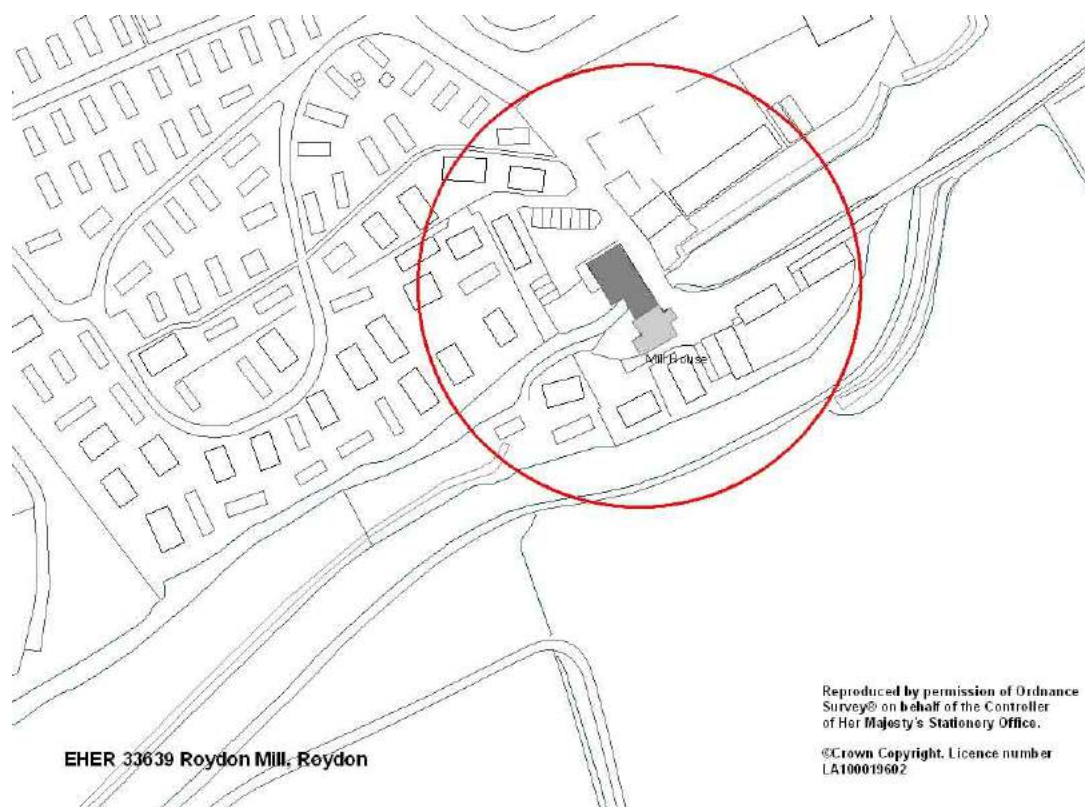
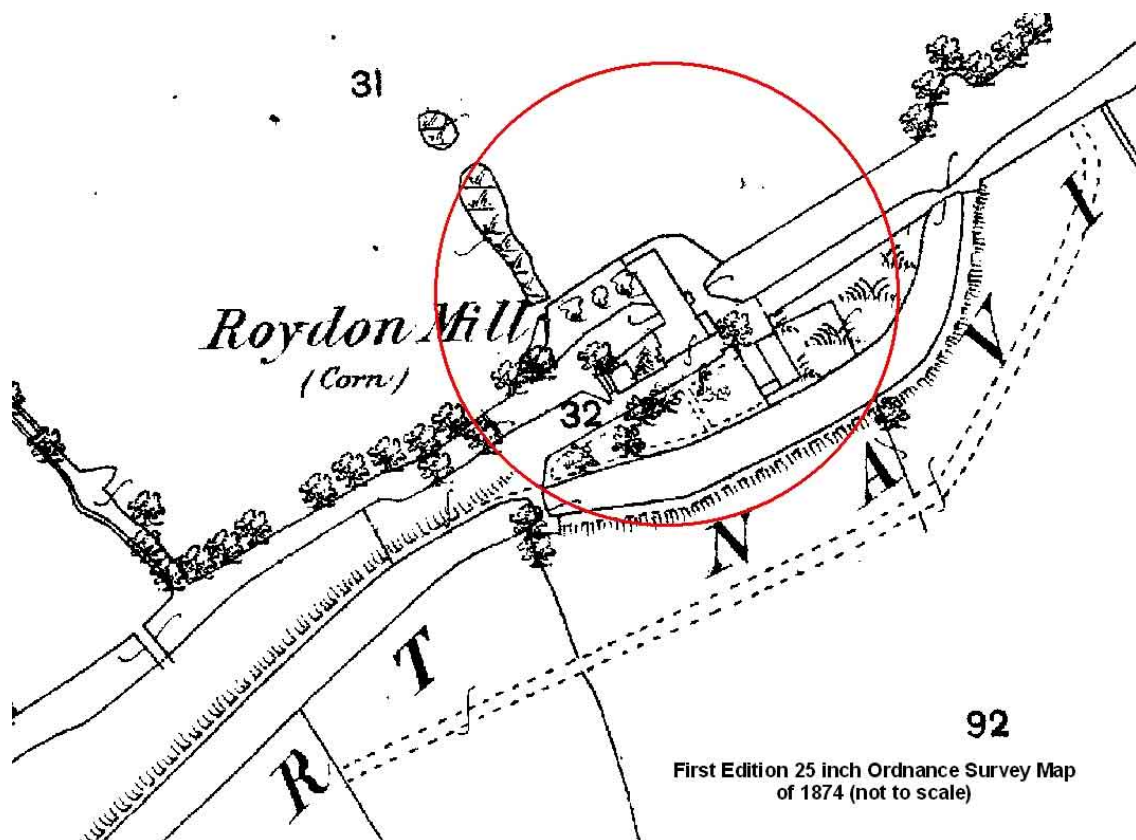
RECOMMENDED ACTION

A much altered mill whose listed building status could be questioned. However to protect the mill from unsympathetic change or even demolition, its present listed building status should be maintained

MANAGEMENT

Roydon Mill and the adjacent buildings are presently in residential and/or commercial use. An historic building survey at RCHME level 2 or 3 is recommended if the mill and/or mill house become threatened by significant alteration or demolition.

GRADING */**





Roydon Mill and Mill House looking south-west

SITE NAME Waltham Abbey Gunpowder Works (Group D, F & G) Incorporation Mills (L153, L145 & L148)

PARISH Waltham Abbey **DISTRICT** Epping

NGR TL 37693 01260 **EH** 34151, 34148, 34149
RIVER Lea **EHUID** 433795, 433792, 433797

CURRENT STATUS **Con. Area** Yes **Listed Grade** II* & II **EBAR** No

LISTED BUILDING DESCRIPTION

26/11/1993

Group D Mill (L153) Grade II*

Gunpowder Incorporating Mills. 1867-8, converted for cordite incorporation c1898-9; mid C20 additions. English bond yellow brick with hipped slate roofs to Engine House and Boiler House; cross wings have brick walls separating the bays which continue as coped gables breaking through the felt and slate roofs; mid C20 replacement walling to originally wood and canvas side walls. T-plan: central Engine House with 4-bay Boiler House at east end and 3-bay cross wings on its north and south sides for gunpowder incorporating mills. One storey, with taller Engine House to centre. Chamfered brick plinth and brick dentil cornice to Engine House and Boiler House. Boiler House of 4 x 1 bays, the bays articulated by brick pilasters and each originally with segmental brick arches over windows with blind rectangular panels below; the windows were sashes except in the westernmost bay on both elevations where they were blind, and have all now been replaced by larger mid C20 windows; east doorway widened and replaced in C20. Engine House has semi-circular arched window with keystone to upper part of each elevation (glazed to north and south, originally blind to east and west) and mid C20 inserted windows. Interior: Boiler House has 9 trusses with wrought-iron tension rods, king rods, and decorative cast-iron compression members. The Engine House carried a steam engine to drive the edge runners in the incorporating mills. Cross wings have composite timber and iron roofs, the relatively insubstantial fabric of both roof and walls being easily replaced should an explosion occur; a drenching apparatus, erected over each pair of runners, would also have been activated. The original gearing for the incorporating mills survives in a brick chamber below ground level. Cross-wing partition walls have cast-iron I-section girders and blocked openings in gables which belong to shafting for machinery which was probably installed for cordite manufacture. There was an open veranda along the west front. On the south side of the Boiler House was a coal yard containing a chimney at the centre of its wall. The building was served by a tramline to the west. Incorporation involved the combination of saltpetre, sulphur and charcoal to form gunpowder, the drive shaft and machinery transmitting power to the mills being passed underneath the building to minimise the risk of explosion. The incorporating mills each consisted of pair of large heavy edge runner, of iron, which revolved on a large circular bed. This mill is closely modelled on the earlier (1861) Group C Incorporating Mills, Building L157 (qv). (RCHME report, 1993).

Group G Mill (L148) Grade II*

Gunpowder Incorporating Mills. 1888-9, converted for cordite incorporation c1898-9. English bond yellow brick with hipped slate roofs to Engine House and Boiler House; cross wings have brick walls separating the bays which continue as coped gables breaking through the felt and slate roof; mid C20 replacement walling to originally wood and canvas side walls. T-plan: central Engine House with Boiler House at east end and cross wings at its north and south sides for gunpowder incorporating mills. One storey, with taller engine house to centre, chamfered brick plinth and brick dentil cornice to Engine House and Boiler House. Boiler House of 4x1 bays, the bays

articulated by brick pilasters and each originally with segmental brick arches over windows with blind rectangular panels below and east doorway with keyed semi-circular arch. Engine House has rubbed red brick semi-circular arches over paired windows to east and west elevations. Interior noted as having similar roof structure and features to L157 (qv), upon which it was modeled. There was an open veranda along the west front. On the south side of the Boiler House was a coal yard, and the building was served by a tramline to the west. The building was repaired after an explosion in 1902. (RCHME report, 1993).

Group F Mill (L145) Grade II

Gunpowder Incorporating Mills. 1878, converted for cordite incorporation c1898-9. English bond yellow brick with hipped slate roofs to Engine House and Boiler House; cross wings have brick walls separating the bays which continue as coped gables breaking through the felt and slate roof; mid C20 replacement walling to originally wood and canvas side walls. T-plan: central Engine House with Boiler House at east end and 3-bay cross wings on its north and south sides for gunpowder incorporating mills. One storey, with taller Engine House to centre. Chamfered brick plinth and brick dentil cornice to Engine House and Boiler House. Engine House has paired segmental-arched windows set in recessed panels to upper part of east and west elevations. Boiler house of 4 x 1 bays has inserted mid C20 windows to each bay; gauged red brick semi-circular arch over east door. Interior similar to other incorporating mills, although more altered and lacking the original gearing machinery beneath the cross wing floors. The most altered of an important group of incorporating mills, the plan being closely modelled on the earlier (1861) Group C Incorporating Mills, Building L157 (qv). (RCHME report, 1993).

SITE BACKGROUND:

The Waltham Abbey Royal Gunpowder Works was the location of gunpowder and latterly chemical based explosives and propellants manufacture throughout a period of over 300 years. Within that period it moved from private ownership into state hands (1787) and following WWII and after manufacturing stopped in 1943, it became a research (Royal Armaments Research and Development Establishment or RARDE) until its closure in 1991 (RCHME 1993). Up until the 1850s the gunpowder mills were either water-powered or relied on muscle. The introduction of steam powered **incorporation mills** dates from 1857 with the construction of the Group A mills. These were built shortly after the end of the Crimean War (1854-56) as a response to advances in armaments technology and the requirements of greater amounts of powder for ever larger ordnance. The Group C mills were built in 1861, followed by Group D in 1867, Groups E and F in 1878 and Group G in 1889. The Group C mills were the prototype for all the subsequent steam powered mills and were built to a T shaped plan with two and later three mills set either side of a central engine house. The engine houses of the earlier mills (C & D) were open structures designed to accommodate a single beam engine and accessed via verandas from the west. The boiler houses to the rear originally contained Lancashire boilers under a wrought iron roof. The later mills (F & G) differ only in some minor architectural details, while the continued use of a tall central engine house in the later mills maintained the architectural integrity and implies that the beam engines were not replaced by equivalent horizontal steam engines. The earlier mills (C & D) were originally built with two bays either side of the central engine house, although this was increased to three, which became the standard form for the later mills (F & G). The bays were separated by internal brick walls while the open sides and roof were a light weight construction designed to ensure the force of any explosion would be carried to the front and rear and not to the neighbouring mill. Positioned either side of the beam engine were cast-iron flywheels connected to drive shafts which ran axially (N-S) through the mill bays, contained within underground tunnels, constructed in

either cast-iron or brick and referred to as 'shaft alleys'. The drive shafts were connected via a series of gears and a friction clutch to upright shafts which in turn drove the incorporating mills and **edge runners**. In the 1890s the gunpowder incorporating mills were converted to house cordite incorporators and presses and after the war were reused as laboratories.

Field Survey 2007

02/11/07

The Groups D, F & G Incorporation Mills have not been significantly altered since they were listed in 1993 and as such the list description remains an accurate representation of the present state of the buildings. Following the closure of RARDE in 1991 (L153) and (L148) in particular have been incorporated into the visitor attractions of the Royal Gunpowder Mills and are accordingly well maintained and in good order. The latest Group F mill (L145) is the most altered of the entire group despite extensive damage to its neighbour, the Group G mill (L148), caused by an explosion in 1902. The incorporation mills, beam engine and much of the gearing has been removed although some gearing and shafting remains within the shaft alleys. At present the mills contain various display objects and signage relating to their former use. A number of large mill stones (not steel edge-runners) are placed to the rear (E) of each of the mills and along the edge of Middle Road.

Present Use: Part of visitor attractions of Waltham Abbey Gunpowder Works.

Condition: Good

ARCHAEOLOGICAL POTENTIAL

This collection of mills with their distinct Italianate architectural styling form the largest and most important group of steam powered gunpowder mills in the country.

SITE SIGNIFICANCE

All sites of gunpowder production which retain significant archaeological remains and survival will normally be identified as nationally important. The Waltham Abbey gunpowder mills are the pre-eminent British powder factory and the most significant exemplar of gunpowder manufacture in Britain. The site is important for three main reasons: because many of the processes used in this international industry were invented and developed at Waltham, because the works survive in a remarkably complete state and because many of the structures themselves are rare nationally and internationally.

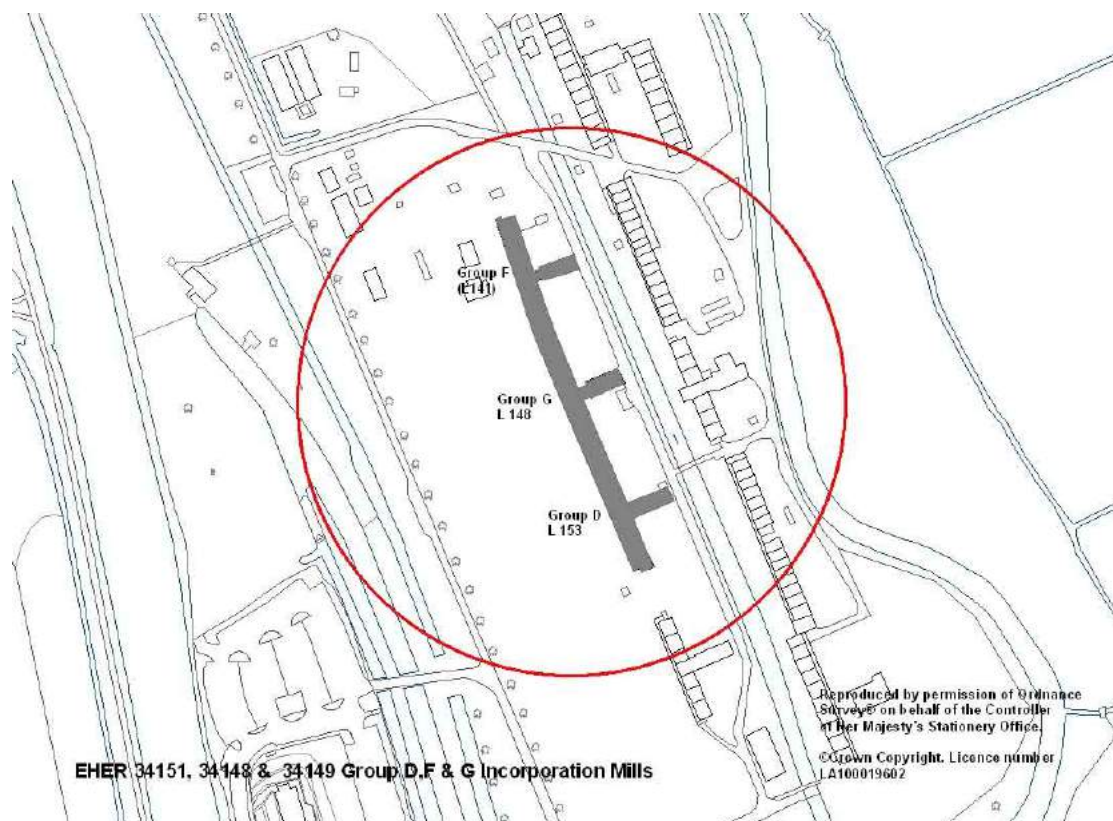
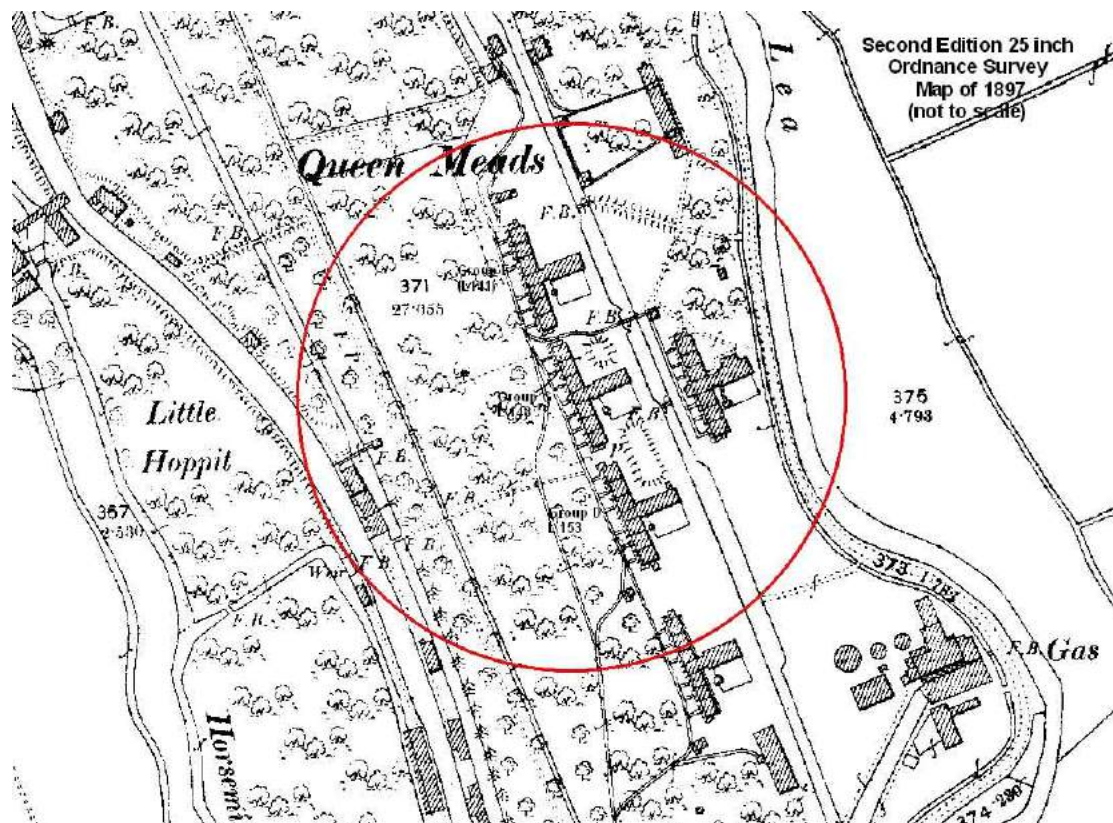
RECOMMENDED ACTION

Maintain current levels of listed status

MANAGEMENT

As these mills have already been recorded by the RCHME and feature prominently in 'Dangerous Energy' an English Heritage publication detailing explosives manufacture, a standard survey would not be appropriate. Future development to and in the area of the mills should be closely scrutinised and changes affecting the buildings fabric or groundworks within its proximity need to be archaeologically recorded.

GRADING ***/**





**Waltham Abbey Gunpowder Works Group D, F & G (L148)
Incorporation Mills looking north**

SITE NAME Waltham Abbey Gunpowder Works (Group E) Incorporation Mills (L149)

PARISH Waltham Abbey **DISTRICT** Epping

NGR TL 3774301289 **EH** 34150
RIVER Lea **EH** 433793

CURRENT STATUS **Con. Area** Yes **Listed** **Grade II*** **EBAR** No

LISTED BUILDING DESCRIPTION

26/11/1993

Building in two main phases, the core built c1869 as "Pellet Powder Buildings" comprising an Accumulator House, Engine House and Boiler House; converted into incorporating mills in 1877-8. English bond yellow brick with red brick dressings; slate roofs. T-shaped plan: originally a roughly square plan. In 1877-8 the coal yard walls were demolished, the rest of the structure; a new Boiler House was built at the rear of the Engine House and a new coal yard was formed which incorporated the earlier chimney; 3-bay cross wings for incorporating mills added to north and south; Pump House added between 1878 and 1895, extended c1904, on north side of Boiler House. One storey, with taller Engine House to centre having brick dentil cornice and pilasters. Accumulator House has datestone 1887-8, probably recording a rebuilding, semi-circular arched doorway, paired semi-circular arched windows to each elevation with false machicolation pattern of bricks above and to corbelled-out cornice. 1877-8 Boiler House of 4x1 bays, the bays articulated by pilasters and the 3 eastern bays on the north and south elevations each containing a pair of semi-circular arched windows with red brick heads and drops, in a style similar to that of the Accumulator House; rubbed red brick semi-circular arch to eastern end. Cross wings each of 3 bays, the original insubstantial walling having been replaced. Pump House, added to centre of north elevation of the Boiler House, has semi-circular headed windows to north elevation and square windows to east and west sides. Interior: Boiler House has trusses with wrought-iron tension rods, decorative cast-iron compression members and cast-iron ventilators. Cast-iron columns on the outer west side of the cross wings originally formed part of an open veranda which had ends of corrugated iron. Composite timber and iron roofs to cross wings, the relatively insubstantial fabric being easily replaced should an explosion occur; a drenching apparatus, erected over each pair of runners, would also have been activated. The original gearing for the incorporating mills survives in a chamber below ground level, the manufacturing process being identical to that carried out in L157 (qv), upon which the later incorporating mills were modelled. The accumulator provided hydraulic power to press gunpowder in pellet forms, which resulted in more consistent performance and was particularly important component of the technology of the large-bore guns being developed in this period. (RCHME report, 1993).

SITE DESCRIPTION

Waltham Abbey Royal Gunpowder works was the location of gunpowder and latterly chemical based explosives and propellants manufacture throughout a period of over 300 years. Within that period it moved from private ownership into state hands (1787) and following WWII and after manufacturing stopped in 1943, it became a research (Royal Armaments Research and Development Establishment or RARDE) until its closure in 1991 (RCHME 1993).

Up until the 1850s the gunpowder mills were either water-powered or relied on muscle. The introduction of steam powered **incorporation mills** dates from 1857 with the construction of the Group A mills. These were built shortly after the end of the Crimean War (1854-56) as a response to advances in armaments technology

and the requirements of greater amounts of powder for ever larger ordnance. The Group C mills were built in 1861, followed by Group D in 1867, Groups E and F in 1878 and Group G in 1889. In 1858 a committee was set up at Waltham Abbey Royal Gunpowder Factory (RGPF) to investigate problems of suitable powders for high calibre guns. The committee advocated the use of **pellet powders** produced using an experimental hydraulic press constructed at the Royal Laboratory at Woolwich. Plans for a new engine, weight loaded accumulator and hydraulic accumulator house to serve the pellet press were produced in 1869 and a new pellet press designed by John Anderson was installed and in operation by 1870 at Waltham Abbey. Even while this technology was being installed, the explosives committee changed tack and decided to adopt the simpler form of pebble powders for large guns. Hence pellet powders were manufactured for only two years at Waltham Abbey before the newly built pellet powder house (L149) was converted into the Group E incorporating mill in 1877-8. The abandonment of pellet powders left the new plant idle and although it was remodelled to a standard T shaped steam driven gunpowder mill with a central engine house flanked by three mill bays to either side (like Groups C,D,G and F) the hydraulic weight loaded accumulator was retained. This then performed as a centralised hydraulic system for the factory serving presses located over 600 metres away (Cocroft 2000). The accumulator tower contained a water tank (which replaced the earlier hipped roof) with a weight loaded ram connected by high pressure piping to the hydraulic presses and a receiver or remote accumulator tower (L136). A horizontal steam engine pumped water into the accumulator to raise the ram and so provide hydraulic pressure on demand to the gunpowder presses. The original gearing for the incorporating mills survives in a chamber below ground level, the manufacturing process being identical to that carried out in (L157), upon which the later incorporating mills were modelled. In the 1890s the gunpowder incorporating mills were converted to house cordite incorporators and presses and after the war were reused as laboratories.

Field Survey 2007

02/11/07

The Group E Incorporation Mills have not been significantly altered since they were listed in 1993 and as such the list description remains an accurate representation of the present state of the buildings. Following the closure of RARDE in 1991 (L149) has been incorporated into the visitor attractions of the Royal Gunpowder Mills and are accordingly well maintained and in good order. Whether the weight accumulator mechanism remains is unclear, although the steam engine, mills and much of the gearing has been removed but some gearing and shafting survives within the shaft alleys. At present the mill buildings around Queens Mead contain various display objects and signage relating to their former use.

Present Use: Part of the visitor attractions of Waltham Abbey Gunpowder Works.

Condition: Good

ARCHAEOLOGICAL POTENTIAL

This collection of mills with their distinct Italianate architectural styling formed the largest and most important group of steam powered gunpowder mills in the country.

SITE SIGNIFICANCE

All sites of gunpowder production which retain significant archaeological remains and survive well will normally be identified as nationally important. The Waltham Abbey gunpowder mills are the pre-eminent British powder factory and the most significant exemplar of gunpowder manufacture in Britain. The site is important for three main reasons: because many of the processes used in this international industry were invented and developed at Waltham, because the works survive in a remarkably

complete state and because many of the structures themselves are rare nationally and internationally.

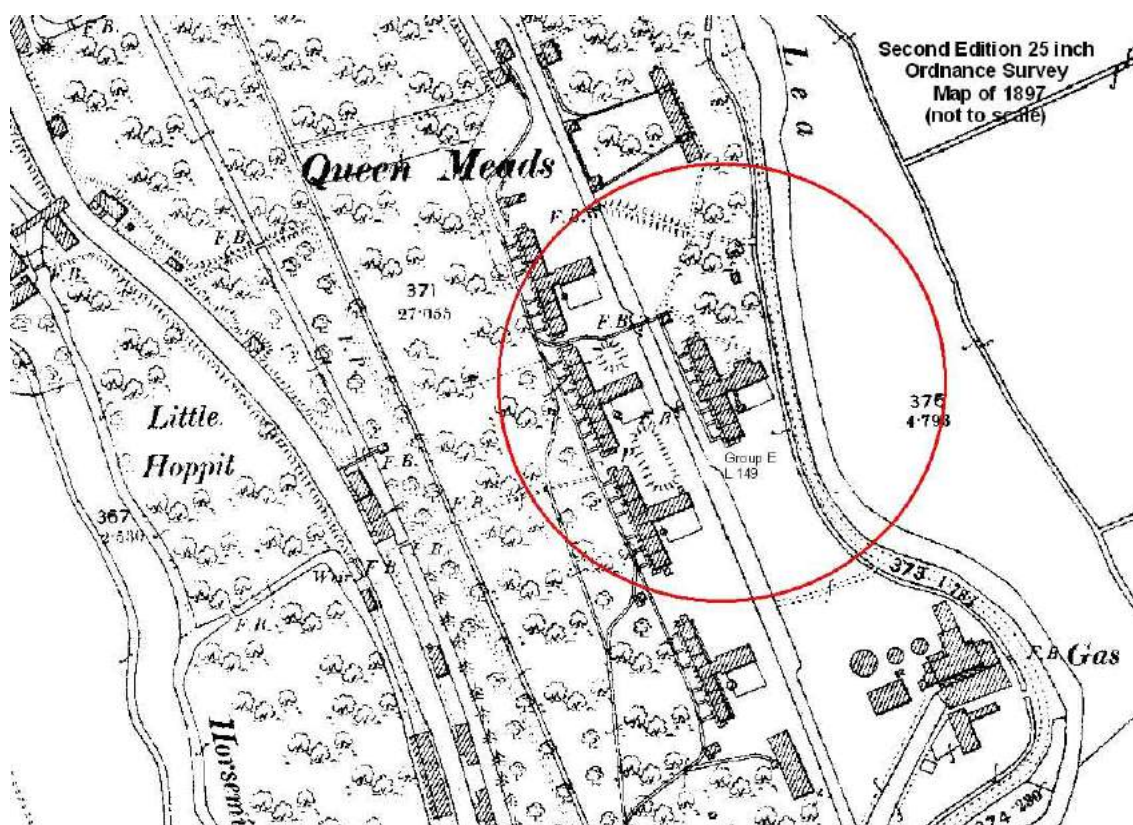
RECOMMENDED ACTION

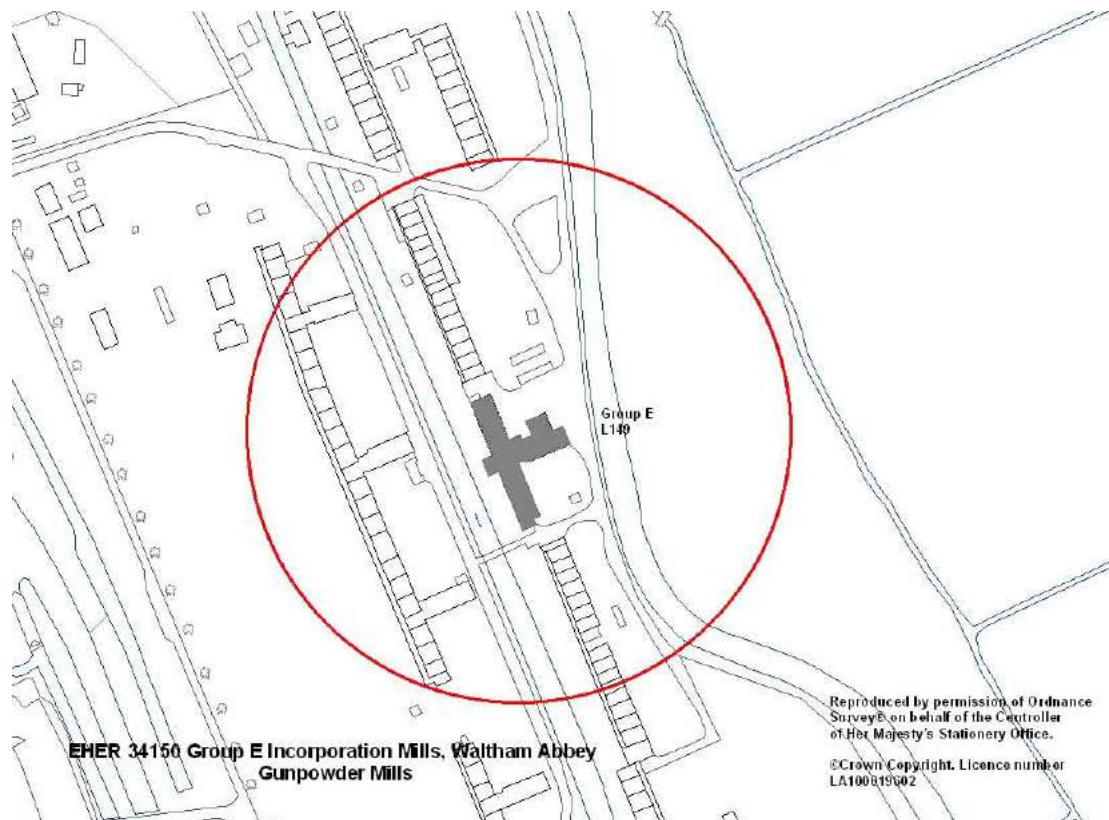
Maintain current Grade II* listed building status

MANAGEMENT

Although these mills have already been recorded by the RCHME and feature prominently in 'Dangerous Energy' an English Heritage publication detailing explosives manufacture, should the opportunity arise a detailed survey of Group E mills should be carried out to clarify the extent to which its technology and in particular the drive train and the weight accumulator survive. Also future development should be closely scrutinised and changes affecting the buildings fabric or groundworks within its proximity need to be archaeologically recorded.

GRADING *** /****





**Waltham Abbey Gunpowder Works Group E (L149) Incorporation
Mill looking east**

SITE NAME Waltham Abbey Gunpowder Works (Group C) Incorporation Mills (L157)

PARISH Waltham Abbey **DISTRICT** Epping

NGR TL 37733 01167 **EH** 34152
RIVER Lea **EHUID** 352172

CURRENT STATUS **Con. Area** Yes **Listed:** Grade I **EBAR** No

LISTED BUILDING DESCRIPTION

26/11/1993

Gunpowder Incorporating Mills. 1861, converted for cordite incorporation c.1898-9. English bond yellow brick with hipped slate roofs to Engine House and Boiler House; cross wings have brick walls separating the bays which continue as coped gables breaking through the felt and slate roof mid C20 replacement walling to originally wood and canvas side walls. T-plan: central Engine House with Boiler House at east end and cross wings on its north and south sides for gunpowder incorporating mills; these wings, originally of 2 bays, were each extended by the addition of a third bay soon after construction. One storey, with taller Engine House to centre. Chamfered brick plinth and brick dentil cornice to Engine House and Boiler House. Boiler House of 4x1 bays, the bays articulated by brick pilasters and each originally with segmental brick arches over windows with blind rectangular panels below (sills lowered and double doors inserted to easternmost bay in north elevation c1906-7); the windows were sashes except in the westernmost bay on both elevations where they were blind; wide doorway to east, with keystone to gauged brick semi-circular arch with fanlight. Engine House has semi-circular arched window with keystone to upper part of each elevation (glazed to north and south, originally blind and glazed 1906-7 to east and west); windows to lower part of north and south elevations inserted 1906-7. Interior: Boiler House has 9 trusses with wrought-iron tension rods, king rods, and decorative cast-iron compression members. The Engine House carried a steam engine to drive the edge runners in the incorporating mills. Cross wings have composite timber and iron roofs, the relatively insubstantial fabric being easily replaced should an explosion occur; a drenching apparatus, erected over each pair of runners, would also have been activated. The original gearing for the incorporating mills survives in a chamber below ground level. Cross-wing partition walls have I-section girders and blocked openings in gables which belong to shafting for machinery which was probably installed for cordite manufacture. There was an open veranda along the west front, from which cast-iron columns have survived. On the south side of the Boiler House was a coal yard containing a chimney at the centre of its west wall. The building was served by a tramline to the west. Incorporation - an extremely important process in gunpowder manufacture- involved the grinding and combination of saltpetre, sulphur and charcoal to form gunpowder. Waltham Abbey had pioneered many important developments in the process, and this building is the first steam-powered incorporating mill to have survived on the site (and most probably in the world); the drive shaft and machinery transmitting power to the mills was passed underneath the building to minimise the risk of explosion. The incorporating mills each consisted of pair of large heavy edge runners, of iron, which revolved on a large circular bed. The first and most complete of the incorporating mills to be built in the form of a T-shaped plan comprising a central Engine House, rear Boiler House and cross wings, thus providing a model for later incorporating mills on the site - L153 (qv) is an almost identical copy. (RCHME report, 1993).

SITE BACKGROUND:

Waltham Abbey Royal Gunpowder works was the location of gunpowder and latterly chemical based explosives and propellants manufacture throughout a period of over

300 years. Within that period it moved from private ownership into state hands (1787) and following WWII and after manufacturing stopped in 1943, it became a research (Royal Armaments Research and Development Establishment or RARDE) rather than a production centre, until its closure in 1991 (RCHME 1993).

Up until the 1850s the gunpowder mills were either water-powered or relied on muscle. The introduction of steam powered **incorporation mills** dates from 1857 with the construction of the Group A mills. These were built shortly after the end of the Crimean War (1854-56) as a response to advances in armaments technology and the requirements of greater amounts of powder for ever larger ordnance. The Group A mills were seriously damaged in 1861 and apart from the engine house, mechanics shop and boiler house, the mills no longer remain. The Group C mills were built in 1861, followed by Group D in 1868, Groups E and F in 1878 and Group G in 1889. The Group C mills were the prototype for all the subsequent steam powered mills and were built to a T shaped plan with originally two but later three mills either side of a central engine house. This plan may perhaps reflect the arrangement of an earlier Rocket Factory built at the Royal Arsenal, Woolwich in 1814 (Cocroft 2000). The engine house originally contained a steam powered beam engine which drove the edge-runners (steel wheels) used to incorporate the gunpowder mixture into '**mill cake**'. Positioned either side of the beam engine were cast-iron flywheels connected to drive shafts which ran axially (N-S) through the mill bays, contained within underground tunnels, constructed in either cast-iron or brick and referred to as 'shaft alleys'. The drive shafts were connected via a series of gears and a friction clutch to upright shafts which in turn drove the incorporating mills and **edge runners**. A boiler house, chimney (demolished) and coal yard were sited to the rear of the engine house. In the 1890s the gunpowder incorporating mills were converted to house cordite incorporators and presses and after the war were reused as laboratories.

Field Survey 2007

02/11/07

The Group C Incorporation Mills (L157) have not been significantly altered since they were listed in 1993 and as such the list description remains an accurate representation of the present state of the building. Following the closure of RARDE in 1991 (L157) has been incorporated into the visitor attractions of the Royal Gunpowder Mills and is accordingly well maintained and in good order. The incorporation mills, beam engine and much of the gearing and drive train has been removed and at present the building contains various display objects and signage relating to the mills former use. A number of large millstones (edge-runners) are placed to the rear (E) of each of the mills and along the edge of Middle Road.

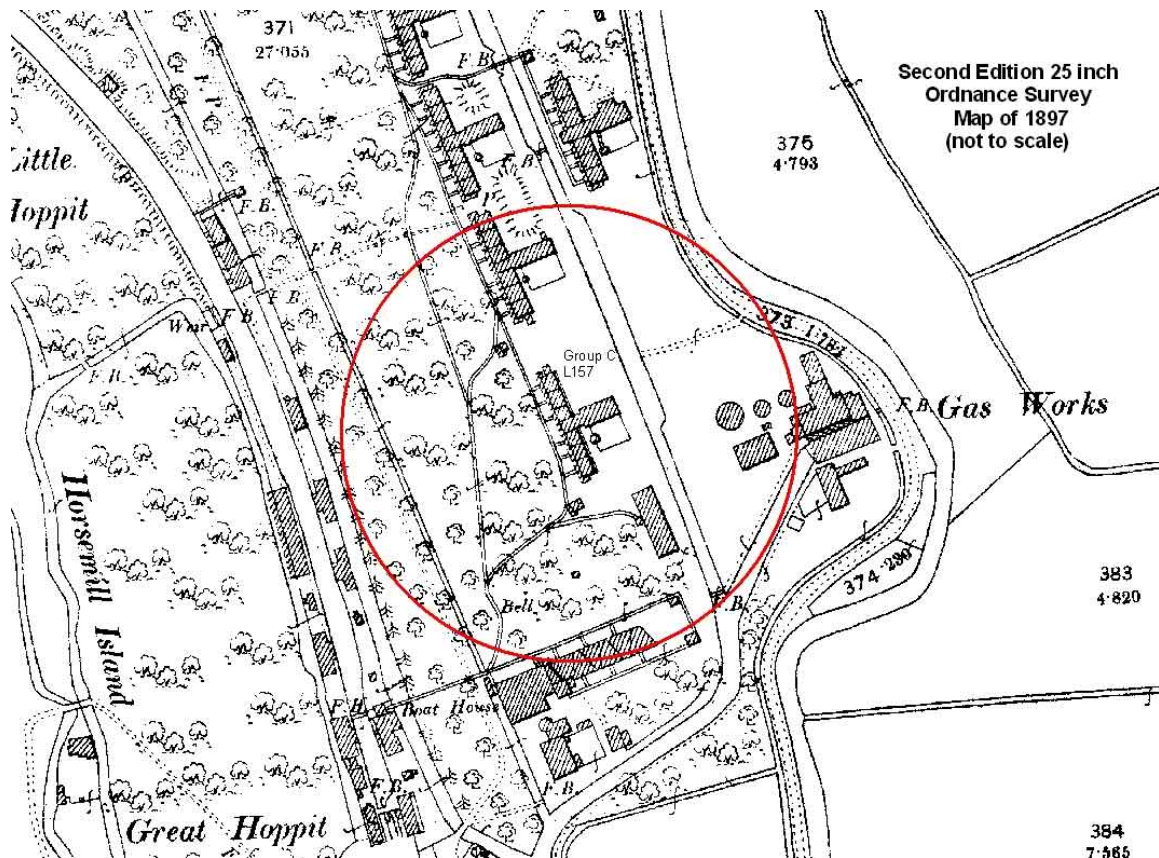
Present Use: Part of the visitor attractions of Waltham Abbey Gunpowder Works.
Condition: Good

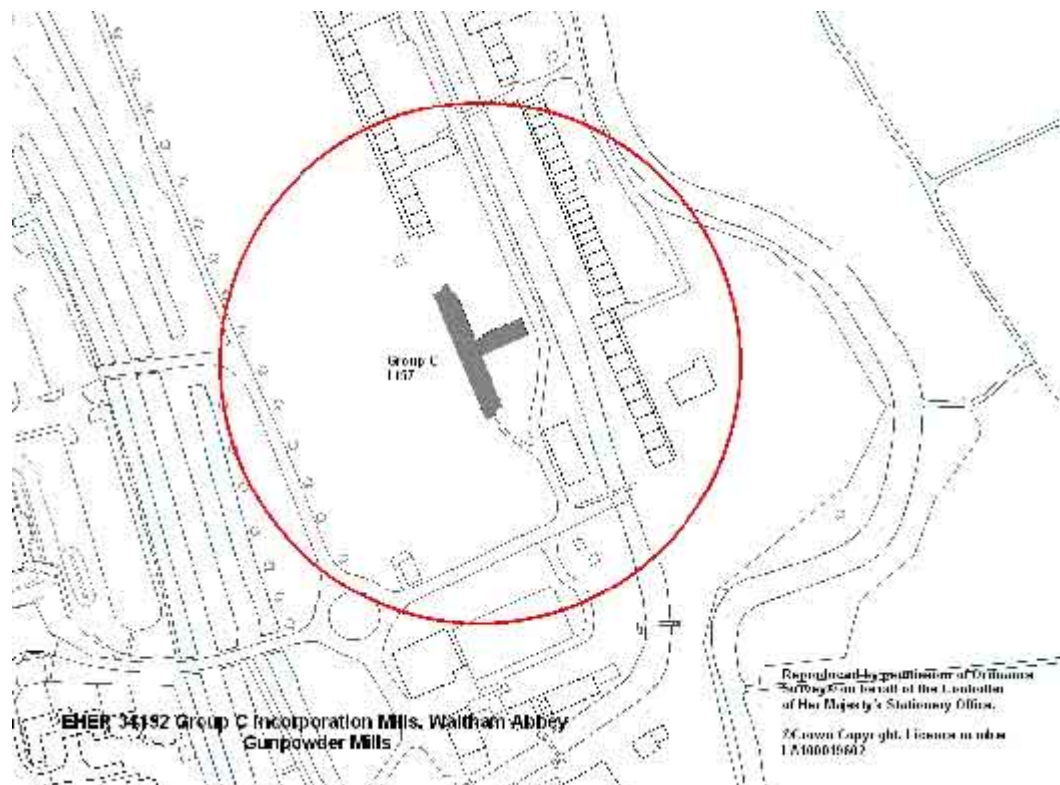
ARCHAEOLOGICAL POTENTIAL

This collection of mills with their distinct Italianate architectural styling formed the largest and most important group of steam powered gunpowder mills in the country.

SITE SIGNIFICANCE

All sites of gunpowder production which retain significant archaeological remains and survive well will normally be identified as nationally important. The Waltham Abbey gunpowder mills are the pre-eminent British powder factory and the most significant exemplar of gunpowder manufacture in Britain. The site is important for three main reasons: because many of the processes used in this international industry were invented and developed at Waltham, because the works survive in a remarkably complete state and because many of the structures themselves are rare nationally





Waltham Abbey Gunpowder Works Group C (L157) Incorporation Mill looking east

SITE NAME	Waltham Abbey Gunpowder Works Press and Pump House (L103/L104)
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PARISH	Waltham Abbey	DISTRICT	Epping
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NGR	TL 37673 01686	EH	3450
RIVER	Lea	Schedule No.	21567

CURRENT STATUS	Con. Area	Yes	Scheduled:	Yes	EBAR	No
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STATUTORY SCHEDULE DESCRIPTION (No.21567)

The monument is situated on the northern outskirts of Waltham Abbey and includes intact buildings, ruins, earthworks and buried remains of parts of the Royal Armament Research and Development Establishment, formerly known as the Royal Gunpowder Factory. The remains are associated with the manufacture of gunpowder, guncotton, nitroglycerine, cordite paste and tetryl, and include a number of ancillary buildings and structures associated with these manufacturing processes. Intact buildings, ruins, earthworks and buried remains of parts of a complex concerned with producing and testing modern high explosives, parts of an extensive water management system and parts of an associated tramway and railway network are also included. The scheduling occupies two separate areas.

The site is set within and around a series of watercourses, most of which are man-made and channel the River Lea as it flows from N to S. Although the manufacture of gunpowder in the Waltham Abbey area dates back to the 1560s, there is no documentary evidence for production at this site before the mid-17th century. Between 1702 and 1787 the site was in the possession of the Walton family who developed many improvements to the gunpowder manufacturing process here. Cartographic evidence from this period indicates that these early works occupied the area known as Millhead to the W of Middle Road and Powdermill Way in the southern part of the first area of protection. Here the mills and other buildings were set on either side of a large leat fed by a branch of the Lea. Water from this leat (the Millhead Stream) was drawn off at regular intervals along its course to power the mills and was returned to the river by means of two parallel tailraces either side of the leat. These mills included stamping mills which blended the raw materials of saltpetre, sulphur and charcoal, a corning house and a glazing house, and a number of stoves for drying the finished product. There were also associated ancillary buildings, including powder magazines.

Some of these early mills were horse-powered and, in 1963, construction work in the Millhead area recovered the remains of at least two horse mills surviving beneath the ground surface. An engraving of the site in 1735 indicates that, by this date, water-powered mills either side of Millhead Stream were already in use, but water-power did not entirely replace horse-power until 1814. A number of mills along Millhead Stream, including Smeaton's Mill and Head Mills, have been located during excavation work and recent ground clearance. These remains indicate structures with a complex history retaining evidence for several phases of construction. The remains of Smeaton's Mill were found to include the brick foundations of a mill building which also forms the inner edge of the tailrace situated to the E of Millhead Stream. Within this mill a central wheelpit is visible, although rubble-filled. Irregular scarps on the platform between the E tailrace and Millhead Stream indicate the presence of further building remains beneath the ground surface. The remains of the mill buildings in the Millhead area are also visible above ground. The Dusting House, for example, in use between the early 18th and mid-20th century, shows a number of alterations and rebuilding phases and is represented by brick foundations either side

of a central wheelpit. The wheel was powered by water from Millhead Stream and its flow was regulated by a sluice gate. The Dusting House was latterly provided with a concrete traverse (blast wall). Traverses, both standing structures and foundations, are present throughout much of the site and are constructed from a number of different materials, including brick, earth, and corrugated iron. They served an important function in minimising the damage caused to buildings by explosions elsewhere on the site. A number of roofed buildings also survive within the Millhead area, including the 18th century offices, a powder and barrel store, and washing house. These buildings are of exceptionally rare types and are intrinsic to the site's history and development. They are not, however, included in the scheduling but are protected as Listed Buildings.

ASSESSMENT OF IMPORTANCE

Gunpowder was the only explosive available for military use and for blasting in mines and quarries until the mid-19th century. Water-powered manufacturing mills were established in England from the mid-16th century, although powder had been prepared by hand for at least 200 years. The industry expanded until the late 19th century when high explosives began to replace gunpowder. Its manufacture declined dramatically after World War I with British production ceasing in 1976.

The technology of gunpowder manufacture became increasingly complex through time with the gradual mechanisation of what were essentially hand worked operations. Waterwheels were introduced in the 16th century, and steam engines and water turbines from the 19th century. Pressing and corning were also introduced between the 16th and 19th centuries to improve the powders.

Pressing improved the explosive power of the mill cake and corning broke the pressed cake into different sizes and graded it with respect to its fineness.

Additional techniques were developed throughout the 17th, 18th and 19th centuries to improve the quality and consistency of the finished product, and this in turn resulted in a variety of types of powders; ranging from large coarse grained blasting powders (used in mines and quarries) to fine varieties (used, for example, in sporting guns).

Gunpowder manufacturing sites are a comparatively rare class of monument with around 60 examples known nationally. Demand for gunpowder centred on the London area (for military supply), other ports (for trade) and the main metal-mining areas. Most gunpowder production was, therefore, in Cumbria, the south west, and the south east, around the Thames estuary. The south east of England was perhaps the most important of these areas. The first water-powered mills were established here from the mid-16th century onwards and many of the major technological improvements were pioneered in the mills at Waltham Abbey and Faversham. All sites of gunpowder production which retain significant archaeological remains and survive well will normally be identified as nationally important.

The Waltham Abbey gunpowder mills are important for three main reasons: because many of the processes used in this international industry were invented and developed at Waltham, because the works survive in a remarkably complete state and because many of the structures themselves are rare nationally and internationally.

Most of the structures on the site survive in a remarkably complete state, in several cases only the matchwood components of the buildings are absent.

Unusually a sequence of complete transport and power systems which connect the structures also survives in a complete condition. Although some similar structures are known at other sites, the Waltham examples are all in a much more complete state

than elsewhere and quite a number (such as the press house and the Quinan Stove, for example) are thought to be unique survivals. Not only do the structures survive well, but several of them (like Smeaton's Mill, for example) were the prototypes for technologies which subsequently became standard and were exported around the world. Since the site survives so completely it is possible to trace the entire history of the gunpowder industry through the alterations and adaptations made to the structures here.

For an industrial site there is also a remarkable collection of documentary information which, most unusually, allows the functions of the various buildings and structures to be understood in great detail.

The Waltham Abbey site is further distinguished from others by the quality of the surviving remains of the guncotton, nitroglycerine and cordite industries, which replaced gunpowder for most military purposes at the turn of the 19th century. Again the structures of these related industries survive in a near complete condition. Many of them are thought to be unique to this site (the drying kilns of the late 1870s, for example) and, as with the gunpowder industry remains, there are several structures which were the earliest examples in the world, within which the whole industry was invented and developed. These structures also have accompanying documentation which adds to the significance of the surviving remains. Finally, the site at Waltham has several other features of interest such as the unique surviving components of the tetryl works and the interesting adaptations undertaken to the site during the initial years of the British rocketry programme.

SCHEDULING HISTORY: Monument included in the Schedule on 26th November 1993. Scheduling revised on 14th March 2000

SITE BACKGROUND:

Waltham Abbey Royal Gunpowder works was the location of gunpowder and latterly chemical based explosives and propellants manufacture throughout a period of over 300 years. Within that period it moved from private ownership into state hands (1787) and following WWII and after manufacturing stopped in 1943, it became a research (Royal Armaments Research and Development Establishment or RARDE) rather than a production centre, until its closure in 1991 (RCHME 1993).

The readily available supply of water power was probably the principal reason why the gunpowder mills were established at Waltham Abbey. The early gunpowder works were set up in a former fulling mill and oil mill converted to a gunpowder mill during the C17. The artificial leat of mill head stream took its water from the high level water system and from inlets around Paynes Island and the Grand Magazine. The densest concentration of water-powered mills lay at the southern end of Millhead Stream. These included four mills including two stamp mills and two **(incorporating) mills with edge runners** (millstones). At the height of the Napoleonic Wars the incorporating mills rose to nine plus a Dusting House and two **Corning Houses** (RCHME, 1993). By the end of the Great War these early water powered mills were mainly dismantled, and the last mill was finally demolished in 1956. Today only the earthworks and fragmentary remains of the water-powered mills survive.

Hydraulic power offered the powder-makers a method of operating presses remotely and hence more safely. Pressing **mill cake** was recognised as one of the most important manufacturing processes, but was also one of the most dangerous. Records show that two water-powered hydraulic press houses were in operation by late 1854. These reused the sites of two former horse powered Corning Houses at the termini of canal branches on the high level system. The Corning Houses were

dismantled about 1818, but their oval traverses (blast walls) were left and reutilised to separate the press house from the pump house. The press was driven by the waterwheel but could also be hand-cranked when water-levels were low. Due to the volatile nature of the powder the press was operated remotely from a room adjacent to the pump room and behind the traverse (Cocroft, 2000).

Field Survey 2007

02/11/07

The press/pump house is located within the Waltham Abbey North Site and is situated at a distance to the north of the main group of incorporating mills (L148, 145, 153, 149 & 157) by Queen Meads. The press house (L103/104) incorporates three main structural elements; The press house; a light-weight structure of which only the brick foundations and the hydraulic press remain, the pump house; a brick built two chambered building retaining an external waterwheel and an extant pump mechanism, and between the two a large brick built traverse or blast screen.

The pump house was served by its own **leat** system, extending in a straight line NW-SE and by fed directly from the River Lea. Immediately to the west or upstream of the pump house the leat widens out to form a holding or 'mill pond' held back by a sluice gate, integral to the brick-built head race. The race runs along the southern side of the pump house and empties into a tail which curves south to rejoin the River Lea to the south and east. The race, sluice and external waterwheel still remain in situ and for the most part intact. The pump house is a small, unusual building built with brick walls laid in English Bond with a barrel vaulted roof constructed from corrugated iron (currently removed). It is built over two bays with an internal full height dividing wall separating the pump room from the press operating room. The race is contemporary with the rest of the structure as is the cast-iron low breast shot waterwheel, the gearing and hydraulic pump. The raking angle of the paddles and the height the wheel received its water shows that the wheel adopted a more sophisticated design as advocated by the likes of Smeaton and Poncelet, and was not merely an impulse wheel typical of an undershot system. The waterwheel is formed from two sections or rims connected round their circumference by the iron paddles, sole boards and a light weight central ring brace. Spokes radiating from a central hub are bolted to both outer rims, while the hub is mounted upon an iron shaft which straddles the race at right angles to the long axis of the building. The end (N) of the wheel shaft passes into the pump house and meshes with a gear driving a large cast-iron flywheel. This in turn drives a crank which via a long connecting rod operates the pump for the adjacent hydraulic press. All this machinery survives in a good condition and could plausibly be restored back to a working condition.

Use: Disused

Condition: Fair- undergoing restoration

ARCHAEOLOGICAL POTENTIAL

Although some similar structures are known to survive at other explosive manufacturing sites, the Waltham Abbey examples are more complete and a number of the buildings (i.e. the Press House and the Quinan Stove) are thought to be unique survivals.

SITE SIGNIFICANCE

All sites of gunpowder production which retain significant archaeological remains and survive well will normally be identified as nationally important. The Waltham Abbey gunpowder mills are important for three main reasons: because many of the processes used in this international industry were invented and developed at Waltham, because the works survive in a remarkably complete state and because many of the structures themselves are rare nationally and internationally.

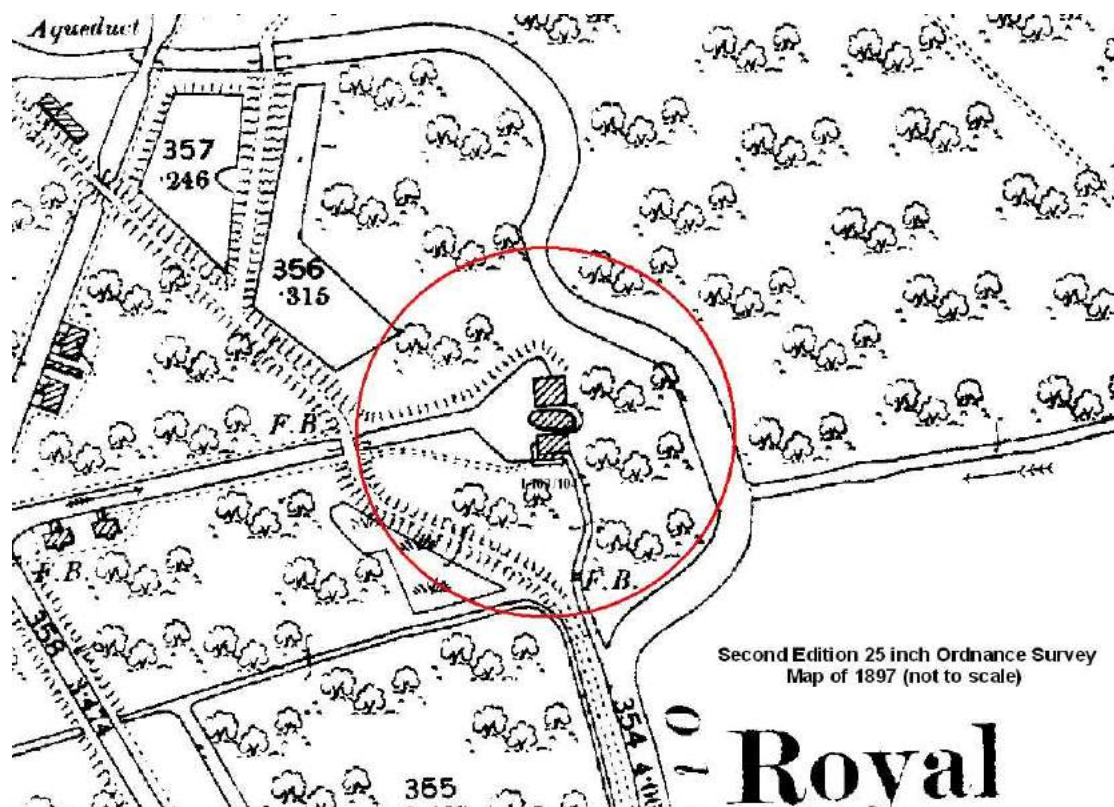
RECOMMENDED ACTION

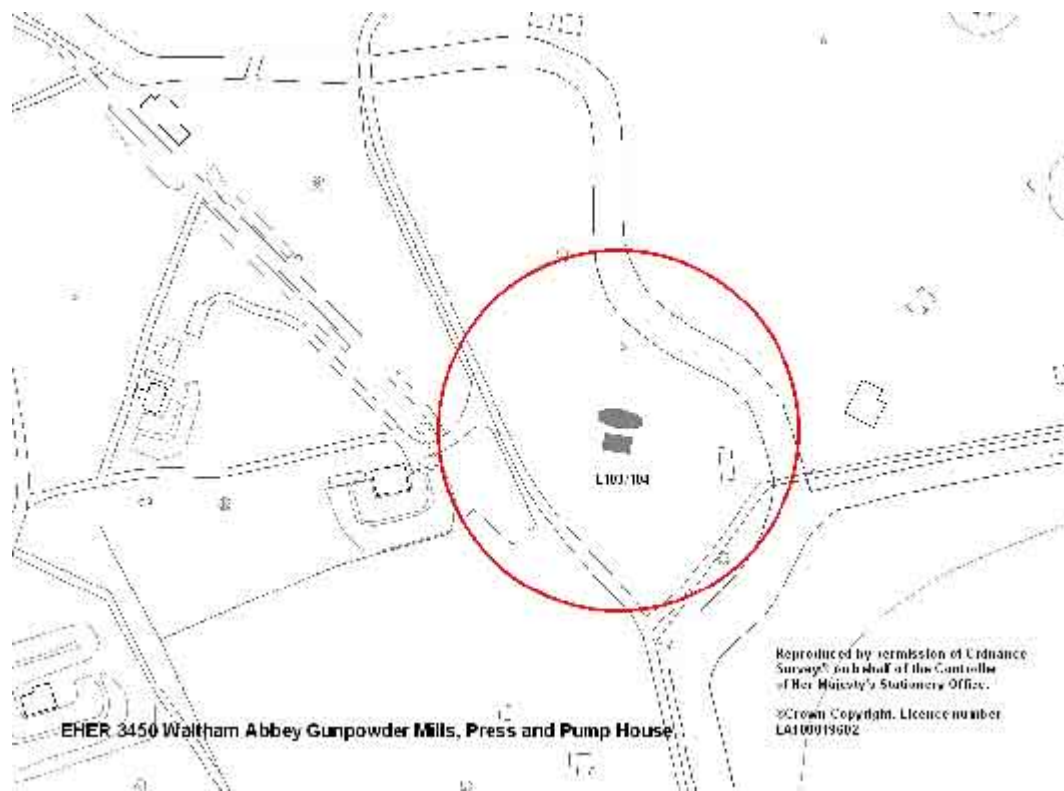
Maintain the current Scheduled Status. Although parts of the site is open to the public, due to the sheer size of the complex many areas, particularly those to the north and east still remain off limits to the public and extensively overgrown. It is clear that groups of important monuments within these areas urgently need conservation to arrest further deterioration and to ultimately integrate them into the visitor attractions. The incorporation mills and the press house all enjoy statutory designation through listing or scheduling and are generally well maintained. However, some of the lesser structures close to Queens Mead are starting to appear unkempt and in need of some remedial attention to prevent more serious problems arising in the future. The Quinan Stove and the Grand Magazine are presently on the English Heritage Historic Buildings at Risk Register. Although currently roofless, as the press house is in the process of restoration it is not included on the national or county Buildings at Risk Registers.

MANAGEMENT

Should the opportunity arise a detailed high level (RCHME Level 4) architectural survey of the Press and Pump house should be undertaken

GRADING ***/****





Waltham Abbey Gunpowder Works Press and Pump house

HARLOW DISTRICT

EHER	Site Name	Grade
31724	Parndon Mill, Parndon Mill Lane, Harlow	**/**



SITE NAME Little Parndon Mill, Parndon Mill Lane			
PARISH	Harlow	DISTRICT	Harlow
NGR	TL 43694 11098	HER	31724
RIVER	Stort (Navigation)	EHUID	119537
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

19/06/1981

Mid to late C19 mill, for both water and steam power. Of whitewashed brick with slated roof, and 2 jettied lucams for sack-hoisting. Four storeys high, with ranges of 6 cast-iron windows. Inside: the turbine for water power, of iron, survives. No original machinery other than the turbine survives.

SITE BACKGROUND:

A mill on the site of Parndon mill is mentioned in Domesday along with two hives and a goat. The present mill was built around 1897, following the destruction of its predecessor by fire. However, this date is at odds with a date of 1882 inscribed into a keystone of a ground floor arch. A Francis horizontal 20 horsepower turbine was installed in 1904 and the mill continued to mill corn up until 1960 when the miller Neville Smith, passed away. Thereafter it was taken on by Bill Twynham who milled animal feed and ran a coal merchants business from the site. It fell into dereliction until 1968 when its present owner set up a pottery business in the mill and set about its sympathetic restoration. Parndon mill is now partly used as office accommodation, as studios and workshops for local artists and craftsmen and as a Gallery.

Sources: www.parndonmill.co.uk

Field Survey 2007

24/05/07

A large 10 bay 4 storey brick built watermill with two lucams, one in each end bay (N & S). The entire mill is built using 'Cambridge' white bricks laid for strength in English Bond. The gable ended roof is divided off centre by a fire wall and is presently covered with corrugated asbestos replacing the original slates. The fire wall divides the building into two distinct halves separating the milling floors of the southern six bays from the granary/screening areas of the northern 4 bays. This separation explains the unusual provision of two lucams, one serving each half of the mill. Both lucams are situated at third floor level and are large timber-framed and boarded structures supported by plain straight braces on brick corbels. Below the lucams are tiers of taking in doors, two below the southern lucam at first and second floors and three serving each floor in the northern section. Central to the facade at first floor is an iron gantry which in addition to the hoists in the two lucams was used when loading and unloading carts and lorries. The present gantry and the decorative cantilevered brackets on which it is supported are replacements but adopt the same design as the originals. The window distribution on the whole is asymmetrical but if associated by division is more regular; the southern section comprising a block of 4 and 3 window ranges, and the northern bays, single windows flanking the central taking-in doors. The window apertures have segmental heads with arches of three on edge courses and either stone or replacement sills. The windows are multi-paned, metal framed fixed glazing with a central pivoting ventilating hopper. The vast majority of the original windows remain and those which have been replaced are good quality replicas produced by an artisan blacksmith on site. Plain tie bar bosses are present at each floor level across the main elevation with smaller bosses at eaves level.

The horizontal turbine remains within the wheel pit below the southern bays of the mill. Although the encasing structure no longer survives the main engineering, i.e. the twin impellers are in situ. All that remains of the vertical drive is the main upright drive shaft supported by the first floor joist and the crown wheel from which the stones were driven. The sluice gate mechanism within the chamber remains intact. Although the mill has been extensively converted for use as offices/studios/gallery space and retains no technological apparatus (apart from that mentioned) its conversion was reasonably sympathetic, to the extent that the original straight flights, close boarded floors and external doors survive. Other original structural features include geometric style cast-iron columns and the machine sawn Baltic softwood binding joists.

A contemporary late C19 white brick built engine house with an original chimney stack lies adjacent to the NE angle of the mill. Even though the steam engine has long since been removed, survival of the engine house and particularly the stack is most uncommon. Immediately south is a Grade II listed three storey mid C18 mill house built with a plain tiled gabled ended roof and plastered elevations and a range of converted outbuildings including a former stable block. The mill and mill house are listed for their group value.

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Later C19	Brick	Med-high
Mill house	Mid C18	Brick	Med-high
Engine House	Later C19	Brick	Med
Stables	Later C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Following the mills conversion to office accommodation and re-use as artists studios, much of its original spatial integrity, technology, fixtures and fittings have been lost. However the buildings re-use was not entirely unsympathetic and the mill still retains some internal features, its turbine and lower parts of the stone drive.

SITE SIGNIFICANCE

In its appearance Parndon Mill is more comparable to the style of a cotton mill than that of a traditional Essex watermill. It is a large, austere mill typical of industrialised production buildings of the later C19, incorporating contemporary design features such as fire break walls, fire doors and an original engine house and boiler house stack. It is a fine example of an integrated industrial steam and watermill that has few close parallels in Essex. It lacks unsympathetic accretions and still makes an important contribution to the historic/architectural character of the area and particularly the setting along the Stort Navigation.

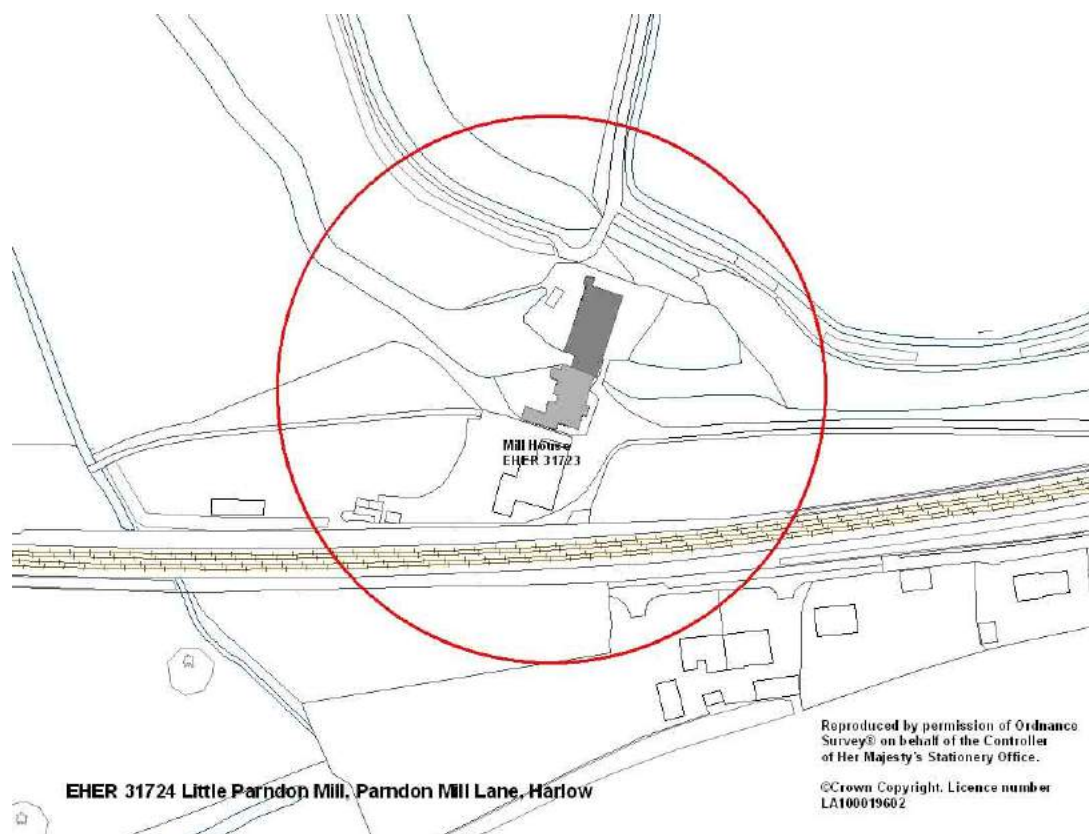
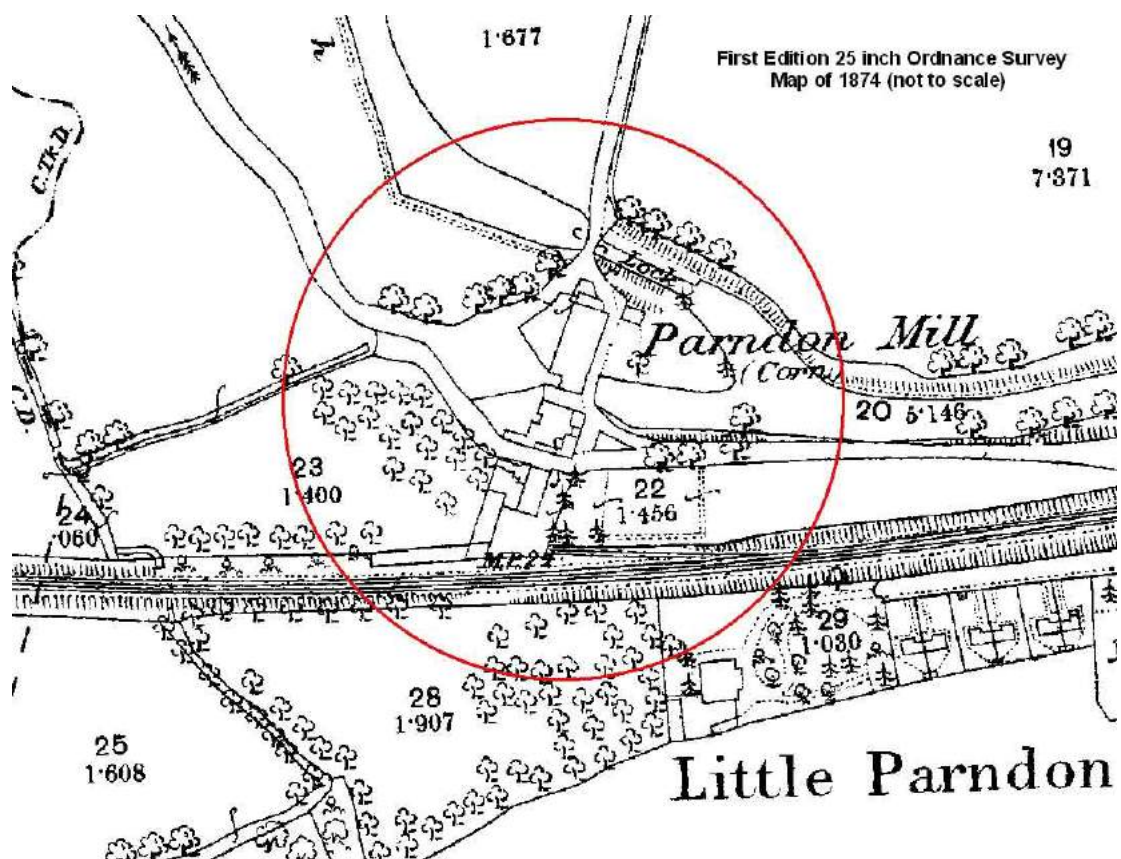
RECOMMENDED ACTION

Maintain current Grade II listed building status

MANAGEMENT

Parndon Mill is presently in use as office/studio accommodation and well maintained, apart from the brickwork of boiler house chimney, which requires some attention. A detailed historic building survey at RCHME level 3 should be recommended if the mill building or parts of its surviving technology are threatened by major works or demolition.

GRADING **/**





Parndon Mill and Mill House looking north-north-west

MALDON DISTRICT

EHER	Site Name	Grade
Watermills		
39094	Blue Mill, Blue Mill Lane, Woodham Walter	*/**
40154	Langford Mill, Maldon Road, Langford	**/**
38918	Little Braxted Mill, Little Braxted Lane, Little Braxted	***
Steam Mill		
38244	Beeleigh Mill, Abbey Turning, Beeleigh	***/**
38283	Fullbridge Mill, Mill Lane, Fullbridge	**
15063	Rayleigh Mill, Station Road, Fullbridge	*



SITE NAME Beeleigh Mill, Abbey Turning			
PARISH	Maldon	DISTRICT	Maldon
NGR	TL 83964 08182	HER	38244
RIVER	Chelmer	EHUID	464213
CURRENT STATUS	Con. Area Yes	Listed Grade II*	EBAR No

STATUTORY LIST DESCRIPTION

24/09/1971

Steam mill, ruins of water mill and bridge. Early C19. The steam mill is of a mixture of red and cream gault brick with a hipped slate roof with blue clay ridge and hip tiles. EXTERIOR: 2 storeys with embellished elevations to NE and SE towards Beeleigh Falls House (qv). The SW elevation is part of gault and part of red brick with a series of circular tie-bar plates. A large semicircular-arched opening faces onto a sunken external area, providing access to the engine which is visible within. Door opening with segmental head and further small openings now blocked or concealed by ivy. The short NW elevation is of gault brick with a central small segmental-arched opening with cast-iron window of 24 small panes. On the north corner is the base of a former chimney, now truncated, which wraps around on to the NE elevation. The NE elevation has 4 broad semicircular-arched recesses with similar 24-pane iron windows to the lower storey. The SE elevation is similar, but with cast-iron windows to both storeys, and of 2 semicircular-arched recesses. The remains of the water mill to the SW consist of a rectangular enclosure of walling of varying height with some gault and some red brick. Some former door and window openings survive and 2 large chambers for former breast-shot water wheels and 2 barge docks for unloading flour and grain. To the SE is a bridge now giving access to former mill house, Beeleigh Falls (qv), with red brick parapets, stone copings and 2 semicircular arches. INTERIOR: the steam mill is divided into 2 compartments, separated by a brick partition. The smaller north-western part is open to full height and contains the complete iron, double-acting compound steam engine of 1845, by Wentworth. Alongside is an 'Elephant' boiler with 2 safety valves and firebox. The ground-floor chamber in the main body of the building contains an iron upright shaft with great spur wheel, the driving machinery and a circular-plan iron husting. Designed to house 5 pairs of stones, the emplacements and upper ends of drive spindles remain on the upper floor. The former watermill was a large 5-storeyed weatherboarded mill with 12 pairs of stones and 2 water wheels, and was destroyed by fire in 1879.

JOHN BOOKERS SURVEY:

07/04/1971

The watermill was damaged by fire in the late C19 and has long been abandoned. The head race has been filled in but waterwheel pits are still in evidence with faint traces of bearings; there are two moorings for barges which used to pass under the access road to the mill house. The former steam mill is of two floors with internal division; at NW end of the ground floor is a boiler and an A frame compound double acting beam engine, quite complete, with circular plaque: J A S WENTWORTH AND SON ENGINEERS STARTED AUG. 1845: flywheel c.18ft diameter: the boiler chimney has been removed. SE part of the ground floor houses the milling gear; the drive shaft from the beam engine passes through the wall and terminates in a crown wheel engaged with the wallower, and set within a circular brick podium surmounted by wooden beams carrying 6 cast-iron columns supporting the weight of the stones on the floor above. A shaft rises from the wallower to the spur wheel, c.12ft diameter, which engages with 5 cast-iron stone nuts, each of which can be disengaged from the spur wheel, which is itself (as is the wallower) of cast-iron, but with wooden teeth. The five pairs of stones have disappeared. Presently owned by Essex Water.

Present Use: Disused

Condition: About to be restored

ERO SOURCES: (D/DDc Z1), (D/DHn T 2,4,20-22), (D/DQt 114),

SITE BACKGROUND:

Beeleigh Abbey, founded c.1180 by the Premonstratensian Order, held a mill by 1189 until the suppression in 1536. After the dissolution Sir John Gate alienated (transferred) the mill to William March whose son Will March sold it in 1559 to John Wiseman of Felsted. In 1573 the mill was leased to Thomas White of All Saints, Maldon while in the will of Thomas Brett dated 1594, Beeleigh mill was bequeathed to his son John Brett. At the beginning of the 18th century the mill had come into the possession of the Strutt family, a notable family of millers who also owned or leased mills at Moulsham, Springfield, Hoe Mill and Wickham Bishops. Between 1706-1747 John Strutt was the miller and his nephew also John Strutt and John Crosier Snr. worked as his apprentices. His nephew (John Strutt) bought the mill from his uncle in 1753 but was more interested in pursuing a profession outside milling and became the Member of Parliament for Maldon from 1774-90. John Crosier Snr. purchased the mill from John Strutt M.P. in 1777 and worked there until 1793. The Navigation Company purchased the mill in 1793 to ease the legal difficulties caused by the construction of the Chelmer and Blackwater Navigation but two years later sold it at a loss to John Dunkin of Southwark. Dunkin and his partner Mr Stammers (of nearby Stammers Farm) rebuilt the mill which partially remains today. A contemporary article dated 1807 describes the newly built mill *'The waterwheel is 24ft in diameter and receives the water a little above the centre.....all the barges come under the mill for loading and unloading'*. In 1834, the mill, working ten pairs of stones and two water wheels, was sold to Joseph Ward of Merton Hills who 11 years later (1845) added the steam mill, beam engine and five more pairs of stones. It is probable that he also built the adjacent Beeleigh Falls House around 1850. On the 12th of March 1875 the five storey watermill was gutted by fire leaving only parts of its brick walls and the steam mill upstanding, although the latter lost its roof and windows. Following the fire the owner Henry Ward decided not to rebuild the mill and the ruins, comprising two water wheels, steam mill, 12 HP engine, boiler house and freehold land was bought by Christopher Cail in 1839 for £2820. His initial intentions were to rebuild Beeleigh but due to changes in his circumstances this never materialised. In 1960 the site passed into the hands of the Essex Water Company who re-roofed the steam mill to preserve its historic apparatus. The lease was acquired by Essex County Council in 1995 with the intention of renovating the steam mill and bringing it back into operational use. In 1995 the Maldon Archaeology Group undertook an archaeological excavation and programme of consolidation within the ruins of the former watermill (M.A.G, 1997).

Field Survey 2007

30/01/07

The mill **headrace** has been filled in (after 1924). The ruined watermill comprises a collection of its lower brick walls, two brick-lined barge docks and unroofed wheelpits. To the north is the extant steam-engine house containing the remains of the steam boiler, engine and mill gearing and to the southeast, the now dry tail-race. North of the tailrace and approached by a bridge with stone copings and two arches is Beeleigh Falls House, an elegant mid-19th century gault brick residence with an iron work veranda and hipped slate roof.

The (destroyed) watermill was once powered by two large waterwheels located within its northern and southern bays. Analysis of the sluices and gates suggest the northern wheel was a **high breast shot** wheel while the southern was **breast shot**. The exposure of the both wheel pits and foundations during the 1995 investigations by Maldon Archaeology Group (MAG) indicate the northern wheel powered a

conventional gear train which drove six stones set like satellites around the circumference of the **spur gear**, while the southern stones, more unusually, were arranged in-line. The introduction of the in-line gears may have occurred around 1840 and at the point when Joseph Ward advertised for sale a complete set of conventional mill gearing (M.A.G. 1997)

The steam mill is a two storey brick structure built over two main construction phases and with a common slate covered hipped roof. The earlier (visible) structure comprises the red brick English Bond walls with (some) burnt headers that forms the lower walling of the western bays and the full height of the eastern bays. The later brickwork overlies the lower courses of the western elevation and comprises yellow brickwork also laid in English Bond. This sequence is apparent in the arch built over the elephant boiler whose jambs and lower arch are in red brick while the arch head is in yellow brick. Immediately to the south and below the boiler arch is the brick-lined fire/stoking pit and the cast-iron front of the boiler furnace. An adjacent internal wall (E) also in yellow brickwork suggests an internal reworking of this area, possibly associated with the introduction of the boiler and undertaken to isolate the stoking pit from the rest of the floor. The two tall slots present in the earlier brickwork on ground and first floor to the east of the engine/boiler house were most probably the conduits through which the steam mill and watermill were linked. It is probable that a **layshaft** transferred drive from the steam engine to power auxiliary machinery or the millstones in the watermill when water levels were insufficient. The upper slot may have also facilitated the transferral of grain via chutes or conveyors from the main grain bins on the upper floors of the watermill.

Internally the condition and integrity of the steam engine, furnace and boiler and the main gearing which once drove the stones has changed little since the list description was produced and Booker visited the site in 1971. The steam mill is divided into 2 compartments, separated by a brick partition wall. The smaller north-western area is open to full height and contains the complete iron, double-acting compound steam engine of 1845, by Wentworth. Alongside is an egg-ended Elephant boiler with 2 safety valves and firebox. The compound steam engine is fully intact and comprises a large 6 spoke cast-iron **flywheel**, **crankshaft** and **connecting rod** driven by a beam which rocks on top of an A-frame under steam pressure. The crankshaft ultimately turns a drive shaft which passes through the intervening wall to drive a pair of bevel gears redirecting the drive from horizontal to vertical. The ground-floor chamber in the main body of the building contains an iron **upright shaft** with a cast-iron **great spur wheel** with wooden cogs and 5 iron **stone nuts** with **disengagement jacks** and a circular-plan iron **hursting** on a brick plinth. The emplacements and upper ends of drive **spindles** remain on the first (stone) floor but the 5 pairs of stones have been removed.

Present Use: Redundant awaiting conservation by ECC

Condition: Good

Sources: Maldon Archaeology Group, 1997, The History of Beeleigh Mill

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	High
Mill House	C19	Brick	Med
Watermill (ruins)	C18	Brick	Med

ARCHAEOLOGICAL POTENTIAL

Despite the extensive loss of Beeleigh watermill to fire the site still provides enormous potential for the archaeological investigation of the ruins and study of the engine, boiler and steam mill gear.

SITE SIGNIFICANCE

The steam mill retains one of only two intact compound steam engines with a milling association within Essex. The other example, at Baker Street, Orsett, retained only as a feature when the steam mill was converted to residential use. In a wider context it forms part of a small handful of similar steam engines within the eastern region and the only steam mill in Essex to retain both its power generating apparatus and significant levels of its mill gearing. Of more significance is that unlike the Baker Street steam engine, the example at Beeleigh has the potential and following its conservation by the ECC Mills Team, the opportunity to be restored back to a working condition.

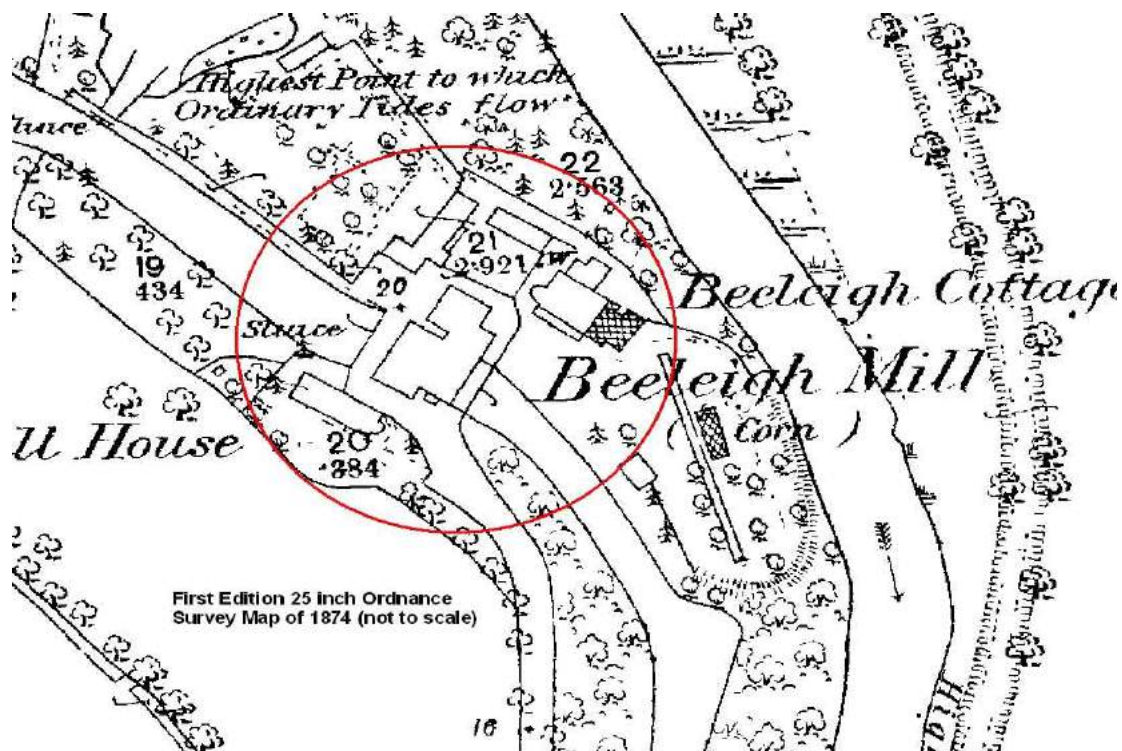
RECOMMENDED ACTION

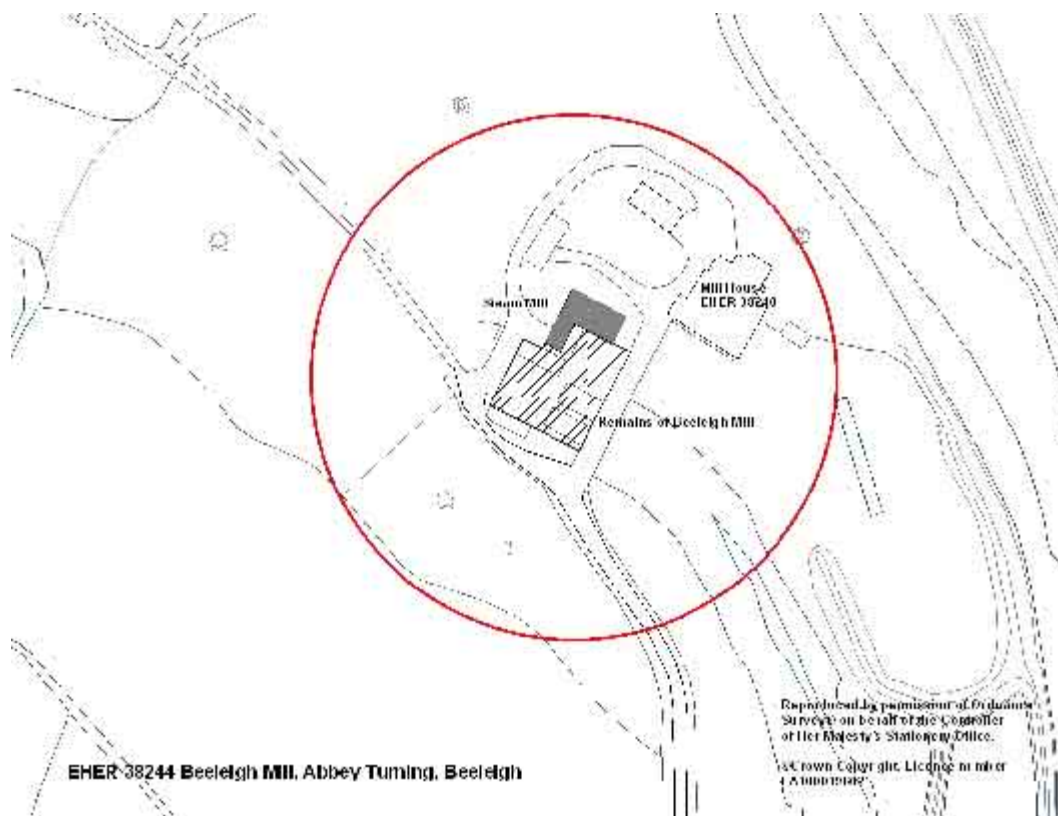
Maintain listed status at present level

MANAGEMENT

Full and detailed survey of the existing mill building, the former watermill and more specifically the surviving steam engine, boiler and stone gear by a specialist to record and inform future conservation works

GRADING *** /****





Beeleigh Steam Mill looking north-west



Beeleigh Mill Compound Steam Engine of 1845

SITE NAME	Blue Mill, Blue Mill Lane		
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PARISH	Woodham Walter	DISTRICT	Maldon
NGR	TL 81250 07658	HER	39094
RIVER	Chelmer	EHUID	427073

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION	14/11/1985
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Mill and Mill House now dwellings. C18 origin. The former mill is timber framed and weatherboarded with C20 alterations. The house red brick, gambrelled red plain tiled roof, 2 gabled dormers with brackets to barge boards. Left red brick chimney stack. 2 storeys, attics and basements. Parapet, dentilled band under, central band. 3 window range of small paned vertically sliding sashes, gauged brick arches, internal shutters. Central 6 panelled door, semi-circular light, moulded surround, frieze, open pediment on brackets. Cast iron railings to left of door enclose the front left garden. Single storey extension to left with 2 C20 casements. The former mill to right, 2 storey 3 window range of C20 casements, with door to right. Documentary evidence relates to "my newly built mill - 1729".

JOHN BOOKERS SURVEY	10/01/1971
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Small C18 2 storey weatherboarded mill adjoining an attractive 3 storey, tiled and red brick mill house. The mill is set on a small tributary of the Chelmer, no longer has machinery and the head and tail have been backfilled. The mill probably stopped working around the turn of the C20 and was used for many years in connection with market gardening and water cress growing. Blue mills is mentioned in the will of a Little Baddow miller dated 1790, as a newly erected mill at Woodham Walter. Between 1802 and 1805 it was occupied by Wm. Jones a Chelmsford leather dresser and subsequently by Joseph Riley.

Present Use: Engineering works

Condition: Recently repaired

ERO SOURCES: (D/DHt T 11/1), (D/DDW T 65), (D/F 21/1, No. 70)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

There is a tradition that Blue Mills was once powered from three sources, wind, water and steam and this suggestion is supported by local residents who insist its proper name is Blue Mills i.e. in the plural. The mill was worked in the 1820s by Joshua Riley and by 1848 by Robert Marriage. It probably ceased working as a mill by the close of the C19 and was subsequently used for both farming and market gardening until it was bought, derelict, by Mr M. Nolan who restored it as his home and electronics workshop (Benham, 1976).

Field Survey 2008	01/04/08
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Blue mills is situated to the eastern side of Woodham Walter, along Blue Mills Lane and adjacent to a small stream which flows north to join the river Chelmer and the Chelmer and Blackwater Navigation. The stream runs along the western side of the site nearest to the mill house. The positions of the original mill leat and tail remain unclear. The site still comprises a C18 timber framed and weatherboarded mill building with a pitched plain tile covered roof and to the west an in-line timber-framed mill house with a red brick front and a plain tile Mansard roof. The mill is built over three storeys with modern windows inserted into the ground and first floors. It does not have a lucam, typical of many Essex mills, and appears to have been extensively

modernised during its reuse for domestic purposes. The timber framed mill house is built over 3½ storeys with a red brick refronting to the ground and first floors of the façade and gabled dormers in the attic storey above a parapet wall. The end and rear elevations are weatherboarded. A modern residential extension is located to the rear of the mill house while converted former outbuildings lie immediately to the east. Internal access was not possible.

A pair of C19 mill workers cottages, built between 1875-1897, are situated to the south-east of the mill on Blue Mills Lane. They are two storey brick built cottages with a rendered first floor, slate covered, hipped roofs and a central axial stack.

Present use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Mill	C18	Timber	Med
Mill House	C19	Brick/Timber	Med
Mill Cottages	C19	Brick	Med-Low

ARCHAEOLOGICAL POTENTIAL

The mills conversion to domestic use appears to have significantly impacted upon the survival of original internal spaces, technology, fixtures and fittings.

SITE SIGNIFICANCE

An unremarkable country watermill whose historic and architectural significance has been considerably diluted by its conversion to residential use. The mill site has suffered by unsympathetic accretions built to the rear of the mill house and the re-routing/backfilling of the mill leat. It has group value with the mill house and mill cottages.

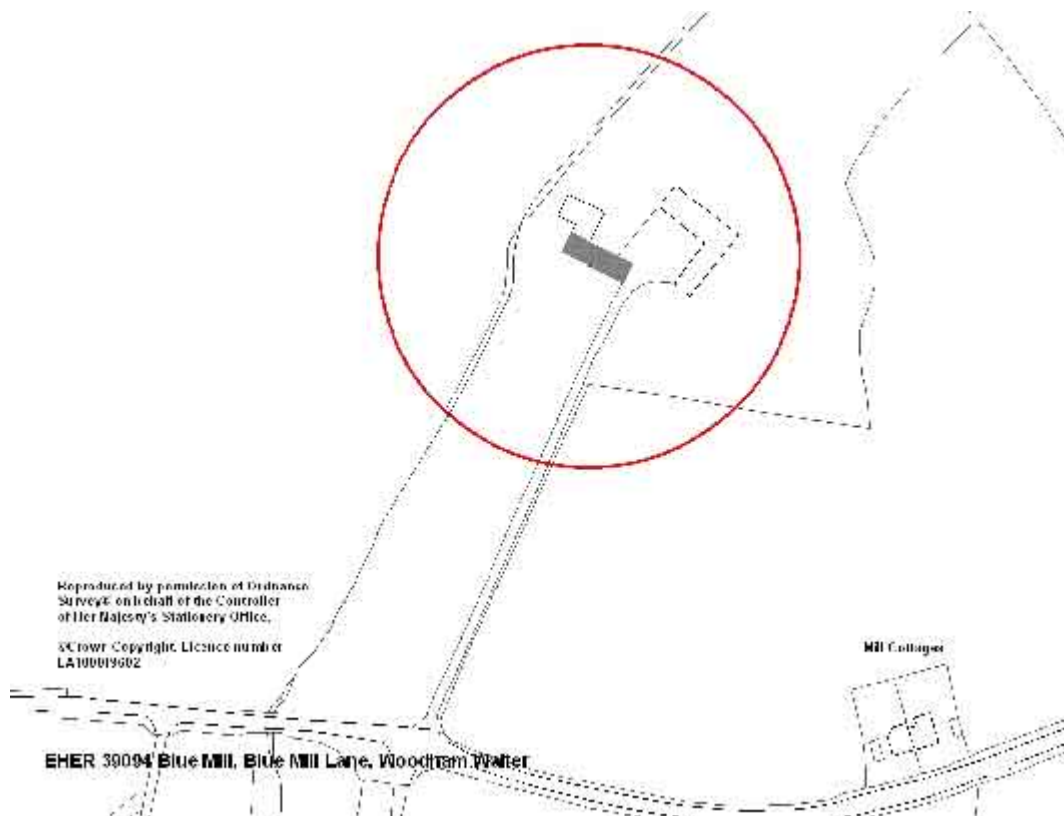
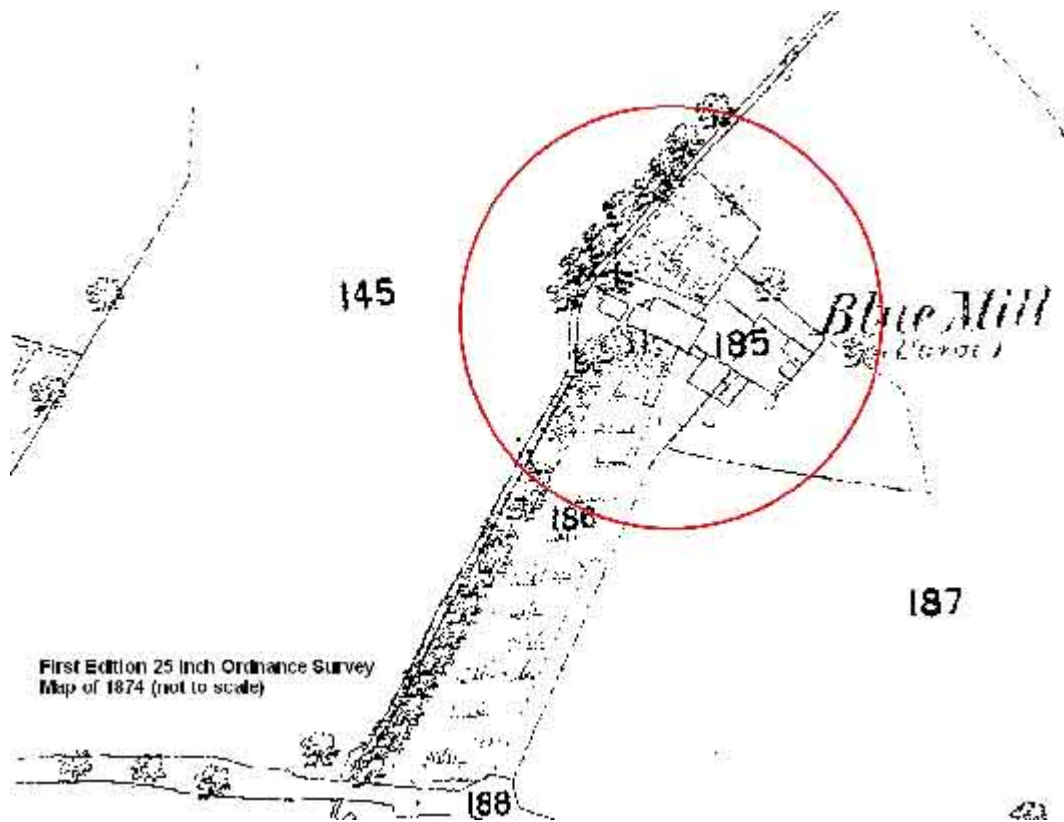
RECOMMENDED ACTION

Maintain listing at Grade II for group value only

MANAGEMENT

Blue Mill is presently in residential use and in a good condition. A detailed historic building survey at RCHME level 3 should be recommended if the mill and/or associated buildings are threatened by major works or demolition.

GRADING */**





Blue Mill and Mill house looking north-east

SITE NAME	Fullbridge Mill, Mill Lane, Fullbridge		
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PARISH	Maldon	DISTRICT	Maldon
NGR	TL 85114 07386	HER	38283 & (40720)
RIVER	Chelmer	EHUID	464327

CURRENT STATUS	Con. Area Yes	Listed Grade II	EBAR No
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STATUTORY	LIST	DESCRIPTION
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24/09/1971

Flour mill, now offices. Late C19. London stock brick with yellow/orange segmental brick arches over openings; slate roofs with gable parapets. T-plan form and with taller extension on south-east side. EXTERIOR: 3 storeys. Major elevations have industrial-type windows set in bays defined by pilasters with moulded-brick. Doric capitals. Windows generally are of large panes with painted timber mullions and iron horizontal glazing bars; upper part above transom forms full-width ventilator. The front (south-west) elevation has 7-bay forward projecting part of a lower storey height with stepped gable over. The latter has a rectangular window in centre and circular windows either side. On the centre of the 1st floor is a semicircular-arched window with radiating glazing bars, the lower part altered. The south-east elevation of main block to river has a circular window in gable and altered loading doors on each floor, now with attached metal staircase and hoist. The equivalent north-west elevation has square window in gable. Ventilator cowls on roof. INTERIOR: extremely large, softwood bridging joists, in main range, supported on central row of cruciform-plan cast-iron columns.

JOHN BOOKERS SURVEY

13/09/1971

Three storey brick and slated building with an even pattern of large windows divided vertically by buttress strips. The uncharacteristic long low appearance of the mill stems from its previous use. It was described as a newly erected factory in 1879 for the Bentall Brothers, manufactures of taps and dies. This venture was unsuccessful and the building was acquired by Robert Eve, a Maldon corn merchant in 1889 and converted into a corn roller mill and renamed 'The Steam Roller Mills'. It was run first by messrs. O.D & L Belsham and later by E.T.Baker of Langford, who with S.H. Baker acquired ownership of the mill in 1897. While it was in Belshams occupancy an adjoining 3 storey granary was built. The mill building to the east was presumably a later venture in roller milling, and it still works today.

Present Use: Disused

Condition: Some superficial damage

ERO SOURCES: (D/F 21/22, 21/24, 21/25, 21/26)

SITE BACKGROUND:

Fullbridge Mill is sited to the north of Maldon town centre and within an area of industrial development extending along riverside, immediately east of Fullbridge and on the northern bank of the river Chelmer. The former steam roller mill faces onto the road (Fullbridge) and lies adjacent to Mill Lane, presumably associated with an earlier watermill located to the west. The mill is now subdivided to accommodate a number of office based businesses.

Field Survey 2007

15/11/2007

The original layout adopts a T shaped plan with a central 5 bay 3½ storey projection to roadside and a taller 9 bay 3½ storey perpendicular range to the rear. A modern off-centre addition extends to the rear (east) of the taller rear range. Dating to 1879,

the mill is constructed in yellow brick, with slate covered gable ended roofs and is built in pier and panel construction with external pilasters capped below an eaves band by simple brick capitals. Apart from the modern accretions the mill is a symmetrical building with a central forward set 5 bay range crowned by a geometric pediment, with two bulls eye windows, brick kneelers and a brick gable parapet. Apart from a central arch headed window on the second floor, the window apertures are mainly segmental headed with code stone sills. The 'industrial-type' windows described in the List Description and in Bookers Survey have been replaced throughout with modern multi-pane timber casements. The central doorway at ground floor has an ornate timber surround. The rear range is built with larger window apertures which conform to the style and replacement already mentioned. A former taking-in door converted to a window is present in the northern bays, while a tier of loading doors remain at each floor level in the southern gable end wall. These have since been reused to provide access to an external iron fire escape. Triangular dormers have been inserted into the outer bays of the roadside roof pitch while large ventilator cowls project through the rear roof plane. Internal access was not gained.

Present use: Office Accommodation

Condition: Good

Another, later roller mill building (EHER 40720) is sited immediately east and to the rear of Fullbridge Mill. As this mill appears to share the same site as Fullbridge it was presumably part of the same operation. It was served by its own wharf to the east (now infilled) and is typical of many modern flour mills built with multiple storeys and roofs clad in either corrugated iron or asbestos sheeting. Most noticeable is the taller silo range and elevator tower and loft fronting onto riverside. A lower gabled roller mill range projects to the rear (north) while a modern single-storey (? sacking/distribution) building lies to west. Grain/flour chutes from the elevator head in the taller silo range connect with both aforementioned buildings to the north and west. The mill is now redundant and beginning to look dilapidated.

Present use: Redundant

Condition: Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Med
Steam Mill (EHER 40720)	C20	?Steel	Med-Low

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of alterations associated with its conversion to residential use, no significant technology, fixtures or fittings are expected to survive. However, as the later roller (EHER 40720) presently lies redundant and appears, externally, to be little altered, it may well retain much of its milling technology, such as roller mills and grain movement systems.

SITE SIGNIFICANCE

The pair of mills at Fullbridge form part of a group of 27 steam powered corn and textile mill buildings that remain in Essex. The listed Fullbridge mill, in common with the majority of C19 brick built steam mills has been converted into apartments or reused in an office/commercial context and as such retains little of its technological significance. The building does retain architectural interest, contributing to the character of the quayside and Conservation Area covering Fullbridge. It also shares group value with other surviving C19 industrial buildings in the area, including the

remains of Rayleigh Mill, Maldon Ironworks, the former GER Goods Shed and Maldon East Station.

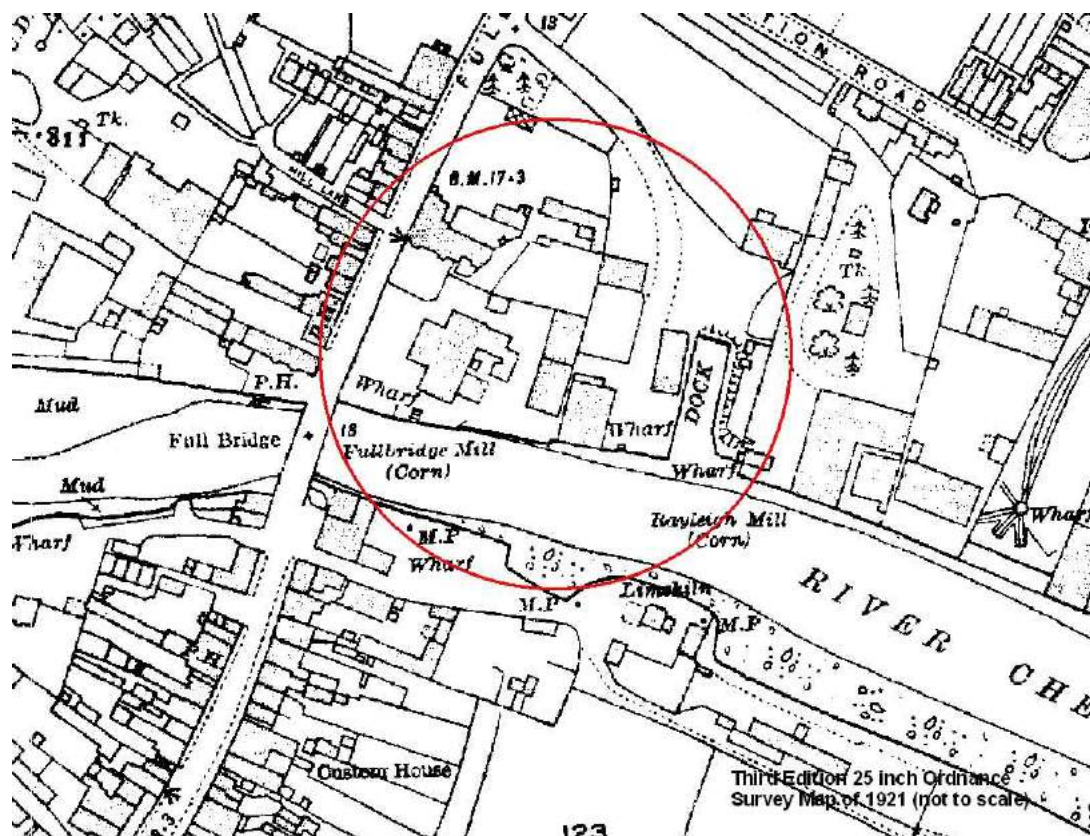
RECOMMENDED ACTION

Despite its alterations, maintain the current Grade II listed status for Fullbridge Mill. The adjacent C20 steam mill does not merit listing nor would it enhance the character of the Maldon Conservation Area by its inclusion, but its local historic importance, based on contribution of the flour mills to the development of the quay and industrial area around Fullbridge, should be recognised in future Local Development Documents covering this area of Maldon

MANAGEMENT

Fullbridge Mill is presently in commercial use and well maintained although the adjacent flour mill appears to be redundant and semi-derelict. Should the opportunity present itself an internal inspection of the C20 flour mill is recommended and/or an historic building survey at an appropriate level should be advised if either mill becomes threatened by significant alteration or demolition.

GRADING **



SITE NAME Langford Mill, Maldon Road			
PARISH	Langford	DISTRICT	Maldon
NGR	TL 83715 09021	EHHER	40154
RIVER	Chelmer	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

07/04/1971

Brick and Slated mill of 5 floors erected in 1879 on the site on an earlier mill destroyed by fire. Although not of obvious architectural merit it is unusual to find such a large late Victorian stone (as distinct from roller) mill in such good exterior preservation. The 3rd floor face is divided from the floor below by a brick stringcourse which is joined by pilaster strips at the quoins, and between the windows, which are carried up through the windowless 4th floor to the cornice. The weatherboarded lucam is unusually large and is central above two other loading doors. The building is said to have been store since its machinery was removed in 1924.

Present Use: store

Condition: Fair

ERO SOURCES: (D/DAC 171,2), (T/P 147), (D/F 21/22)

SITE BACKGROUND:

Nicholas Westcombe rebuilt a Langford Mill in 1776, a short time before 1792 when he embarked on an extensive engineering project involving the construction of an artificial cut from Langford to join with the River Chelmer and thus provide navigable access to his newly rebuilt mill. The Navigation's Long Cut, which joined the Chelmer to the Blackwater rivers east of Beeleigh Lock rendered the southern end of Westcombe's Cut redundant and subsequently much acrimonious correspondence was exchanged between the navigation company and Mr Westcombe. In 1811 Jonathan Stammers (of Stammers Farm) leased the mill from John Westcombe although by 1838 John Piggott had taken over the lease. Langford Mill was described in contemporary accounts as 'a very fine mill, with ten pairs of stones working six or four, a 22ft, 9ft wide waterwheel, 10ft fall of water and a navigation and wharf. The mill continued to be worked by John Piggot & Son who traded in fertiliser guano, rape cake, linseed oil, coal and also owned Paper Mill, Little Baddow Mill and a wharf at Springfield until 1870. After 1870 Frank Tew Cantrell (also of Paper Mill) bought the mill from Lady Byron of Langford Manor. This five storey water and steam mill was destroyed by fire in March 1879 but was rebuilt in brick and slate to designs prepared by Fredric Chancellor by the end of the same year (ERO D/F 8/310). The present mill bears the date 1879. The last working barge carrying wheat up the cut to the mill was in 1881 but it continued under Edward Lee Baker and then Bradbury and Bryant up to the First World War supplying flour to a large London baker. After the war there were plans to convert it to a roller mill but the owners Tucker & Galleon failed and the mill was purchased by the Essex Water Company who still own it (as Essex and Suffolk Water) to this day. In 1924 the Essex Water Co. removed the mill machinery to install a large extraction pump and it is now mainly used as a store.

Field Survey 2007

15/11/2007

The Langford or Westcombe Cut terminus remains extant to the south of the mill although without further investigation, the survival of associated wharf structures remains unclear. To the south-west of the mill is the C19 Mill Cottage and to the east, Mill Mansion or Mill House (EHHER 38961), a three storey C17 house with a C18-19 re-fronting, now used as a residential nursing home.

The present Langford Mill was built in the later C19 and is a robust brick built mill with plain elevations and a slate covered gable ended roof. It is a five bay mill, built over 4½ storeys with red brick used for the lower two storeys and yellow brick for the upper storeys and gable ends. Red brick external strip pilasters are spaced at bay intervals and red brick floor and eaves bands criss-cross the yellow brickwork of the upper walls. Contrasting red brickwork is also used in the segmental rough brick arches of the window apertures of the upper windows, although this theme of contrasting brickwork is not repeated in the window heads of the lower walls. The brickwork throughout is laid in English bond. Window apertures are evenly spaced at one per bay across and either side of a central tier of taking-in doors at first and second floors. Windows were not included at third floor level as this floor was used for grain storage, although smaller windows and bulls-eye windows were included in the gable apex to light the attic storey. Central to the roof and directly above the taking-in doors is a large weatherboarded gable ended **lucam** cantilvered out from eaves level and supported from beneath by timber knees. Directly below the lucam is a terracotta date plaque reading 1879. The windows are all replacement modern late C20 units replicating a multi-pane casement and the doors are simple vertical boarded doors which may be original. A departure from the symmetrical nature of the mill occurs in the rear north-eastern bay which continues above the eaves line to form a tower-like structure capped by a fully hipped roof. It is likely this structure formerly held a header tank for the steam powered apparatus and/or accommodated an elevator loft. Although both waterwheels have been removed the external wheel pit remains along the western gable end wall. Lined out in blue engineering bricks the wheel pit still receives water from the mill **leat** but via a modern drainage pipe which skirts around the mill to the north. The tail water runs through a brick culvert that extends below the road and rejoins the Langford Cut some c.130 to the south. The bulk of the river water is now directed away from the mill and back into the natural course of the river, which runs to the west, via a weir sited at a short distance to the north.

Present use: Storage

Condition: Good

Sources: ERO D/F 8/310

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C19	Brick	Med
Mill House	C17 & 18/19	Brick/Timber	Med
Mill Cottage	C19	Brick	Low-Med
Langford Cut	C18	/	Med-High

ARCHAEOLOGICAL POTENTIAL

The removal of the mill technology and its subsequent use as a store will have undoubtedly impacted upon the survival of original internal spaces and levels of technology, fixtures and fittings. The mill occupies an historic milling which may preserve significant archaeological evidence of former sluices, watercourses and/or building remains.

SITE SIGNIFICANCE

Langford Mill survives as one of only two complete mills designed and built by Fredrick Chancellor & Son. Although its significance has been compromised by the removal of its milling technology (as have many listed mills), the building has not suffered unduly from modern accretions and retains an distinct architectural integrity and readability. It also forms part of a small group of historic industrial buildings and

monuments in Langford, including the scheduled Langford Pumping Station, Langford Mill House, Mill Cottage and the important Langford Cut.

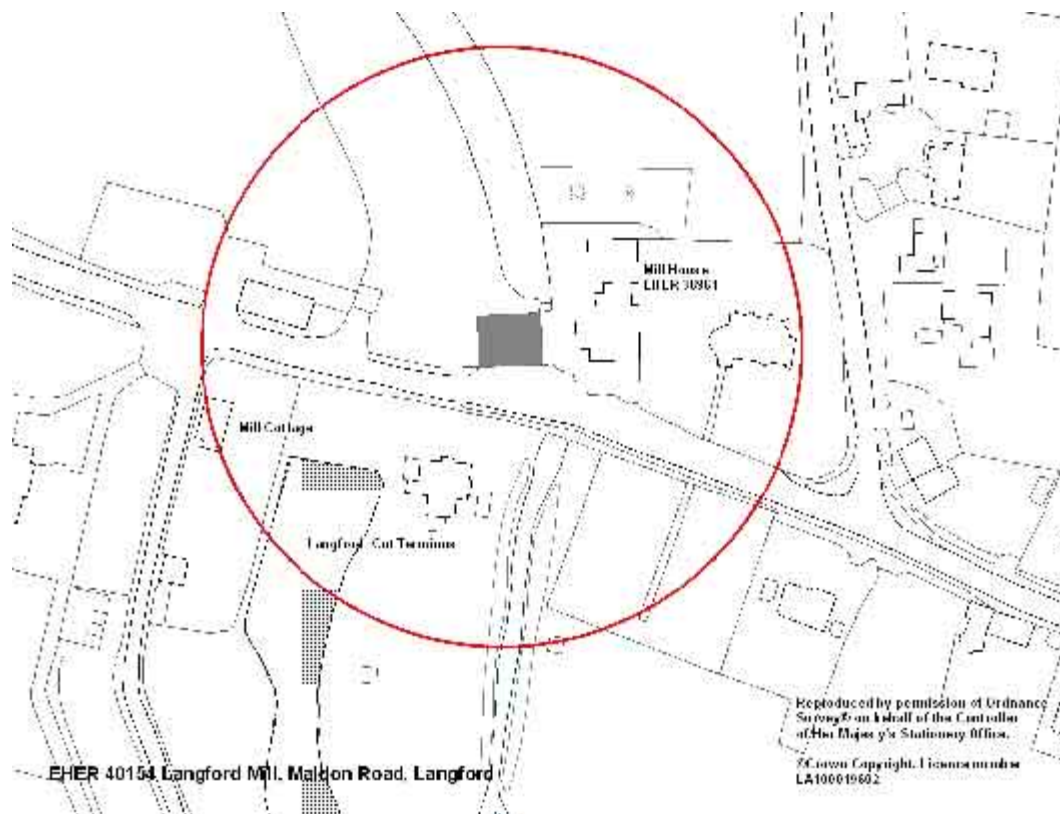
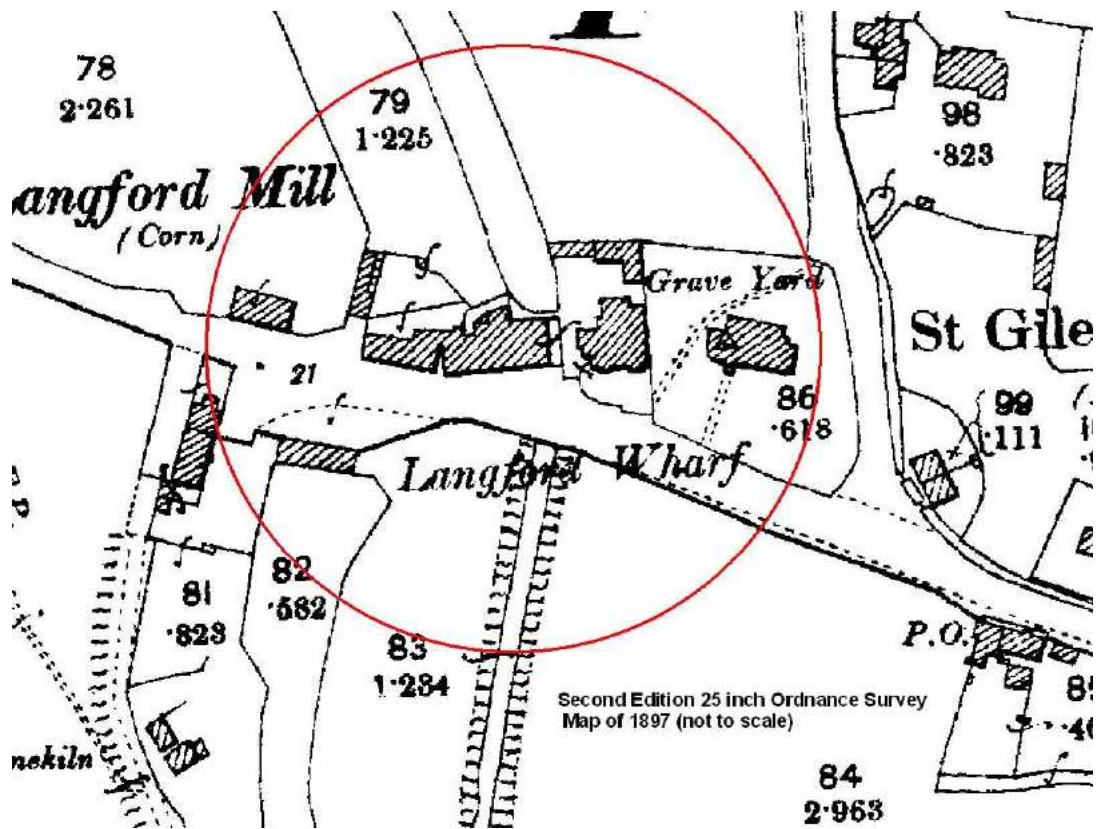
RECOMMENDED ACTION

Langford Mills associations with local architect Fredrick Chancellor may merit it statutory protection through listing, but this may depend upon the extent of internal alterations, as some minor external alterations have already been made. It is protected through its inclusion within Chelmer and Blackwater Navigation Conservation Area and should be included on a list of locally important buildings and recognised within Local Development Documents covering the Langford area.

MANAGEMENT

Langford Mill is presently in use as a storage facility by Essex and Suffolk Water and is well maintained. An historic building survey at an appropriate level and/or a programme of archaeological works should be advised if the mill becomes threatened by significant alteration or demolition.

GRADING **/**





Langford Mill looking north-north-west

SITE NAME	Little Braxted Mill, Little Braxted Lane		
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PARISH	Little Braxted	DISTRICT	Maldon
NGR	TL 83364 14748	EH	38918
RIVER	Blackwater	EHUID	118985

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

30/12/1959

Former water mill and mill house now 2 dwellings on the site of former water mills. C18 with medieval core and C19/C20 alterations. One long building, the former mill to left, mainly weatherboarded with brick facing to right ground and first floors. Weatherboarded lucam with straight timber brace supports to left return. Red brick chimney stack to right. Mill House to right of red brick with right second bay breaking forward. 2 red brick chimney stacks. 3 storeys. 4 window range of small paned vertically sliding sashes, some of 3 lights. 4 window range to former mill of various small paned vertically sliding sashes and 2 light casements with glazing bars. Vertically boarded door to mill, 4 panel 2 light door with reveal panels, frieze console brackets, open pediment with dentilled soffits to Mill House. Attached to the central red brick wheel arch (now blocked) is the red brick road bridge of one arch with semi-circular coping.

JOHN BOOKERS SURVEY

02/07/1971

Long attractive building presenting combined frontage with mill house. The mill (S) is weatherboarded, 3 storeys, part brick-faced on E. front and projecting lucam on S. side. The rest of the mill which accommodated the wheel and principal machinery and the mill house are mainly brick. The mill house is 3 storey with on the N. side a 4 window range of double hung sashes with glazing bars.

Present Use: Private residence

Condition: V. Good

ERO SOURCES: (D/DQt 67), (D/CP 21/1)

SITE BACKGROUND:

The manor of Little Braxted formed part of the lands of the Bishops of London and was held by Hugolin for the Bishops (Morris, 1983). A mill is recorded in the Domesday book (1086) and given the proximity of the mill to the Church of St Nicholas and the Hall, which both lie at a short distance to the east, it continued through the medieval period as a manorial mill to Little Braxted Hall. The last miller to work Little Braxted mill was Samuel Martin Soundy who came to Little Braxted after completing his apprenticeship at Temple Mill in High Wycombe and by 1884 was the President of the Association of British and Irish Millers. By 1886 he moved onto the Abbey Mills in Reading and the mill closed. At this early date the watermill and mill house were subsequently divided up and converted into two separate residences. The wheel race and wheel shaft were retained as features during its conversion and the shut mechanism maintained to help clear detritus from the adjacent mill pond. The wheel shaft formerly held a small wheel of only eight feet in diameter, although this appears to be one of a pair as another race ran under the mill at a short distance to the NW. The tail of the second wheel is still visible but the front culvert was blocked up when the road, originally running around behind the mill and crossing the river at a ford below the mill tail pool, was re-directed to pass across the front of the mill and a new bridge over the leat was built (Benham, 1983).

Field Survey 2007

15/11/2007

Following the re-routing of Little Braxted Lane the mill was extended out over the line of the earlier road with the addition of the timber framed and weatherboarded bays to the SE. When viewed from the rear this structural development is much clearer. The earlier watermill comprises an C18 5 bay 3½ storey red brick mill with a plain tile Mansard roof. Its Mansard extends the entire 5 bays but survives only on rear roof plane, as the front roof was reworked to form a continuous slate covered pitched roof running the length of the entire range, including the later extension. The roof to the rear of the Mill house is also at odds with that viewed from front (roadside) as it is also covered in plain tiles and is a cat-slide built over a weatherboarded rear extension. The division between the mill and the mill house is noticeable along the frontage, primarily by the weatherboarding which extends along the upper storey of the mill and by a distinct change in the colour and style of brickwork between the two builds. The fenestration across the mill façade is relatively symmetrical (despite it being at least two periods) but less so on the rear elevation. It comprises a mixture of C18, C19 and later multi-pane sash windows and casements of various sizes and styles. The main windows of the mill house are larger late Georgian sashes with marginal lights (at ground and first floor) with much smaller sashes on the top storey. A weatherboarded lucam supported on slightly curved brackets projects out from the later SE gable end of the mill. Unusually the lucam roof is pitched above the apex of the adjoining range and does not over-sail as is the style common to Essex.

Apart from some alterations/re-newel of its fenestration the present mill is still recognisable from the list description. However, as access was not possible the suggested survival of a medieval timber framed core, a wooden wheel shaft and various fixtures and fittings, plus the extent of the damage following the fire in 1990 (Bettley, 2007) remains unclear.

ARCHAEOLOGICAL POTENTIAL

It is unlikely that any internal technological apparatus, fixtures and fittings, apart from that retained in the initial conversion survives within Little Braxted Mill. The mill does however occupy a very ancient manorial milling site and as such retains significant potential for archaeological survival.

SITE SIGNIFICANCE

An interesting country watermill occupying a manorial site which is clearly built over many periods and reportedly still retains a medieval core. If this is the case it may survive as the earliest mill in the county and one of only a handful predating the C17.

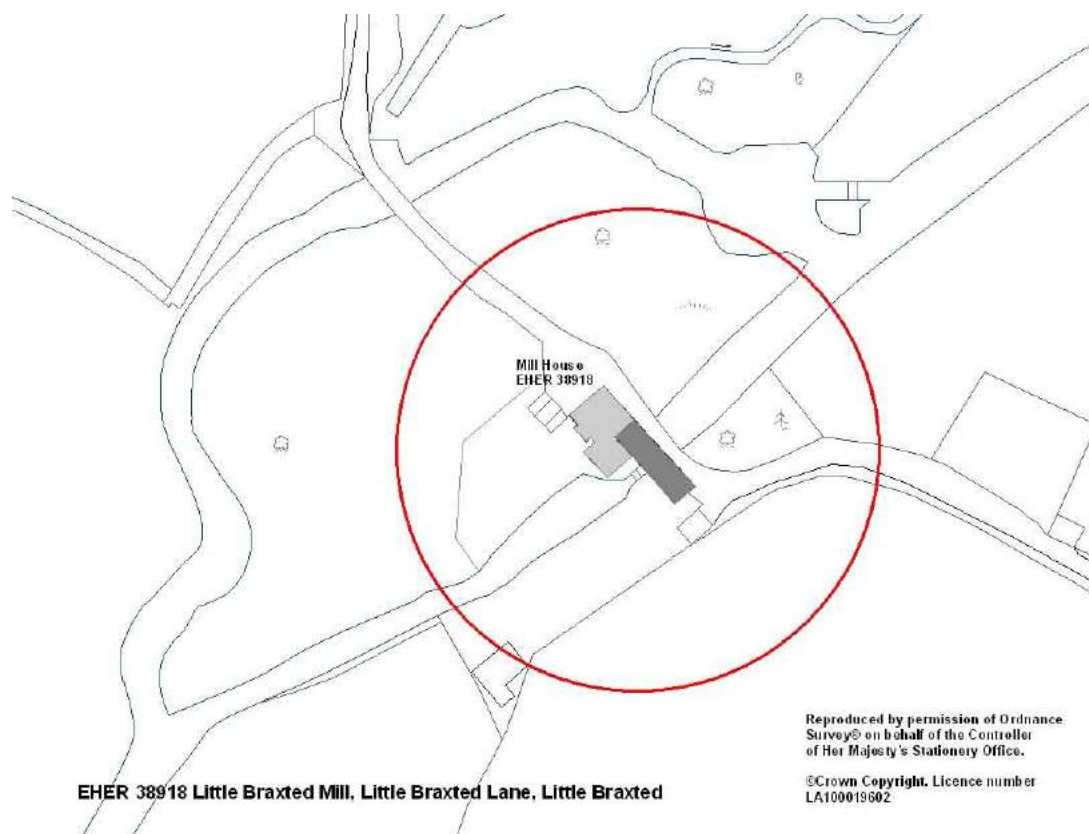
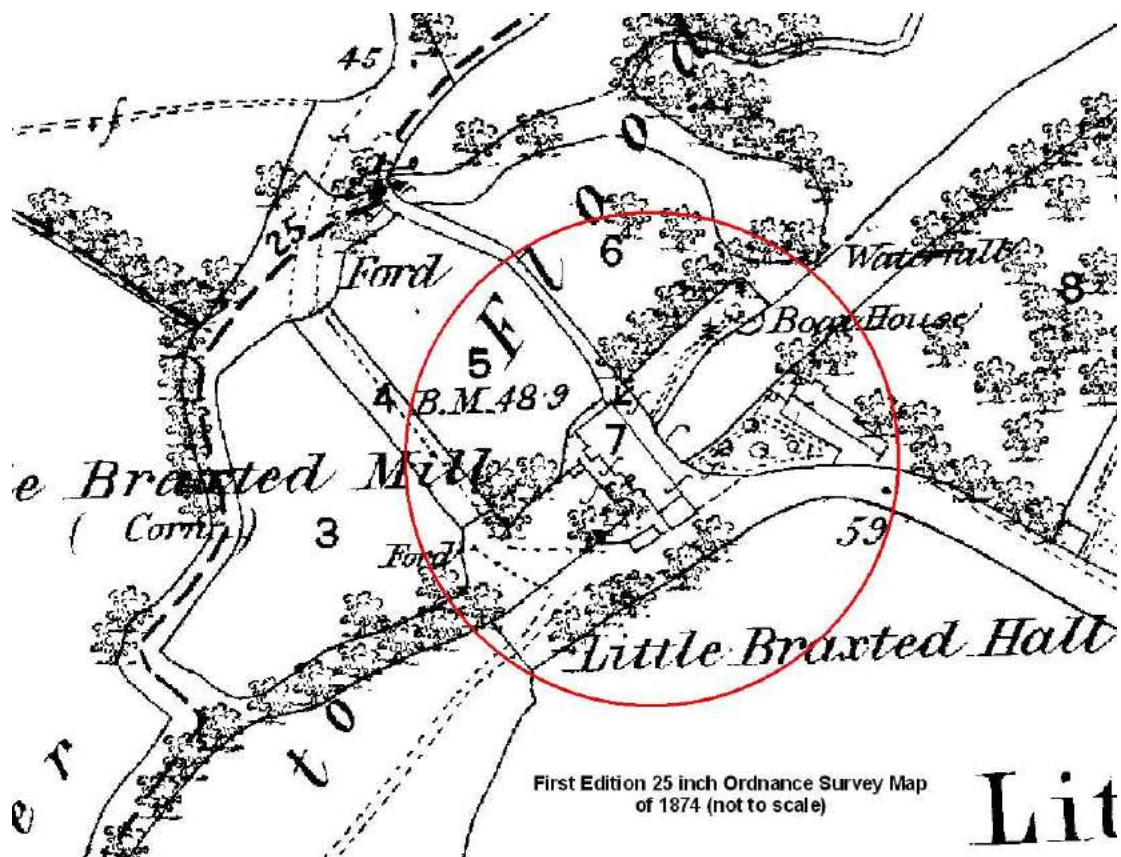
RECOMMENDED ACTION

Maintain its current listed status.

MANAGEMENT

Little Braxted Mill is presently in residential use and well maintained. Should the opportunity present itself an internal inspection followed by an historic building survey at RCHME level 3 should be advised if it becomes threatened by significant alteration or demolition. This site is blighted by the unsympathetic use of Little Braxted Lane by H.G.V's taking a short cut to/from the A12. If this problem is not addressed then it seems likely that this nationally important historic mill and its accompanying mill bridge will suffer significant damage through collision, collapse or both in the near future. To ensure the historic and structural integrity of this Grade II listed building, restrictions on the weight of vehicles using the lane must be imposed.

GRADING ***





Little Braxted Mill looking north-west

SITE NAME Rayleigh Mill, Station Road, Fullbridge			
PARISH	Maldon	DISTRICT	Maldon
NGR	TL 8520 0735	EHHER	15063
RIVER	Chelmer	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

STATUTORY LIST DESCRIPTION: NA

JOHN BOOKERS SURVEY

13/09/1971

Large complex of buildings of which the oldest appears to be a granary adjacent to the river. This survived into the 1960s as a weatherboarded structure surmounted centrally by a hoist tower at least one storey higher than the rest of the building. The tower has now been taken down and the structure encased in corrugated iron with a modern projection against the river, but some weatherboarding can still be seen on the W side. This building almost certainly antedates the rather severe brick roller mill to the NE, built in 1896 by Samuel Garratt to take advantage of imported wheat delivered by barge. A lower longer brick building, probably a granary, is set at right angles to the roller mill. A more modern building, presumably a roller mill or silo, stands to the W of the Rayleigh mill proper, with the MOTHERS CHOICE SELF RAISING FLOUR on the side.

Present Use: Unchanged, except for unit of power

Condition: Full working order

ERO SOURCES: (D/F 21/25)

SITE BACKGROUND:

Former steam roller mill called Rayleigh Mill, Fullbridge now operated by Green Brothers (Maldon) Flour Mills Ltd. Rayleigh Mill was built by Samuel Garret in 1896 to take advantage of the influx of cheaper grain imported from North America. It originally formed part of a group of 'modern' roller mills built along the river below Fullbridge which benefitted from superb communication links, lying adjacent to Maldon East Railway sidings and for many their own docks opening onto the navigable stretch of the River Chelmer.

Field Survey 2007

16/11/2007

Currently the site operates as a modern flour mill and accordingly has been altered to accommodate modern buildings, processes and technologies. A former weatherboarded granary is thought to survive encased within the tall corrugated iron covering range fronting onto the riverside. It in turn abuts a C19 yellow stock brick and slate covered gable ended mill range to the west. The brick and slate mill is visibly about 4 bays in length and 4 storeys tall with red brick floor bands and tie bar bosses decorating its western long elevation. A taller modern gable ended range projects (N) to the rear of the brick and slate mill while the former 4-4½ storey granary sits parallel and to the east. The latter incorporates a hoist loft in its southernmost bay and a covered modern (suction) grain loader at riverside used for unloading American and Canadian grain still brought in by barge. The company name GREENS FLOUR MILLS is spelt out in large letters along its eastern long wall. Two similar sized but modern iron clad granaries extend in line to the north while a small C19 gable ended range sited toward Station Road incorporates a date plaque in its gable reading 1896 and the initials S.G. (Samuel Garrett).

Current Use: Flour Mill
Condition: Good-Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Roller Mill	C19	Brick	Med
Granary	C19	Timber	Med
Modern Flour Plant	C20	Steel/concrete	Low-Med

ARCHAEOLOGICAL POTENTIAL

Due to its continued use as a flour mill it is unlikely that the mill and granary retain any historic technologies, fixtures or fittings.

SITE SIGNIFICANCE

Much altered late C19 steam roller mill site forming part of a group of mills situated along the quayside built to take advantage of transport links and cheaper foreign grain. Although some C19 structures remain it is doubtful they retain any technology or original spatial and functional integrity.

RECOMMENDED ACTION

The surviving C19 buildings within the present Greens Flour Mills site do not merit listing nor would the historic character of the Maldon Conservation Area be enhanced by its inclusion. Based on the contribution this mill and other Industrial buildings/mills made to the development of the quay and industrial area around Fullbridge, it should be recognised within Local Development Documents covering this area of Maldon.

MANAGEMENT

Rayleigh Mill is in commercial use as part of Greens Flour Mills and is well maintained. Should the opportunity present itself an internal inspection of the flour mill is recommended and/or an historic building survey at an appropriate level, to record and analyse the workings of a modern flour mill, should be advised if the mill becomes threatened by closure or demolition.

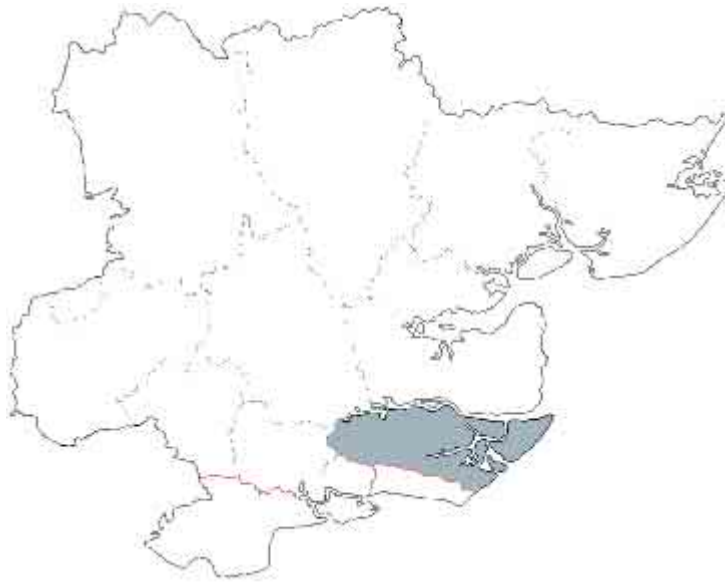
GRADING *



Rayleigh Mill looking east-north-east

ROCHFORD DISTRICT

EHER	Site Name	Grade
	Tide Mill	
35127	Olde Tide Mill, Chelmsford Road, Rawreth	**
	Steam Mill (former Tide Mill)	
40672	Stambridge Mill, Mill Lane, Stambridge	*



SITE NAME Olde Tide Mill, Chelmsford Road

PARISH Rawreth **DISTRICT** Rochford

NGR TQ 78024 94598 **EH** 35127
RIVER Crouch **EH** 123003

CURRENT STATUS **Con. Area** Yes **Listed Grade** II **EBAR** No

STATUTORY LIST DESCRIPTION

14/10/1986

Partly situated in Rettendon Parish, Chelmsford District. Former tide mill, now used as a warehouse with attached offices. Late C18. Brick built. Red plain tiled roof. South weatherboarded lucam and gable. The north gable facing the River Crouch with attached dam wall. 3 storeys and loft. 3 window range to return walls of mainly vertically sliding sashes with glazing bars. Various tie plates. Bargeboards to gable. 2 light window to lucam. Tall double vertically boarded doors to ground and first floors, the latter with segmental head. Attached to west and included for group value is a lower range L-plan outbuilding with red pan tiled roofs. The gabled southern range with five 3 light windows, segmental arches to right return. 2 window range and chimney stack to gable end. The dam wall, mainly of red brick with stone coping with openings, for the tide control gates extends to north, crossing the River Crouch. Even though not now a working mill, a rare survival in Essex. (Alderton & Booker, 1980).

JOHN BOOKERS SURVEY

28/10/1971

One of the more under-rated industrial groups in Essex. Both buildings are, in their own right, of considerable interest. The former tidemill is a C19 brick building of 4 storeys with a lucam. Until quite recently the exterior tide gate machinery was well preserved. The mill was served by a mill race, now covered over or filled in, from the W end of the tide pool. The exit culvert is illustrated in Unknown Essex (Maxwell, 1925). There is little machinery within the mill. The granary building, often mistaken for a malting, is almost unique in that it has a pyramidal cowl roof over the drying kiln at the east end. In other respects it is a brick and slated structure of much the same date as the mill. Documentary evidence confirm its use as a granary, that the two buildings worked as a group and should be cherished.

Present Use: Storage in mill but largely disused

Condition: Deteriorating

ERO SOURCES: (DF 21/11, 21/14, 21/15, 21/17, 21/21, 21/22)

SITE BACKGROUND:

Records show that a tide mill was rebuilt shortly before 1775 and comprised 4 floors, two wheels, three flour mills and four pairs of stones. It was nearly destroyed by fire in 1815 and its owner John Desley was bankrupt by 1836. Prior to this it had been rebuilt and the two wheels replaced by one larger breast shot wheel working five pairs of stones. The mill was then purchased by William Taylor Meeson who eventually replaced it with a steam mill built on the north bank and below the bridge around the turn of the century. The old tide mill building was demolished in 1902-03 leaving just the dam, mill shut and by valve (Benham, 1976).

Field Survey 2007

16/02/07

Olde Tide Mill survives as a 3½ storey yellow stock brick granary, abutted by a part basemented but rebuilt red brick tidemill with a pan tile roof, between it and the tidal pond. A channel was excavated from the tide pond adjacent to the old mill to power the Matthews Mill formerly situated downstream of the bridge and on the south bank.

However problems maintaining correct water levels proved to be too difficult and water power was abandoned in preference of gas engines. This channel is now culverted and reportedly runs parallel to the Crouch to discharge back into the river on the eastern side of the bridge. The millstones were apparently situated on the first floor of the (demolished) red brick range and were under-driven via a spur wheel on the floor below. Single and two storey C19 ranges lie to the west. Externally the 'mill' (or more accurately the granary) has changed little from the list description, it remains in good order and retains most of its C19 windows. Internally some of the cast-iron columns remain although no milling or associated apparatus survive. The waterwheel is a modern replica built and installed by the present owner who runs the Skee-Tex business from the premises. It is his intention that the present replica waterwheel will eventually be used to generate low levels of electricity (pers. comm.). No original mill gearing or apparatus survives within either the rebuilt tidemill or the granary.

Current Use: Business

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Tide mill (corn)	C18 rebuilt C20	Brick	Low-Med
Granary	Late C18-19	Brick	Med
Outbuildings	C19	Brick	Med
Tidal dam wall	C18/19	Brick	Med
Kiln/Oast House	C19	Brick	Med-High

ARCHAEOLOGICAL POTENTIAL

The tide mill has been demolished and rebuilt but the associated granary, outbuildings and drying kiln/granary still remain, although all are now in residential or retail use.

SITE SIGNIFICANCE

The rebuilding of the tide mill and the sites subsequent reuse for commercial purpose has significantly impacted upon the historic and architectural importance of the site. The surviving granary presents an external impression of integrity not matched by the interior. The buildings have a distinct group value and a significance which is heightened by the survival of its mill dam and sluice and its standing as one of only four tide mill sites recorded in the survey.

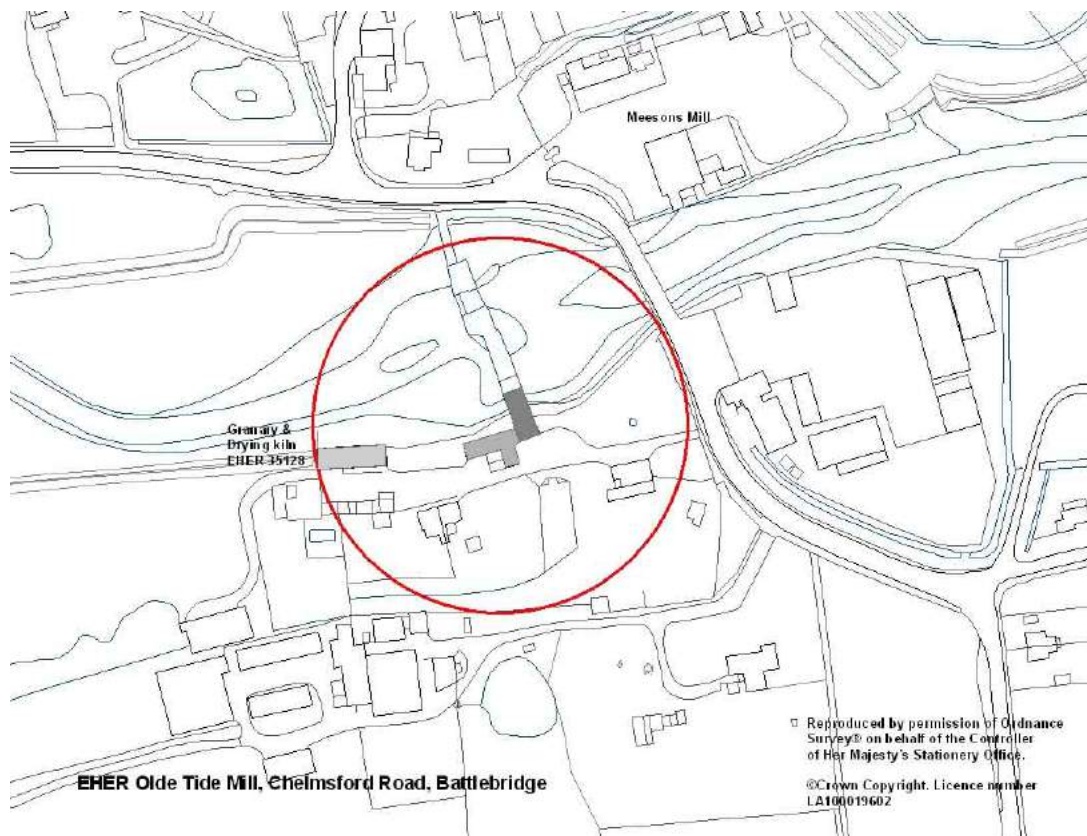
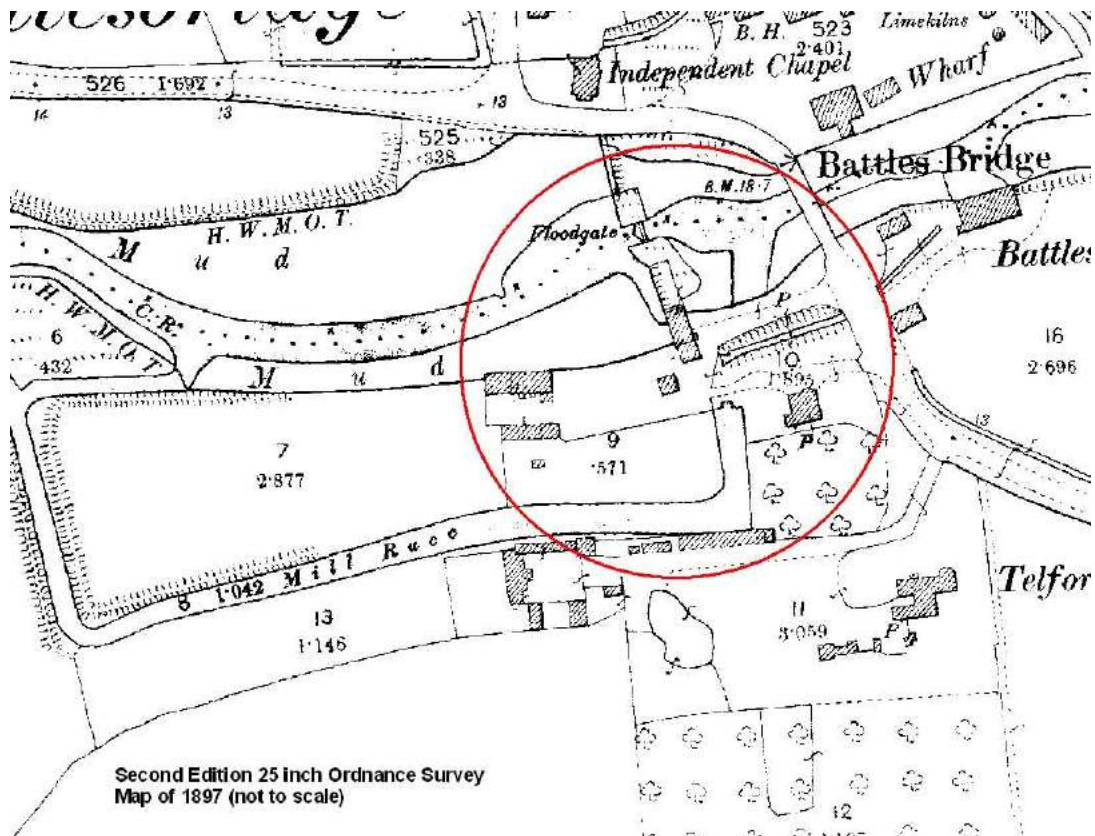
RECOMMENDED ACTION

Maintain current listed building and conservation area status

MANAGEMENT

Olde Tide Mill and its associated buildings are presently in commercial or residential use and well maintained. An historic building survey at an appropriate level should be carried out if the mill or associated buildings become threatened by significant alteration or demolition.

GRADING **





Granary and Olde Mill looking north-west

SITE NAME Stambridge Mill, Mill Lane			
PARISH	Stambridge	DISTRICT	Rochford
NGR	TQ 8871 9033	EH	40672
RIVER	Roach	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

26/03/1971

This is an important milling site in Essex and now is among the biggest. The tide mill was unfortunately badly damaged by fire in 1966 but good photos of it remain. In 1969 the shell of the lower half of the mill was still standing but this has been demolished and only the sluice and watercourse remain. The rather bleak brick offices or poss. mill house adjacent to the site of the tide mill are now one of the few Victorian remains in the entire complex. The mills are difficult to date, to an extent they are modern or very modern but perhaps some walls have been retained from earlier buildings. Insurance records show that there was steam power at Stambridge by 1872; this mill was burnt down in 1878 but rebuilt on a larger scale over 5 storeys with slate roofs. This mill appears to have been superseded soon after by another mill which as since been rebuilt.

Present Use: Milling by modern methods

Condition: Full working order

ERO SOURCES: (D/DCw T25), (D/DP 040/1), (D/DGn 386), (D/DCW T47/15), (D/DCW T2), (D/DCW P64), (D/DTa B3)

SITE BACKGROUND:

A mill dating from 1762 was rebuilt at a cost of £2907 in the early C19 by John Kemp, who had taken a 25 year lease in 1809. By 1816 the Kemp brothers dissolved their partnership and the mill was leased in 1822 to William Rankin and his cousin Samuel Tabor. In 1836 it had 5 pairs of stones, to which Rankins added a steam mill running another six pairs. Stambridge Mill was reconstructed by Alfred Mottram and Hugh Rankin in 1872 (Tritton, 1977) and while the steam mill burnt down in 1878, the watermill and house survived. As a replacement Alfred Mottram and Hugh Rankin built a new 5 storey brick and slate mill with 5 pairs of stones replaced in 1893 by six sets of rollers. By 1905 the tide pond, which still provided 7 hours work on flood tides, no longer filled on neaps probably due to 'slobbering up' with mud. The site was sold to Associated British Foods in 1962 and two years later the old mill was destroyed by fire (Benham, 1976).

Field Survey 2007

16/02/07

Large redundant flour mill complex sited adjacent to the river Roach and a large (now silted up) tide pool (mill head) to the south and south-west. A operational sluice gate lies at the juncture of the mill head and the tidal stretch of the river Roach, while another smaller sluice is situated immediately north and a weir, at a short distance to the south. The site has been extensively rebuilt since the later C19 to the extent that the present site now almost exclusively comprises modern mid-later C20 brick and steel clad production and storage buildings.

Despite numerous fires the remnants of C19 mill buildings still remain, either merely as walls incorporated into larger modern buildings or as partial structures integrated into the main complex. Along the southern boundary and adjacent to the main sluice lies a four bay two storey brick rendered gable ended range which may have once been the mill house of the former and now demolished tide mill. It has been

extensively altered, the southern end extended by one bay and the roof recovered using modern corrugated steel panels. Few features remain apart from a series of earlier window openings, either built with stone arched lintels with skewbacks or cambered brick arches. To the east and fronting onto the wharf are the remains of a 3½ storey late C19 to early C20 yellow stock brick range with a gable end to the south. Its upper gable has been rebuilt, presumably at the same time the present conveyor gantry for unloading grain barges was added. To the rear (north) lies a complex of structures, clad in modern materials, which could conceivably be earlier mill buildings, while along the eastern boundary is a tall early-mid C20 grain/flour store with an elevator bay to the south and running north, a bank of 6 in-line concrete silos. This huge building in turn links via overhead conveyors to a group of 6 modern cylindrical steel silos to the north-east. A range of modern 1970-1990s sheds occupy the western site, while the only buildings of note to the north are the gate lodge and a turn of the C20 century office range.

The mill head (tide pool) is still recognisable but away from the river course it is silted up and overgrown. The active mill head sluice is essentially a modern concrete construction inserted into an earlier opening. Some earlier C19 brickwork, behind modern rebuilding survives in the splayed revetment walls while large stone blocks are present in the northern wall of the sluice. The southern side of the sluice and the weir have both been rebuilt during the C20 using granite blocks.

A terrace of mill workers cottages (EHER 40770) lies to the north of the site and along Mill Road

Present Use: Redundant

Condition: Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam roller mill (corn)	Late C19 & C20	Brick/concrete	Low-Med
Mill house/office	C19	Brick	Low-Med
Sluice	C19-C20	Brick/stone	Low
Weir	C19-20	Stone	Low
Gate lodge	Interwar	Brick	Low
Flour Silos	Late C20	Steel	Low
Production sheds	Late C20	Steel/concrete	None
Mill Cottages	C19 & Interwar	Brick	Low

ARCHAEOLOGICAL POTENTIAL

It remains unclear as to the extent to which C19 mill buildings and subsequent technologies survive within the site, although given the long period over which the site operated and its many and extensive rebuilds it seems unlikely that significant historic remains survive. However the development of the site, the engineered industrial landscape and the later technologies and operating systems within the modern mill are all worthy of study.

SITE SIGNIFICANCE

Stambridge Flour Mill survives as a complex multi-period site comprising a wide range of buildings and structures, including the mill, mill head, weirs, sluices and industrial housing that together chart the operation and development of an historic milling site. In a wider context it sits within an historic industrial landscape of quays and wharfs that developed around this navigable tidal stretch of the river Roach from the C18 onwards. As a whole the mill and the industrial estuarine landscape in which it rests has considerable value. Stambridge Mill is also an increasingly rare example

of a large intact flour mill complex in Essex.

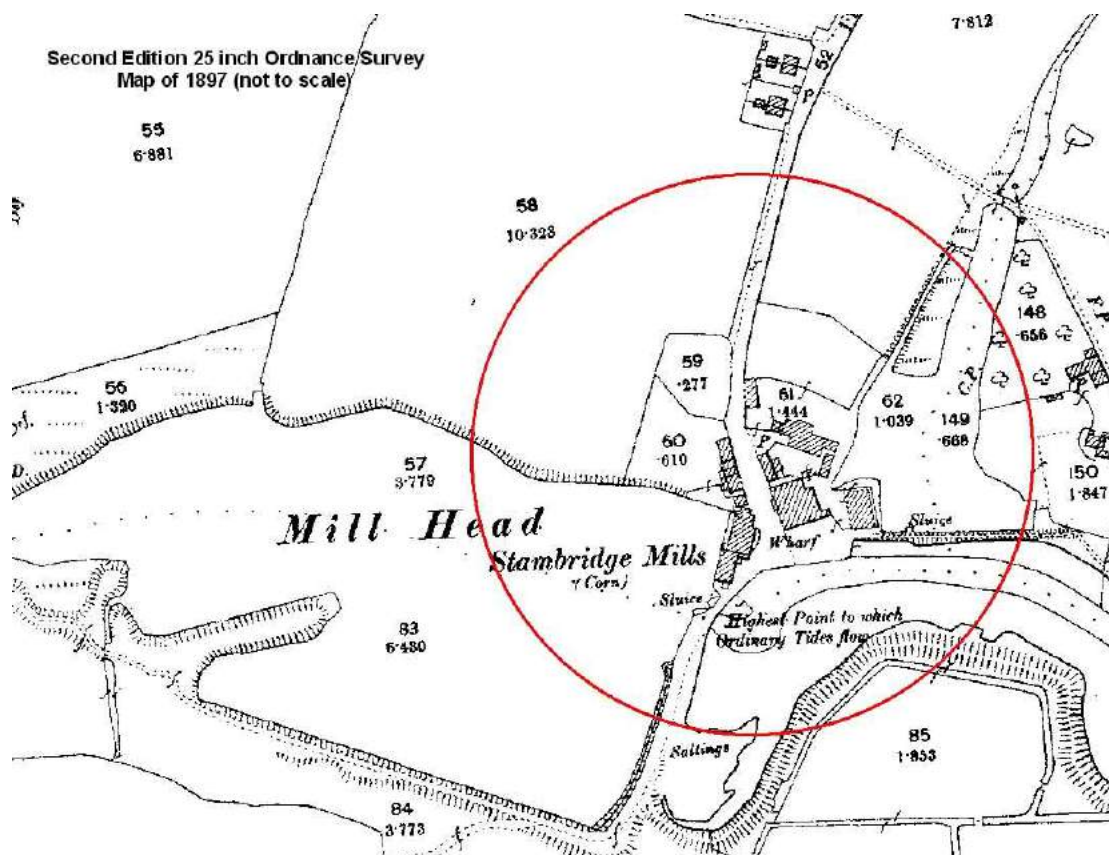
RECOMMENDED ACTION

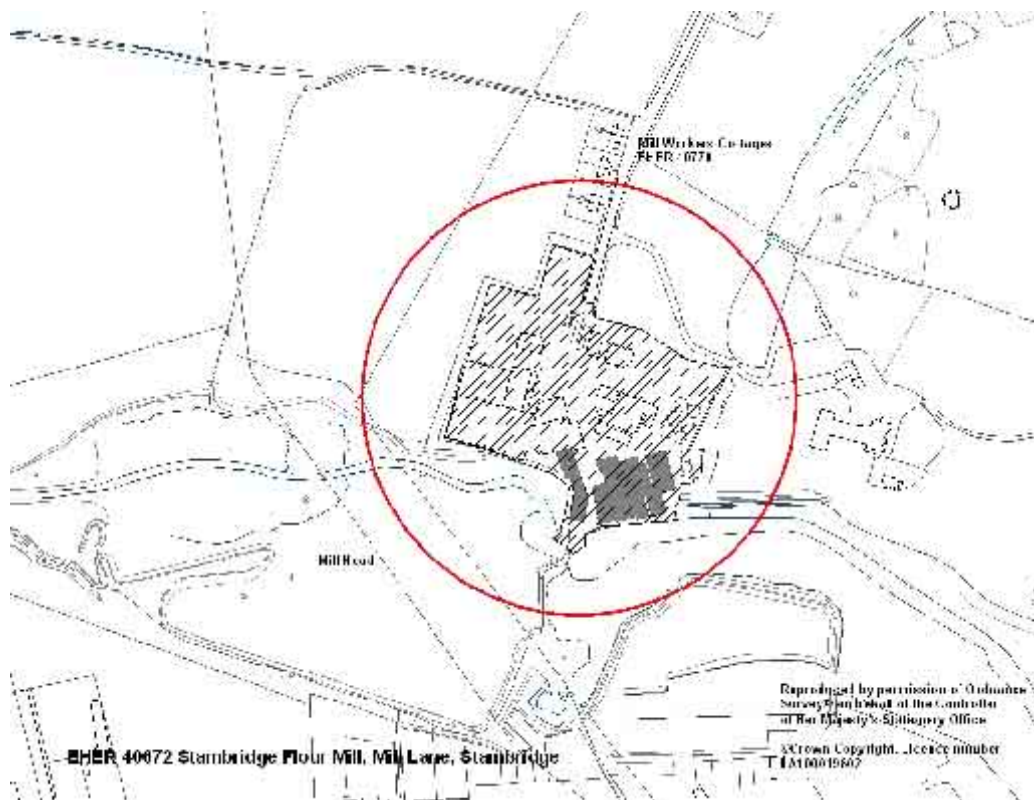
Stambridge Mill is not listable due to the extensive levels of reconstruction, adaptation and site redevelopment. However based on its comparative rarity and group value, the site at Stambridge should be recognised as a locally important historic site and be included within future Local Development Documents.

MANAGEMENT

As the site has remained redundant for over four years its future remains very uncertain. An internal inspection and a full historic building survey at an appropriate level should be undertaken prior to any significant redevelopment.

GRADING *





Stambidge Mill looking north-east

TENDRING DISTRICT

EHER	Site Name	Grade
Watermills		
34614	Shirburn Mill, Mill Hill, Lawford	**/**
34555	Spring Valley Mill, Spring Valley Lane, Ardleigh	***/**
Tide Mill		
34312	Thorrington Tide Mill, Brightlingsea Road, Thorrington	****
Steam Mills		
40673	Bradfield Hall Steam Mill, Steam Mill Road, Bradfield	*
	Great Clacton (Bromleys) Mill, 355 Old Road, Great	*
40674	Clacton	
34560	Phoenix Mill, Station Road, Ardleigh	**/**



SITE NAME Bradfield Hall Steam Mill, Steam Mill Road			
PARISH	Bradfield	DISTRICT	Tendring
NGR	TM13090 29609	HER	40673
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

02/07/1971

This is an interesting relic, as one of the few steam mills built in the 1850s on sites not traditionally associated with milling. What is particularly rare is that there was, at the time of its construction, no railway within 2 miles, although part of the aborted Mistley-Thorpe-Walton railway line ran within a few yards of the mill. Failure of the railway no doubt contributed to the early closure of the mill. The most interesting features are the semi-circular headed cast-iron framed windows and the renaming of the nearby road through Bradfield Heath to Steam Mill Road. Trade directory evidence suggests that the mill was built between 1855 & 1859.

Present Use: Part of Farm

Condition: Not in a bad condition

SOURCES: Kellys' Trade Directory

SITE BACKGROUND:

Bradfield Hall Steam Mill is situated to the SE of the former industrial settlement and quay at Mistley, to the north of its namesake Bradfield Hall and immediately east of the abandoned branch line (1863-1869) that once ran between Mistley, Thorpe and Walton. The mill was presumably built by Bradfield Hall, who had already invested in a planned farm to capitalise on the buoyant agrarian economy of the 'Golden Age' and continued in the same vein with a new steam mill to take advantage of grain prices and the newly built rail link to Mistley and the coastal ports. The lines closure must have had serious implications for validity of this business and ultimately following a depression in agriculture by the late C19, its closure.

Field Survey 2008

25/01/08

The former steam mill had remained in use, not as a mill but as part of Bradfield Hall Farm, until quite recently, however, a catastrophic fire during the 1980s-early 1990s (pers. comm.) destroyed most of the building leaving only the eastern and part of the northern end wall intact. The mill was rebuilt, retaining the surviving walls and was converted for use as a domestic dwelling, which it remains to this day. As part of this conversion the western half of the mill was completely rebuilt, the roof re-pitched and a small 'kiln like' brick built extension added to the north. The original elevations are built over two storeys, five bays and in red brick (Flemish bond) with yellow brick dressings around apertures and as quoins. The windows all have half-round gauge brick arch heads with brick keystones and are much taller at ground floor than at first floor. The iron windows, typical of industrial buildings of this period and mentioned by Booker (above) were removed post fire and have been replaced by modern timber casements. A blocked taking-in door remains visible in the northern end wall. No internal structural or technological features, fixtures or fittings remain.

Current Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam Mill	C19	Brick	Low-med

ARCHAEOLOGICAL POTENTIAL

Its almost complete destruction by fire and subsequent conversion to residential use has removed the buildings internal integrity and all evidence of technological features, fixtures or fittings.

SITE SIGNIFICANCE

Due to the extent of rebuilding the former steam mill retains little architectural or historic significance. It survives as one of the least significant examples of the 27 steam mills recorded during the survey.

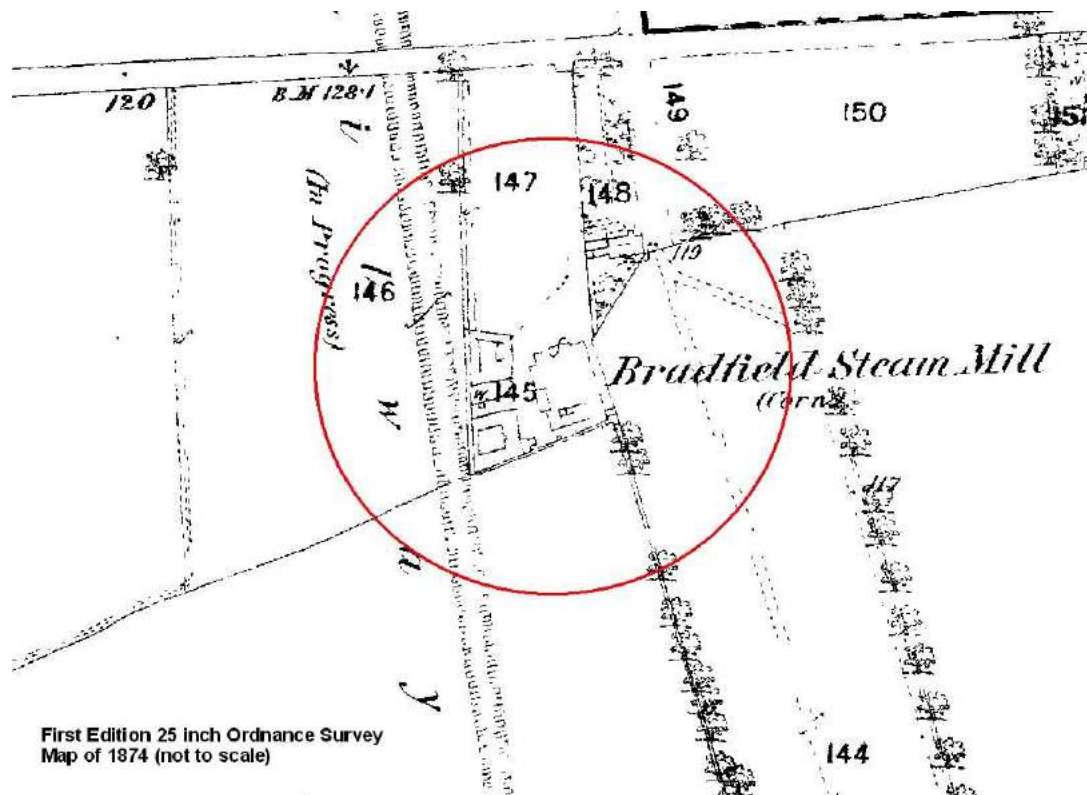
RECOMMENDED ACTION

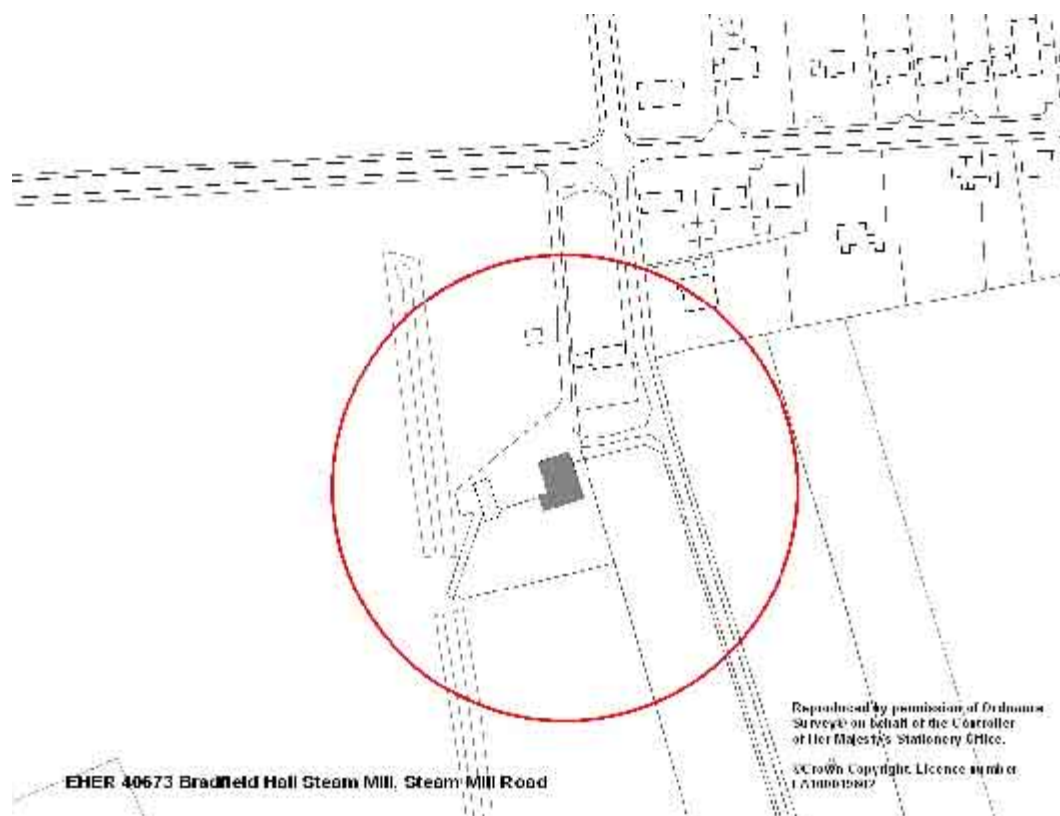
The remains of the mill should be recognised as a locally interesting building and included on a local list and within Local Development Documents

MANAGEMENT

An historic building survey at an appropriate level should be recommended if the mill becomes threatened by demolition.

GRADING *





Bradfield Hall Steam Mill looking west

SITE NAME Great Clacton (Bromleys) Steam Mill, 355 Old Road			
PARISH	Great Clacton	DISTRICT	Tendring
NGR	TM 1753 1626	HER	40674
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY:

Great Clacton steam roller mill erected 1886, with rollers by 1894

SITE BACKGROUND:

The steam mill at Great Clacton was erected in 1886-7 by local baker, corn and fodder merchant, Henry Bromley, who took over the business some years before from the Beckwith family, Great Clacton millers of many generations. The steam mill eventually replaced the existing windmill (latterly renamed Bromley mill) which lay opposite the new steam mill in Bull Hill field. Contemporary accounts record Bromleys' steam mill as fitted with '*the most modern appliances*' from the outset and described it as a '*model of its kind and fitted with machinery of the best make obtainable*'. It was equipped with a 12 horse power engine and a 14 horse power boiler which supplied the motive power to the steam rollers. The bread ovens in the adjoining bakery, built by Tunks of Willesden, were built on the 'continuous' principle. Attached to the mill was a retail establishment selling large quantities of high class pastries, cakes, bread, buns and rolls for the local hotel trade and boarding houses in Clacton-on-Sea. In addition to supplying the ever growing tourist market, which flourished following the arrival of the railway, Bromleys was also a corn and fodder merchants, producing and stocking a wide range of products including corn, hay, straw, chaff, middlings, bran, barley, oats, meals, cattle foods, poultry foods and dog biscuits. The engine and boiler house were built to the rear of the mill with a tall industrial chimney stack situated close to the mills SW angle. Both the engine/boiler house and the stack have been removed and replaced by a modern lean-to extension. By the later 1940s the steam mill was no longer in production and was latterly converted for use as a radio works and today continues in use as office premises.

Field Survey 2008

01/04/08

The former Bromleys steam mill is situated on the edge of the historic core of Great Clacton and just outside the Great Clacton Conservation Area. Set back slightly from the road frontage the mill, along with the adjacent mill house and modern factory production buildings (to the rear) form the business premises of Bowens photographic.

The mill is a 3 storey brick and slate mill with gable ends facing NE-SW. Built over five in-line bays it now incorporates a modern two storey rear extension, built on the general footprint of the demolished former engine, boiler house and chimney stack. The weatherboarded lucam is typically central to the façade and sits above a taking-in door at first floor, but is unusually cantilevered out from the second floor structure and not the attic storey. Historic photographs of the mill confirm that the present lucam is a modern construction as the original lucam was supported on straight braces and had a more elevated position, straddling the eaves line, directly above another taking-in door at second floor. This opening is no longer visible as it has been reused as access into the faux lucam. Many of the windows, particularly to the façade, retain cast-iron framed multi-light windows typical of many C19 industrial buildings. The fixed 4x4 light glazing is ventilated using a central pivoting hopper and

where original sits below segmental arches of two on-edge courses. Fire escape doors have been inserted into the gable end wall at first and second floor while the former glazed shop front, situated toward the NE corner, has been blocked and two modern flat headed windows inserted. The mill is braced both axially and transversely by tie bars, as seen by the tie bar bosses at the level of the first and second floors. Modern external accretions include a steel fire escape, rainwater goods and a rear lean-to extension. Internally the building has been subdivided for office use.

The former C17-18 millers house, which remains part of the land holding, fronts onto Old Road to the south of the steam mill, while a modern factory unit producing Bowens lighting/photographic equipment lies to the rear.

Present Use: Business (Bowens Photographic)

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam mill	C19	Brick	Med
Mill House	C17/18	Brick	Med

ARCHAEOLOGICAL POTENTIAL

Due to the mills reuse, first as a radio works and subsequently as offices, it is thought very unlikely that historic fixtures, fittings or technologies remain extant

SITE SIGNIFICANCE

One of 27 steam mills across Essex and one of three identified in Tendring during the survey. Although it has been internally altered and the engine house has been removed (as is common) the building still retains its character and readability. It has demonstrable associations with the development of the resort of Clacton-on-Sea during the C19 and the work and success of local entrepreneur Henry Bromley. The mill along with the adjacent mill house share group value and contribute positively to the historic character of this stretch of Old Road, which lies just outside the Great Clacton Conservation Area.

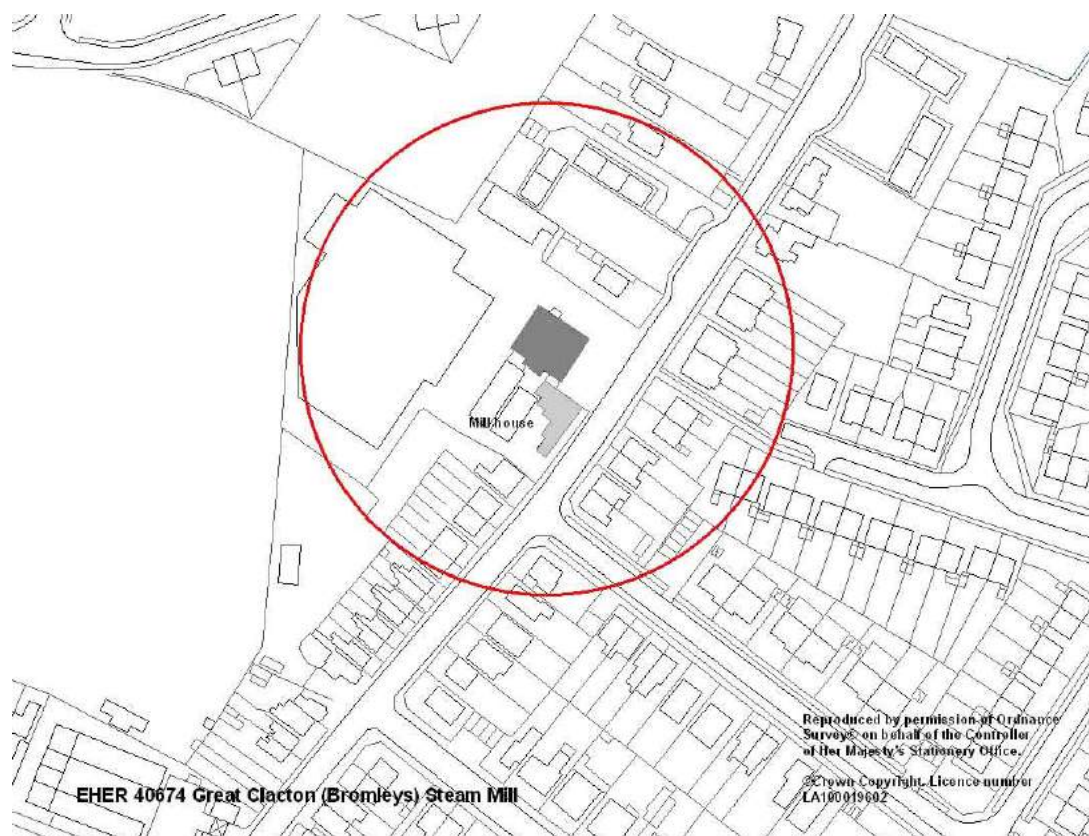
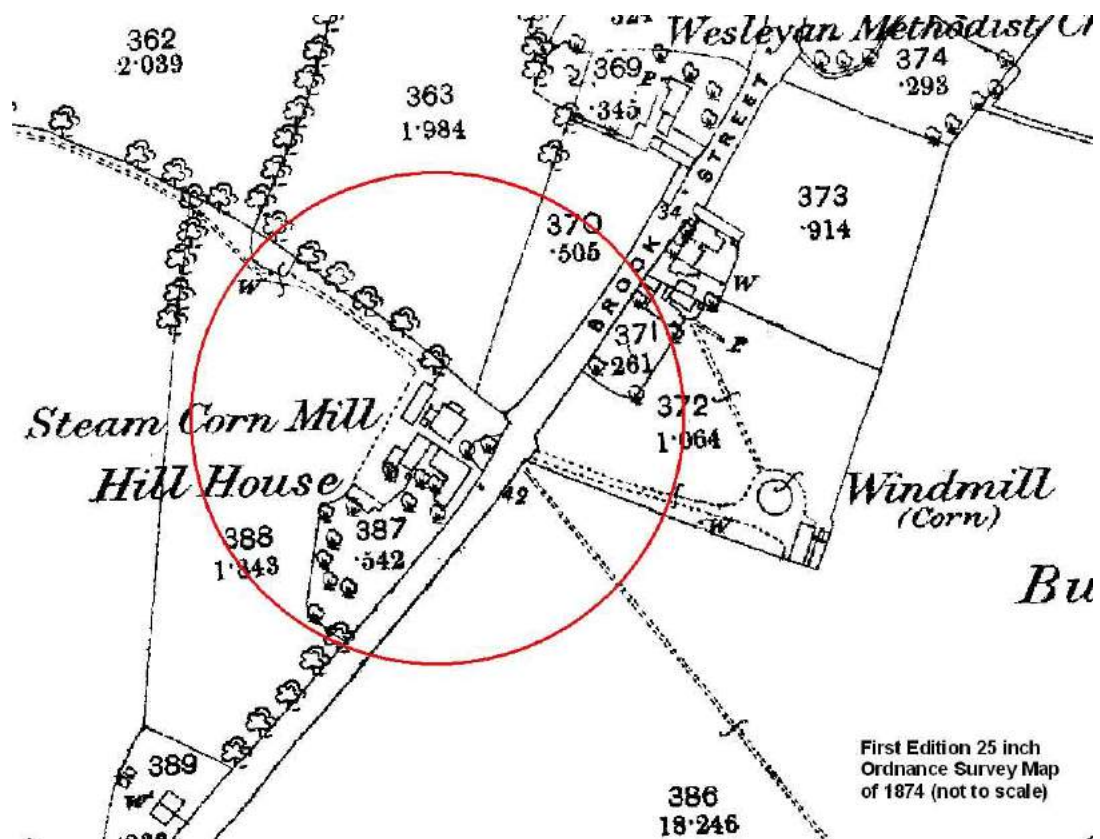
RECOMMENDED ACTION

Although it is unlikely Bromleys mill would meet the requirements for listing, it and the adjacent mill house should be incorporated into the Great Clacton Conservation Area by means of a slight alteration of the existing southern boundary along Old Road.

MANAGEMENT

All attempts should be made to retain this building and incorporate it within any future redevelopment plans for the site. It should be valued as a locally important building and recognised within the districts Local Development Framework documents. An historic building record at RCHME Level 3 should be undertaken prior to any major works.

GRADING *





Great Clacton (Bromleys) Steam Mill looking west

SITE NAME Phoenix Steam Mill, Station Road			
PARISH	Ardleigh	DISTRICT	Tendring
NGR	TM 05358 29120	HER	34560
RIVER	NA	EHUID	120396
CURRENT STATUS	Con. Area Yes	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

30/11/1987

Steam mill and engine house, now disused. Mid C19. White brick. Corrugated asbestos clad roof. 4 storeys and attics. Moulded cornices to eaves and return gables, cornice follows through returns. Moulded band above second storey. 5 window range of cast iron small paned windows with pivots and cast iron lintels, those to ground floor and above central first and second floor doors with ornate brackets. Returns of 2 bays with similar windows and single gable windows. Some windows now boarded-up. Ground floor double doors each of 2 panels, first floor door of 2 panels, 2 lights. There is an adjustable chute held by a chain to the first floor door. Rear Engine House, similar materials, moulded cornice and gable cornice. Round headed window to left return, roof ridge to almost second storey height, various later attached outbuildings. One of the earliest purpose built steam mills in Essex. (Batsford Guide to Industrial Archaeology, Alderton & Booker 1980).

JOHN BOOKERS SURVEY

23/02/1973

One of the earliest mills in the county purpose-built for steam power. It is close to the Ipswich-Colchester railway line (opened 1846) and was apparently built in c.1850. Elegant white brick building with at least two original tie-plates. The lucam was removed in c.1945 when it became dangerous. According to local reports the mill ceased grinding in about 1910, although trade directories do not mention a mill in Ardleigh for many years earlier. It became a store and during the last war housed military and home guard equipment. Latterly it was used as a warehouse for Abbotts Nursery.

Present Use: Store

Condition: Mill is deteriorating

ERO SOURCES: (T/B 216/2)

FIELD SURVEY 2008

08/02/08

Phoenix steam mill was built close to and immediately north of the Colchester to Ipswich railway line and along Station Road. It formed part of a small collection of industries, including the railway nursery and a maltings, concentrated around the level crossing and served by railway sidings branching either side of the former Eastern Union Railway. The sidings no longer exist although some of the C19 railway structures still appear on current OS extracts and as such the industrial character of this area is still just recognisable through the few buildings that remain.

Since it was listed in 1987, the roadside elevations of the steam mill appear to have remained relatively unaltered, to the point that the list description continues as a broadly accurate precise of its current condition. Disused in 1987, the mill has since been brought back into use as offices and significantly enlarged to the rear. The modern accretions comprise a tall four storey weather-boarded double pile range to the rear of the southern and central bays which incorporate the engine house and a set back canted red brick four storey unit to the north. The symmetry of the façade and returns remain despite the enlargements to the rear. The 5 bay 4½ storey mill with gable ends to the north and south was built with diminishing floor heights and

originally a lucam central to the façade (removed c.1945). The lucam was positioned above a first floor loading door and pivoting sack slide raised and lowered on chains. The original boarded loading door and door to the main entrance below are intact. The decorative treatment of the windows varies across the facade with elaborate cast iron lintels on consul brackets at ground floor and plainer lintels set over the windows of the floors above. The more elaborate treatment is also extended to the two roadside doors. The windows still retain their original C19 cast-iron frames, although these frames are merely cosmetic as they are unglazed and sit in front of modern double glazed units. In appearance the former windows now resemble security windows. The gault brick elevations are relatively plain with simple decorative bands at the eaves, above the first floor and as a pediment to the gables. The walls are laid in an irregular ¼ lap Flemish bond. The southern gable wall, particularly across the upper floors, has suffered (historically) from movement, checked by wrought iron straps added around the SE angle and axial tie bars at third and fourth floor level. Despite these attempts cracking persists across the intervening walls between window sills and window heads. Internally the main structural components, floors and some cast-iron columns supporting the binding joists remain.

A much altered two storey red brick stable/granary building is present within the rear courtyard while a contemporary Grade II listed gault brick square plan mill house with a hipped grey slate roof (EHER 34559) lies immediately to the north.

Present Use: Business (office)

Condition: Fair

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam mill	C19	Brick	Med
Mill House	C19	Brick	Med
Outbuildings	C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of alterations associated with Phoenix Mills conversion to office accommodation few significant internal spaces, technology, fixtures or fittings are expected to survive.

SITE SIGNIFICANCE

Phoenix Mill survives as one of the earliest of a group of 23 C19 steam powered corn and textile mills in Essex. In common with the majority of these steam mills, Phoenix Mill has been converted into residential or commercial use and as such retains little in terms of its technological significance. The building remains historically and architecturally significant, is a distinct presence along Station Road and adds character to the Ardleigh Conservation Area. It also shares group value with the adjacent Grade II mill house.

RECOMMENDED ACTION

Maintain current level of listing despite modern accretions and alterations to its original footprint. Its structural condition needs monitoring

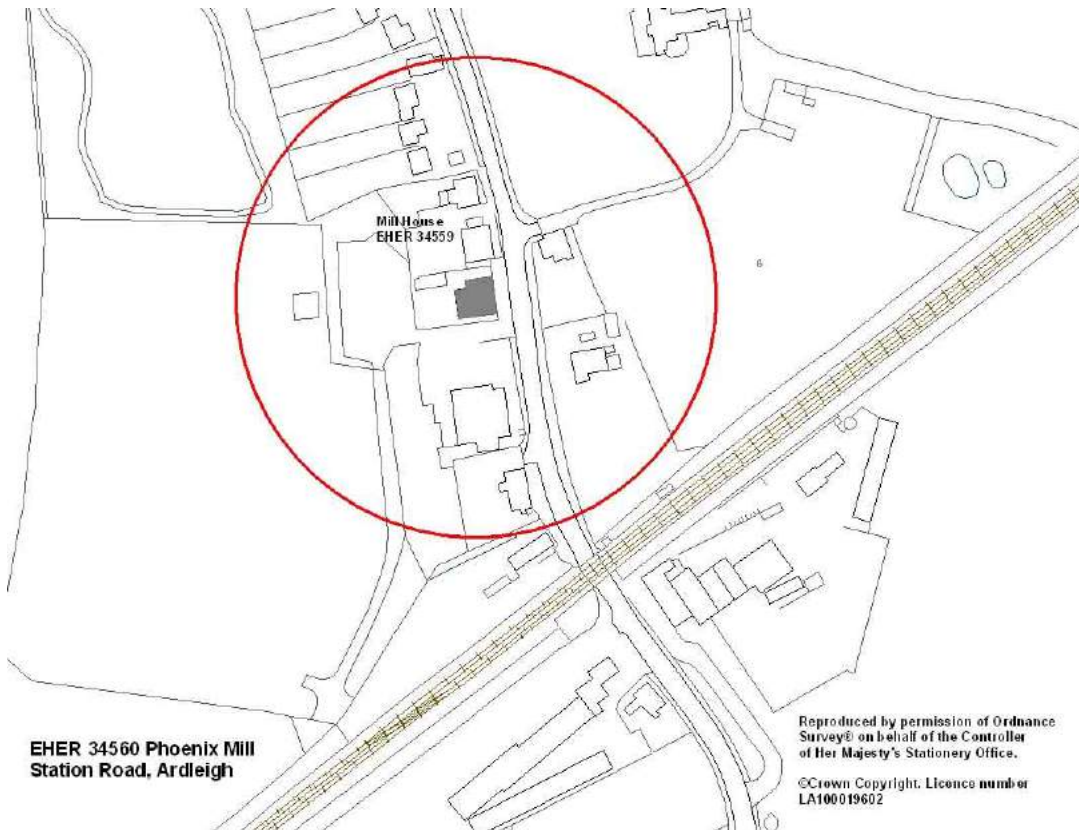
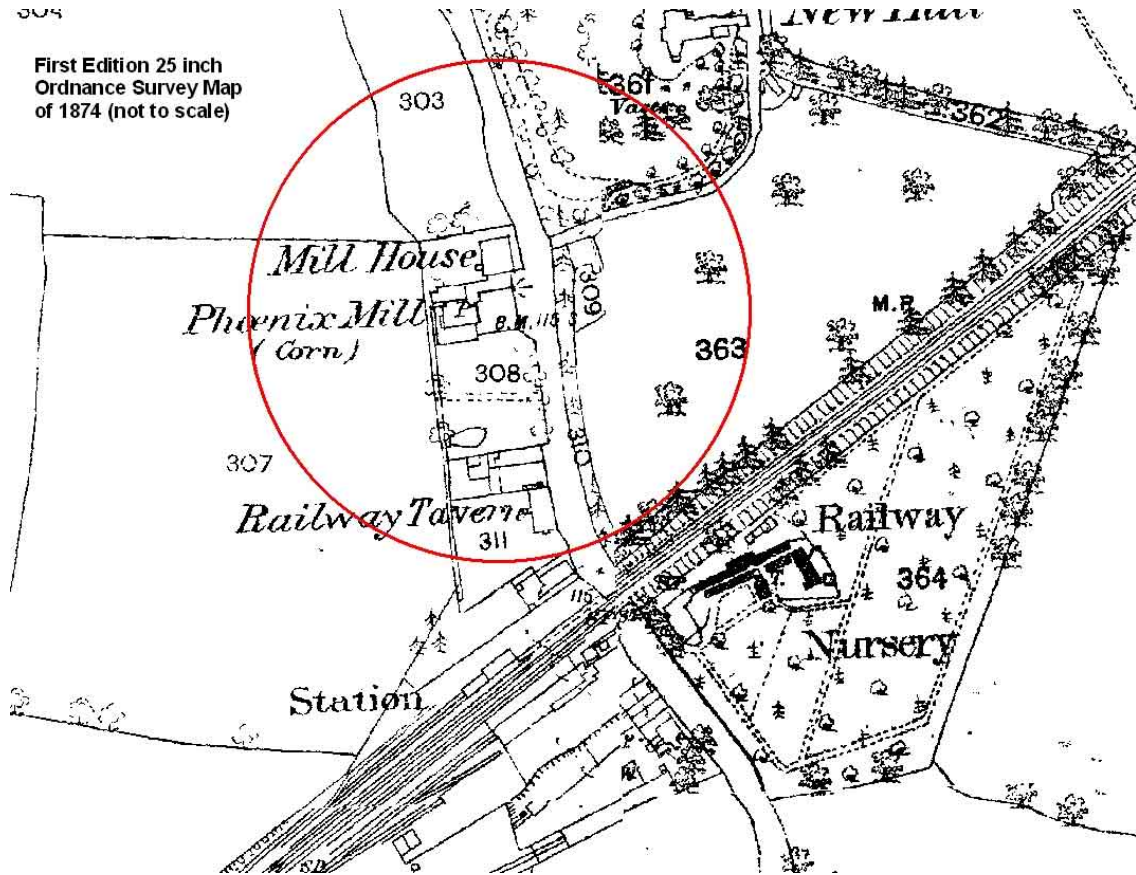
MANAGEMENT

Phoenix Mill is presently in commercial use and well maintained. An historic building survey at either RCHME level 2 or 3 should be recommended if it is threatened by significant alteration or demolition.

GRADING **/**

304

First Edition 25 inch
Ordnance Survey Map
of 1874 (not to scale)



EHER 34560 Phoenix Mill
Station Road, Ardleigh

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Phoenix Steam Mill looking north-west

SITE NAME	Shirburn Mill, Mill Hill, Lawford		
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PARISH	Lawford	DISTRICT	Tendring
NGR	TM 07792 31750	HER	34614
RIVER	Shir Burn	EHUID	437604

CURRENT STATUS	Con. Area	No	Listed	Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

17/11/1966

Former water mill, now empty. C18/C19. Timber framed and weatherboarded, red brick ground floor. Red plain tile roof. 3 storeys and loft with lucam to north face, outshot lean-to to south. North face. Central lucam on curved brackets, window to north. 3 window range of small paned vertically sliding sashes, moulded surrounds, those to ground floor with segmental heads, central door to first floor, central panelled door to ground floor within segmental head, small vertically boarded door to right. The south lean-to faces the mill pond and the exterior overshot wheel, removed 1930's, was to the east face. Of 5 bays with hanging knees to tie beams. 2 pairs of stones remain in the mill, one by H & C Collins, Milton and the other by Tinsby, Ipswich and 2 stone nuts. The dam wall curves to enclose the mill pond to the south and is of concrete faced brick. The mill stream passed under a bridge to the west of the Mill (not now visible) to drive the waterwheel. Once a partner to a long demolished upper mill formerly situated across the mill pond. (J. Booker. Batsford Guide to Industrial Archaeology 1980)

JOHN BOOKERS SURVEY

03/06/1971

This building is unusual for Essex both in its location and form. Originally there were two mills very near to each other, both run as part of the same venture and working the same stream – a brook of little significance, claimed to provide what was called a reservoir 'bountifully supplied by abundant springs' with a fall to both mills of nearly 35 ft. The upper of the two is reported to have been demolished in 1921. The lower (Shirburn) mill built around 1800 is of 3 storeys with a hoist loft, weatherboarded on a brick base and with a tiled roof. The overshot exterior wheel (rare to Essex) was removed in 1937.

Present Use: Disused

Condition:

ERO SOURCES: (D/DRC B 18)

SITE BACKGROUND:

No machinery except for two pairs of stones, one by H & C Collins, Melton and the other by Tinsley, Ipswich (Alderton & Booker, 1980). It was probably built in the later C18 as a deed of conveyance mentions Sherborn Mill in 1796 and 1816 (ERO D/DC 36/9).

Field Survey 2008

28/01/08

Shirburn or Sherbourne Mill appears to have changed little, externally at least, since it was first listed in the mid 1960s. It remains in a 'disused' state and as such is one of a declining number of watermills in Essex that have not been converted to residential use.

The present mill was built across an engineered watercourse that runs parallel to the Shir Burn and widens out immediately south of the mill to form a mill pond. The mill pond was built to create a sufficient head and fall to the **overshot** wheel and was achieved by banking up the channel on its west and north sides and widening it out

at the southern end. Another mill pond built in line and associated with the demolished Upper Mill survives at a short distance up stream. Further to the south is a sluice, connected via a short cross channel to the Shir Burn, which regulated the water flow to both mill ponds. The mill tail is culverted to the north of the mill and emerges for a short length before disappearing below Mill Hill Road and the adjacent former GER Colchester line.

Shirburn is a 3½ storey part brick and part timber framed and weatherboarded mill with a clay tiled gable ended roof aligned east-west and a two storey full length slate covered lean-to to the rear (south). A smaller single storey lean to built on the site of the former external waterwheel butts up against the western end elevation. The ground floor, built in red brick, has a central arch headed entrance flanked either side by similarly arched window openings. It supports a timber frame of two storeys, clad in feather-edge weatherboard. The arrangement of the fenestration is symmetrical across the façade with openings flanking either a taking-in door at first floor or a window and lucam at second floor. Vertical opening 4 x 3 sash windows are used across the front elevation while simpler four pane sashes are used in the not so visible end elevations. The central gable ended and weatherboarded **lucam** projects north from the facade and straddles the eaves line. It is supported on simple timber knees and is positioned to enable sacks to be hoisted onto an internal gantry floor set above/onto the wall plate. Modern rain water goods have been added and although the building appears to be maintained and in a fair, watertight condition, the exterior would benefit from some remedial attention.

A red brick two storey mill house with a hipped and slated roof lies immediately east of the mill. It has a three window range to the front with a central entrance and top hung sashes. A smaller hipped roofed extension with rounded angles projects to the north. A C16 timber framed Mill Cottage is also situated nearby.

Current Use: Disused

Condition: Fair but needs attention

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Brick/Timber	Med- High
Mill House	C18-19	Brick	Med
Mill Cottage	C16	Timber	Med-High
Remains of Upper mill	C18	Brick	Med

ARCHAEOLOGICAL POTENTIAL

As access was not possible the extent of technological survival and in particular the pair of stones mentioned in the list description and by Booker, remains unclear. Despite the removal of the waterwheel in the 1930s the potential survival of the internal stone drive, fixtures and fittings is heightened by the buildings continued disuse.

SITE SIGNIFICANCE

Small two stone country mill, which unusually in Essex was built with an external overshot wheel. The site has additional interest in that it once worked two mills in tandem and still retains the mill pond and structures of the demolished partner. It survives as one of an ever decreasing number of mills that are not in residential or office use.

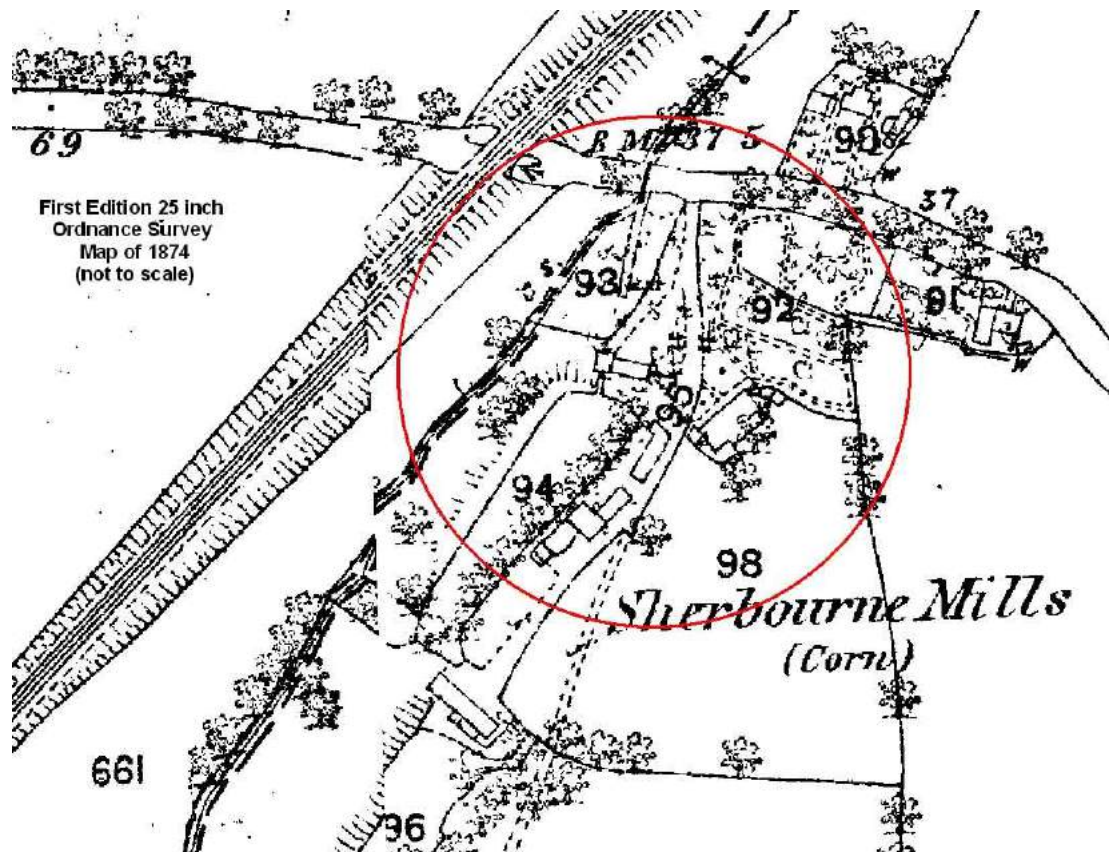
RECOMMENDED ACTION

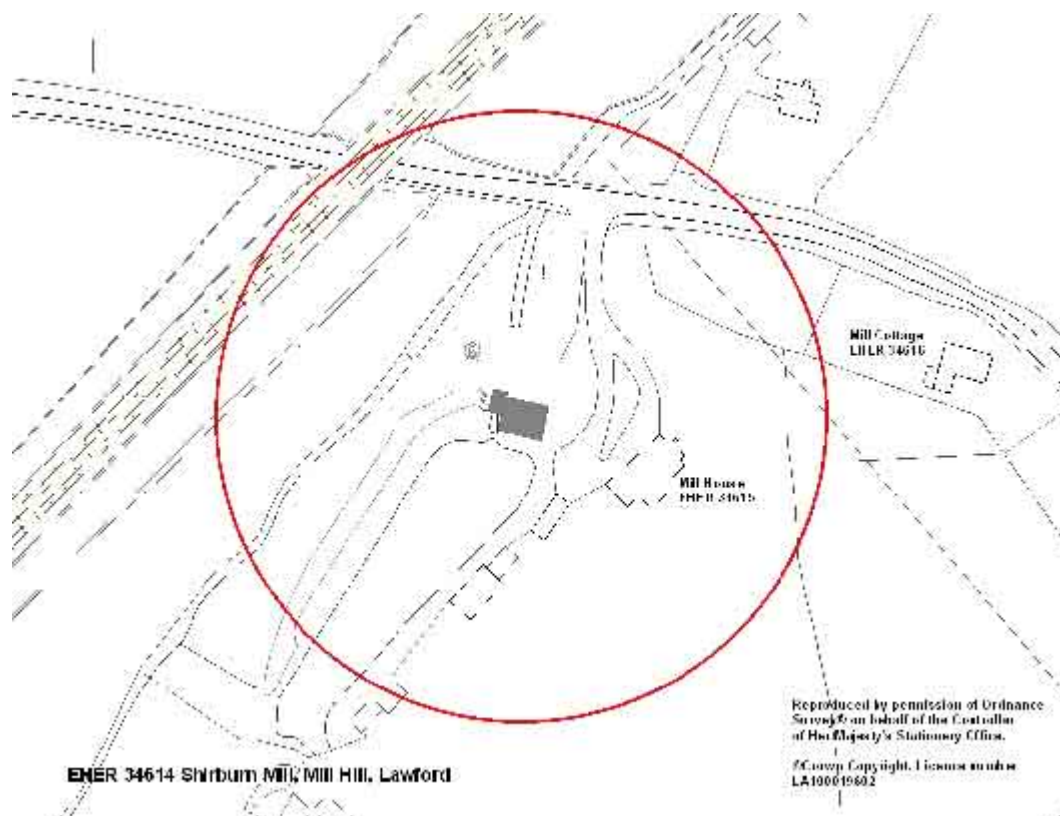
Maintain current Grade II status

MANAGEMENT

An historic building impact assessment followed by an historic building survey at an appropriate level should be recommended if Shirburn Mill is threatened by conversion to residential/office use or significant alteration/demolition. Likewise an archaeological record of the structures and earthworks associated with the former (upper) mill should also be recommended if threatened by development.

GRADING **/**





Shirburn Mill looking south

SITE NAME	Spring Valley Mill, Spring Valley Lane		
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PARISH	Ardleigh	DISTRICT	Tendring
NGR	TM 03830 27744	HER	34555
RIVER	Salary Brook	EHUID	120391

CURRENT STATUS	Con. Area	No	Listed	Grade	II*	EBAR	1995
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STATUTORY LIST DESCRIPTION

17/11/1966

Water mill, later adapted to steam, now empty. Late C18. Timber framed and weatherboarded. Red tiled roof of 2 levels, gambrelled to road (north) with lucom at apex. Painted brick ground floor. 2 storeys and loft, lower south bays and lean-to. Cast iron overshot wheel. Road face (north) with arched braces to gabled lucom, 2 open lights under, first floor vertically sliding sash window, vertically boarded door. South face. 2:1:1 first floor small paned vertically sliding sashes, moulded surrounds. Ground floor 1:1:0 similar windows. Two doors to north range and a door each to south range and south extension, all vertically boarded. The machinery and interior of the mill are complete but not in working order. Overshot waterwheel with cast iron frame and wrought iron buckets, fed by a cast iron trough from the mill pond. The wheel shaft, pit wheel and wallower are cast iron, but the upright shaft and great spur wheel are of wood. The great spur wheel is of the old compass-arm construction with 6 arms passing through the upright shaft. There are 3 pairs of millstones on the first floor complete with cases and hoppers etc., underdriven from the spur wheel below. All tentering gear is present. Above the stones is a wooden crown wheel and layshaft, which drove the sack hoist above and any dressing machinery the mill may have had. The roof space is partitioned into bins, and contains the sack hoist, which could act through the external sack traps or the lucom. Setting for the novel Treasure at the Mill by M. Sackville. Robert Deeves was the miller working for Bezaliel Angier of Colchester, 1796. F.H. Erith "Ardleigh in 1796", 1978. Information from V.C. Pargetter, E.C.C. Millwright and Alderton & Booker, 1980.

JOHN BOOKERS SURVEY

05/02/1974

Shown as Ardley mill on map of Moze Hall by Samuel Cosin 1636 and then as a fulling mill on the Chapman and Andre map of 1777. Deeds of 1791-1886 include a section (Sept.1863) which refers to a newly erected engine house with a 6 HP beam engine and 12 HP boiler. Late C18 2 & 3 storey timber framed and weatherboarded mill with a tiled mansard roof. The windows are double hung sashes with glazing bars. The machinery was largely intact in 1969 but water wheel floats were disintegrating. Cast iron overshot water wheel 13ft 6ins in diameter, 4ft 9ins wide, pit wheel, upright shaft, wallower, spur wheel and crown wheel all still in position. 3 pairs of stones, one 3ft 8in in dia. and the others 4ft, complete with tuns. Used for grinding and crushing beans until 1938.

Present Use: Private house

Condition:

ERO SOURCES: (D/DR P1), (D/CT 6), (D/DC 41/521), (D/DEI T 303), (T/B 216/2)

SITE BACKGROUND:

One of three fulling mills along the Salary Brook. Known as Spring Valley since 1840 but before as Ardley Mill. The last miller was Tom Clover whose family acquired the mill in 1886, but prior to Clover, Spring Valley was owned by Griffith family of Dalston who purchased it for £300 in 1873. At this point it was a working steam and flour mill with flour processing and smut machines and a newly erected boiler & engine house operating a 6HP beam engine and 12HP boiler. Built as a three stone country mill,

the sifter, stones and corn feed remain (c.1975) as does the spur wheel, stone nuts and an iron penstock supplying an overshot wheel. Other survivals include a number of stone balls, perhaps used for grinding fullers earth and a small overshot waterwheel operating a water level alarm (Benham, 1976). The mill was derelict by 1966 but has since been restored by Mr G Young.

Field Survey 2008

05/02/08

The mill race from the mill pond sited along the NE wall of the mill feeds directly into the wheelpit located off centre and within the lower SE range. The mill pond is a large teardrop shaped pool, widened at the mill end to create sufficient head water. Through a sluice water is by passed around the mill to the south to rejoin the tail as it passes below Spring Valley Lane. The mill house (EHER 34556) lies immediately south of the mill and is a multi-period building dating from the C17 or earlier. It is timber framed with a plastered ground floor, weatherboarded upper storey and plain tile roofs.

Spring Valley Mill is a 3½ storey part brick, part timber framed and weatherboarded mill. It has a plain tile Mansard roof with eaves over the first floor level and an over-sailing **lucam** projecting NW to roadside. Aligned NW-SE the roof of the Mansard covering the NW bays (? 3 bays) is elevated slightly above the ridgeline of the adjoining in-line range to the SE. The latter is also a Mansard construction but unlike the road side bays has a hipped end. Externally the mill seems to have altered little since it was listed in 1966. No noticeable alterations have occurred to the doors or windows, which retain halved or vertically boarded doors and sash windows respectively. Internal access to the mill was not available, therefore an assessment of its surviving gearing, fixtures and fittings could not be completed. Presently the mill is in a poor state of repair and has been since at least 1995, when it was first added to the Essex Buildings at Risk Register. Concerns remain over how watertight the building is, the Mansard roof over the roadside range is sagging badly, it is overgrown with ivy and in places the mill is missing weatherboarding particularly along the base of the lucam. Generally the appearance suggests chronic neglect.

Present Use: Disused

Condition: Poor, requires immediate attention

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C18	Brick/Timber	High
Mill House	?C17/18	Timber	Med-high

ARCHAEOLOGICAL POTENTIAL

Unusual in the levels of survival, as described in the list description. Although access was not available to confirm the current situation it still (potentially) remains one of a very few Essex watermills that retains its wheel and stone drive and as such could theoretically be returned to a working condition using its extant technology.

SITE SIGNIFICANCE

A three stone country corn and steam mill which survives as 1 of 14 watermills in Essex that remain in an unconverted state and one of an even fewer number which (potentially) still retains all, or a high proportion of its mill gearing, fixtures and fittings. The importance of this gearing is heightened by the unusual use of an overshot waterwheel, Spring Valley being one of only 8 extant overshot mills built in Essex and one of only two (the other Bourne Mill, Colchester) that still retains its waterwheel. Its continued disuse and the reluctance of the district to grant planning for residential

use has been a major factor in the buildings preservation but also the reason behind the general lack of maintenance by the current owner. In its present intact state Spring Valley Mill survives as one of the most important watermills in the county.

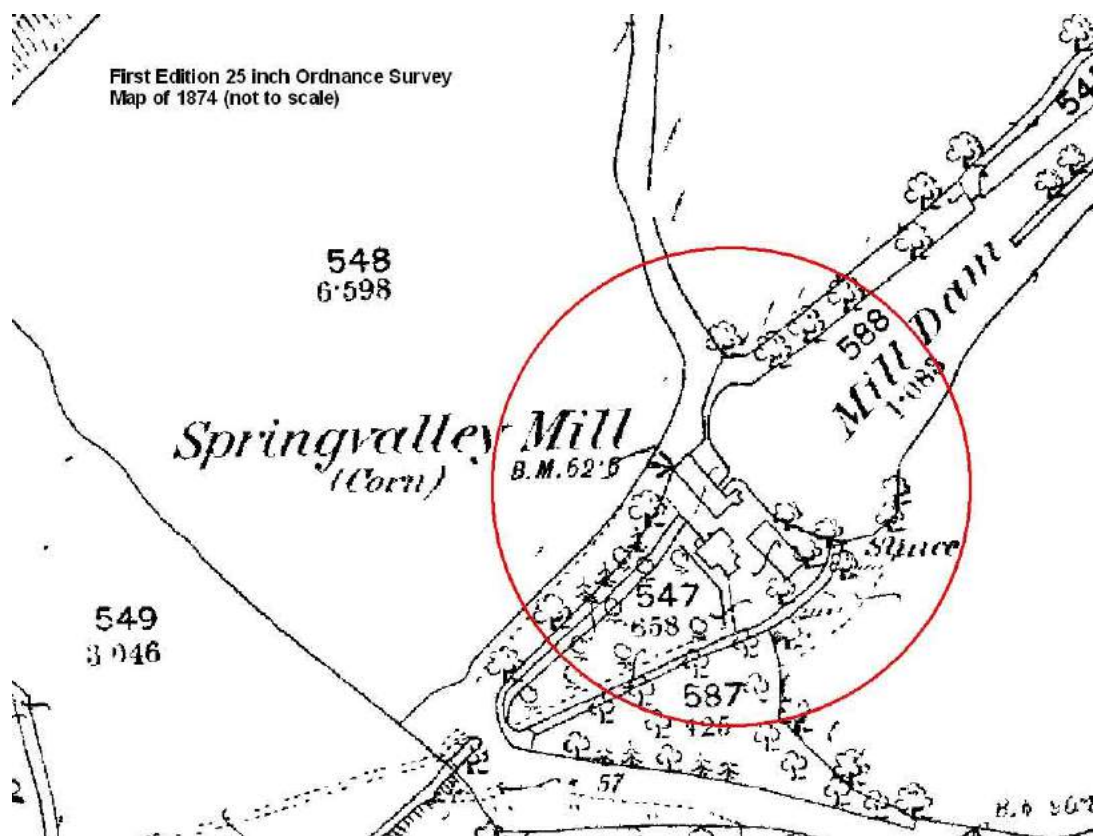
RECOMMENDED ACTION

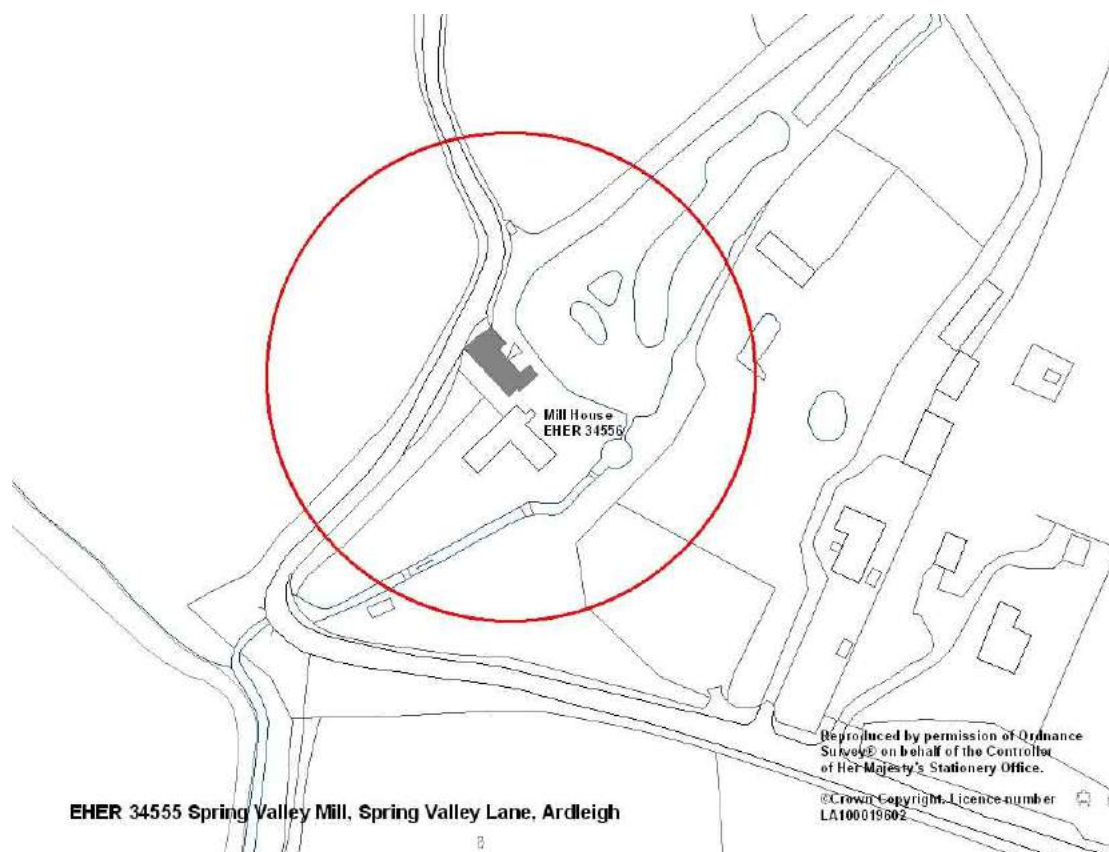
Maintain current Grade II* status

MANAGEMENT

It is currently on the Essex Buildings at Risk Register and should remain so. The appearance of Spring Valley Mill suggests neglect. Its condition presents concern over a number of issues; how weathertight is the mill, what is the condition of brick revetment wall to the mill pond, the condition and survival of internal milling apparatus and if no action is taken, its future. Enforcement should be seriously considered. Should the mill become the subject of a planning application for residential or commercial use, an impact assessment should be undertaken pre determination, to fully assess the historic, architectural and technological significance of the mill and its suitability for conversion. Such work should also attempt to understand the history and development of the site, and be guided by the principle of trying to preserve as many as possible of the original features of the building.

GRADING ***/*





Spring Valley Mill looking north-east

SITE NAME	Thorrington Tide Mill, Brightlingsea Road		
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PARISH	Thorrington	DISTRICT	Tendring
NGR	TM 08234 19440	HER	34312
RIVER	Alresford Creek	EHUID	425904

CURRENT STATUS	Con. Area	No	Listed Grade	II*	EBAR	No
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STATUTORY LIST DESCRIPTION

29/04/1952

Tide will. C19. On site of former mills. Timber framed and weatherboarded, brick plinth. Grey slate roof. 3 storeys, loft and lucam. South face, 2 window range of 6 paned casements, small paned vertically sliding sash to north, east gable with lucam supported by timber struts, central halved door to second floor and halved door to left of ground floor. West face, window to loft. The flanged cast iron breast shot waterwheel is mounted on a cast iron wheel shaft which passes through tile base of this wall. Eight angled spokes were bolted into the hub. There are remains of timber around the rim. Many of the bucket- supports are in-situ. Interior of 3 x 4 bays, large section storey posts, through bracing to walls. Central down braced storey post to third floor. Chamfered bridging joists, side purlin ridge board roof. Drop doors to each floor. The pit wheel is mounted on the wheel shaft and consists of a wooden rim with cast iron spokes. A segmented ring of cast iron teeth is bolted to the wooden rim, which shows evidence of earlier wooden teeth and wooden spokes. The pit wheel engages a cast iron wallower mounted at the base of a wooden upright shaft. Mounted above the wallower is a wooden clasp-iron great spur wheel with wooden teeth. The spur wheel engages cast iron stone nuts on the spindles of 3 pairs of millstones above. The tentering gear for adjusting the millstones is present, together with a device for putting the stone nuts out of gear when not in use. Climbing to the stone floor the 3 pairs of 4 foot French burr stones are visible. One runner stone and all the stone cases and hoppers are missing. Above the stones, on the upright shaft is a compass-arm wooden crown wheel, with wooden teeth engaging a small pinion on a horizontal layshaft. This layshaft drove the sack hoist and dressing machines by belt. Also on the stone floor is a Simon dressing reel. Above the stone floor the bin floor is empty except for the sack hoist drum. The loft above the bin floor has access to the lucam. This is the only remaining Tide Mill in Essex and one of the very few left in East Anglia. The dam wall is of red brick, mainly covered with earth and gravel. (Information from V.G. Pargetter, County Millwright).

JOHN BOOKERS SURVEY

21/11/1972

A most important building; unique as a tide mill (unfettered by other remains) in the administrative county and a very rare survival in this condition on a national scale. 3 storeys, a hoist loft and slated roof. The best surviving feature is the iron waterwheel, about 16 ft diameter and 6ft wide, quite skeletal in appearance but nonetheless a rarity. The foundations of the building are said to be relatively ancient but the present structure is c.1830s. A date of 1836 is said to be inscribed on a beam and there is reportedly a date stone of 1831. Plans are proposed for the restoration of this important mill, which reportedly worked up until 1928.

Present Use: Store

Condition: Good

SITE BACKGROUND:

Records of a mill at Thorrington exist from the medieval period, with a mention in Domesday (1086) and the gift of a mill site in the marsh in c.1245 by Richard de Asketot to St Johns Abbey, Colchester. Reference is made to a landing place, the

mill on Alresford Creek c.1570 and around hundred years later the acquisition of the mill by the Revd. John Cox and its occupation by James Brand (1675). A few years later (1688) the mill passed into the hands of Joseph Thurston and by 1740 it was owned by William Walker, who also built an accompanying windmill on nearby Coopers Hill. Both the windmill and the tide mill are depicted on the Chapman and Andre map of Essex dated 1777. A bill of sale dated 1810 describes the mill as a *'very valuable freehold estate in the centre of very productive corn country, surrounded by good markets. Now in the occupation of Daniel Poole, comprising a powerful and complete tide mill with two pairs of French stones to drive with spur gears, four flour mills, convenient stage, new waterwheel and all necessary machinery, with a constant supply of fresh water'*. The mill was purchased the same year by William Eve and his son, who by 1820 had equipped it for grinding cement. By 1830-31 the mill was rebuilt and it is this mill which survives today. From 1841-1912 Thorrington was in the hands of the Cooper family and was last worked by water power in 1926 following the failure of the waterwheel, although it continued some time after using a portable steam engine. From 1941 local farmer Thomas Glover took on the mill but after it fell into disrepair sold it to Essex County Council in 1974, who preceded to restore it to its present condition. This programme of works, part funded by English Heritage, included structural repairs to the timber framing and roof to make it weathertight, the dredging of the watercourse, the reinforcement of the bank-side and the rebuilding of the waterwheel and wheel house. The gear train was completely overhauled, associated apparatus repaired and reinstated and the three pairs of millstones were fully refurbished. In 1990 the waterwheel was turning once more using tidal waterpower and in 1993 was opened to the public.

Field Survey 2008

Thorrington tide mill is situated at the end of Alresford Creek and within the salt marshes around Brightlingsea. As Alresford Creek flooded twice during a 24 hour period a pond dam and sluice arrangement was constructed at the end of the Tenpenny brook to trap the tidal water. The water from the pond or pound was released and channelled through the mill to power the waterwheel. Rebuilt in 1830-31 the present mill is 3½ storey timber-framed and weatherboarded with a gabled ended slate covered roof, oversailing **lucam** with straight braces and a brick base. It retains a 16ft diameter by 6ft wide cast-iron, flanged **undershot** waterwheel mounted upon a 12 inch diameter iron shaft on open bearings. The wheel sits within a rebuilt wheel pit/race and beneath a slated, open sided lean to shelter re-established on the site of its predecessor. A small lean-to counting house has also been rebuilt on its original site against the SE angle, while along the opposite wall a drive wheel, once used by a portable steam engine, remains in situ. A halved taking-in door is situated on first floor below the lucam in the eastern gable end wall and another along the southern wall at the same level. The sash windows' joinery is mainly original although some windows were repaired, to the same design, during restoration. In common with the windows areas of weatherboarding were also replaced due to decay. This however was mainly confined to the leeward or western bays of the southern elevation and was replaced 'like for like' using cedar boards. Some structural replacement of the framing and part of the **hursting** was also carried out in this area of decay.

Lying at the opposite end of the main iron axle and within the **cog pit** is a wooden **pit wheel** with iron cogs. This meshes with a cast-iron **wallower** mounted using oak wedges, onto an octagonal timber **upright shaft**. Above the wallower is the **great spur wheel**, a timber construction with wooden cogs. The spur wheel drives three cast-iron **stone nuts**, which in turn drive the **stone spindles** and the three sets of millstones on the floor above. The **disengagement jacks** for the stone nuts and the **tentering** gears remain in situ as do fixtures such as the **twist pegs**, spouts for the

meal and the sluice controls. All three pairs of four foot French Burr stones remain on the stone floor. The octagonal **tuns** and the millstone **furniture (horse, shoe and hopper)** are complete although they are either part or complete replacements. The sack hoist or **chain bollard** providing drive to the **sack hoist** mechanism remains on the floor above. The sack chain and traps rise through the mill to provide an internal hoist for lifting sacks into the roof space. A catwalk or axial gangway was the main feature of the attic floor. It enabled grain hoisted up through the **lucam** to be barrowed into the grain bins which lay below either side. Above the catwalk and mounted into the apex of the roof are the pulleys of the sack hoist and an unusual high level trip lever installed to prevent the sacks damaging the roof structure above. The corn bins on the second floor were simply constructed using boards. They gravity fed, via sack chutes, the millstones on the floor below. Thorrington Mill house (EHER 34313) dates to the C18 or earlier

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	C19	Timber	High
Mill house	C18/19	Timber/Brick	Med
Mill Dam	C18	Brick/earth	Med

ARCHAEOLOGICAL POTENTIAL

Thorrington tide mill retains much of its internal spatial integrity, fixtures and fitting and technology. Although some elements have been replaced and renovated during its recent restoration, it survives as a very rare example of a complete early C19 tide mill and one which occupies a very ancient milling site

SITE SIGNIFICANCE

Thorrington tide mill is the only surviving complete and working tide mill in Essex. There are no comparable working examples within the region and in a wider context it is one of a small number of working tide mills in the country and one of only a handful in Western Europe. As such Thorrington tide mill is not just one of the most important watermills in Essex it is important on a national and international level.

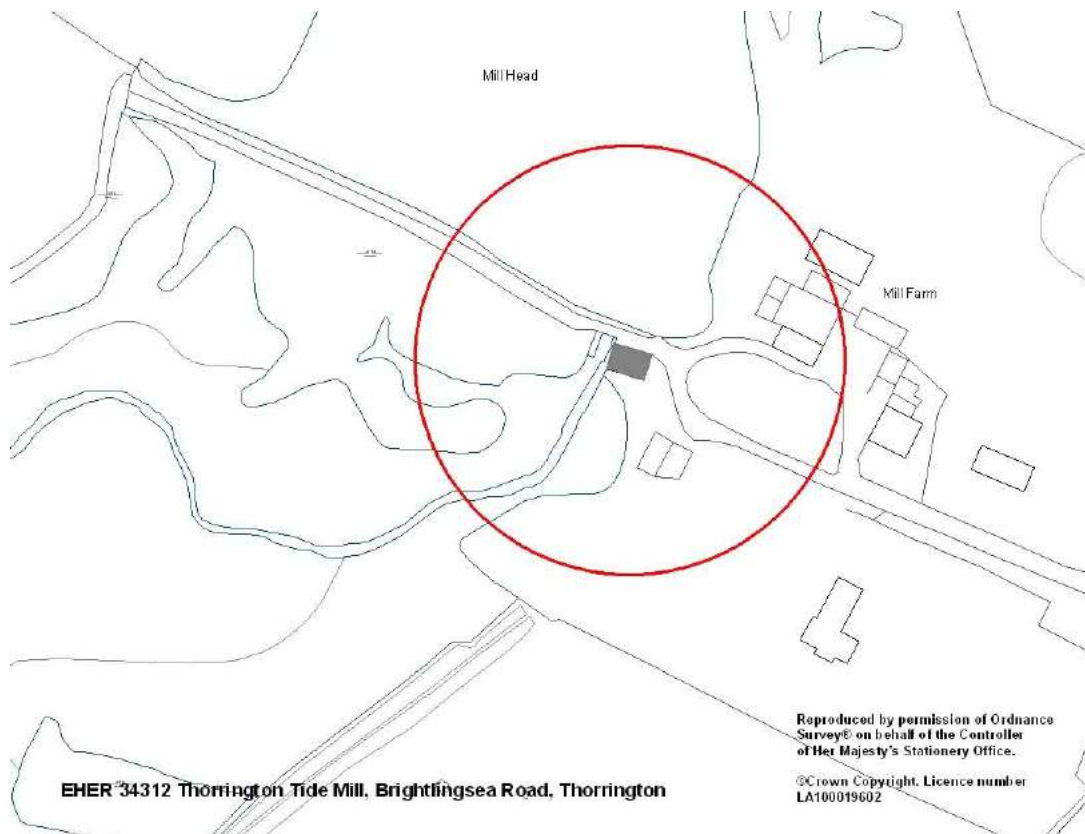
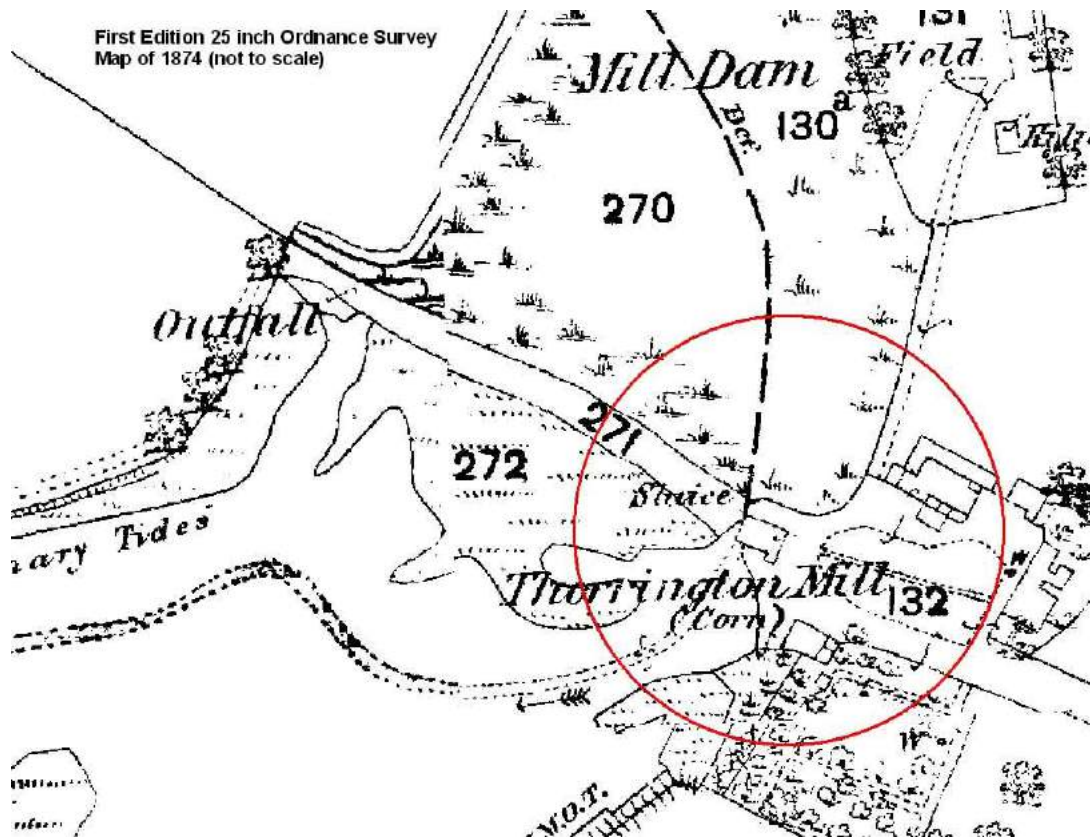
RECOMMENDED ACTION

Maintain current listed status.

MANAGEMENT

Thorrington tide mill is owned by Essex County Council (ECC) who through the ECC Mill Team restored the mill from a derelict state to its present condition. It is lovingly maintained and regularly open to the public for events and public holidays. Any significant works to the building or the milling site would require a systematic archaeological or architectural survey at an appropriate level.

GRADING ****





Thorrrington Tide Mill

THURROCK UNITARY

EHER	Site Name	Grade
5122	Baker Street Steam Mill, Baker Street, Orsett	*



SITE NAME Baker Street Steam Mill, Orsett			
PARISH	Orsett	DISTRICT	Thurrock UA
NGR	TQ 6330 8129	EHHER	5122
RIVER	NA	EHUID	119607
CURRENT STATUS	Con. Area	Listed Grade	II EBAR No

STATUTORY LIST DESCRIPTION

08/02/1960

Said to date from 1674. Octagonal 2 storey weatherboarded smock mill on 2 storey brick base. Remains of gallery at first floor end. Mid C19 engine shed adjacent in red brick. All now ruinous.

SITE BACKGROUND:

The site comprises a dilapidated smock mill on a two-storey brick base, missing its cap and gallery with disintegrating sails. The main interest lies in the adjacent early C19 brick and slate steam mill with an A frame beam engine by Middleton of Southwark (Alderton & Booker, 1980). The grade II listed smock mill is thought to date from 1674. It is an octagonal 2-storey, weatherboarded mill on a 2-storey brick base. Prior to its restoration it retained remains of gallery at first floor, a fragmentary boat-shaped cap, a broken tail fan and the remains of 4 patent sails. The windmill and adjoining mid C19 engine shed had deteriorated much since the war, All now ruinous (EHER 5122)

Field Survey 2008

08/02/08

The mill lies in a relatively isolated location to the south of Stifford Road and on the western edge of Baker Street and Orsett respectively. The principal buildings on site include a recently restored weather-boarded smock windmill, a mid C19 brick and slate steam mill and various later residential accretions. The Baker Street mills were not accessible or easily observed due to the remoteness of the site from both Baker Street and Stifford Road. Hence all survey was carried out at a distance from the roadside and the description is accordingly brief. The steam mill comprises a 2½ storey yellow stock brick double pile adjoining a smaller perpendicular two storey range to the east with a half hipped slate covered roof. A tall C19 industrial chimney stack with brick corbelling lies at the junction of the two ranges and along the northern wall. The western bays of the double pile appear to be a modern rebuild or enlargement of the existing steam mill. The steam mill windows are modern replica sash windows set into simple segmental brick arches. Following the completion of its restoration in c.2000 the A frame beam engine was 'in situ' and had been incorporated into the final scheme, while some mill gearing remained within the smock mill (pers. comm.). The smock mill (EHER 35154) has a two storey brick base, a timber-framed and weather-boarded octagonal mid-section (stone and bin floors) and restored cap and sails. The mill house (EHER 35153) lies to the north of the site and is C15 to early C16 timber framed and weather boarded with a jetty to roadside and a gable ended plain tile roof. It has been enlarged with a C19 brick extension to the rear and sits abreast a later unjettied 1½ storey gabled and weatherboarded range. Timber framed outbuildings and a possible brick granary lie within the adjoining courtyard to the west.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Status (H/M/L)
Steam Mill	C19	Brick	Low-med
Smock Mill	C17	Brick/Timber	Med
Mill House	C15-16	Timber	Med (grade II)
Granary	C18/19	Brick	Low-med

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of rebuilding and conversion, the former steam mill retains little of its internal spatial or technological integrity. However, the A frame beam engine noted by Alderton & Booker in 1980, has reportedly been kept as part of the mills residential conversion (c.2000). If this is the case the only other comparable example in the county survives at Beeleigh Mill in Maldon. Although the smock mill was dilapidated when Booker visited in the late 1970s, it does retain some internal gearing and apparatus, although the internal spaces have been much altered and the gearing survives in a secondary, purely decorative context.

SITE SIGNIFICANCE

Interesting site in its unusual grouping of a smock mill and a large attached steam mill. The two mills share group value together and with the nearby historic mill house. Its most interesting attribute however is (reportedly) the retention of an A frame beam engine, which remains as one of only two such survivals in the county.

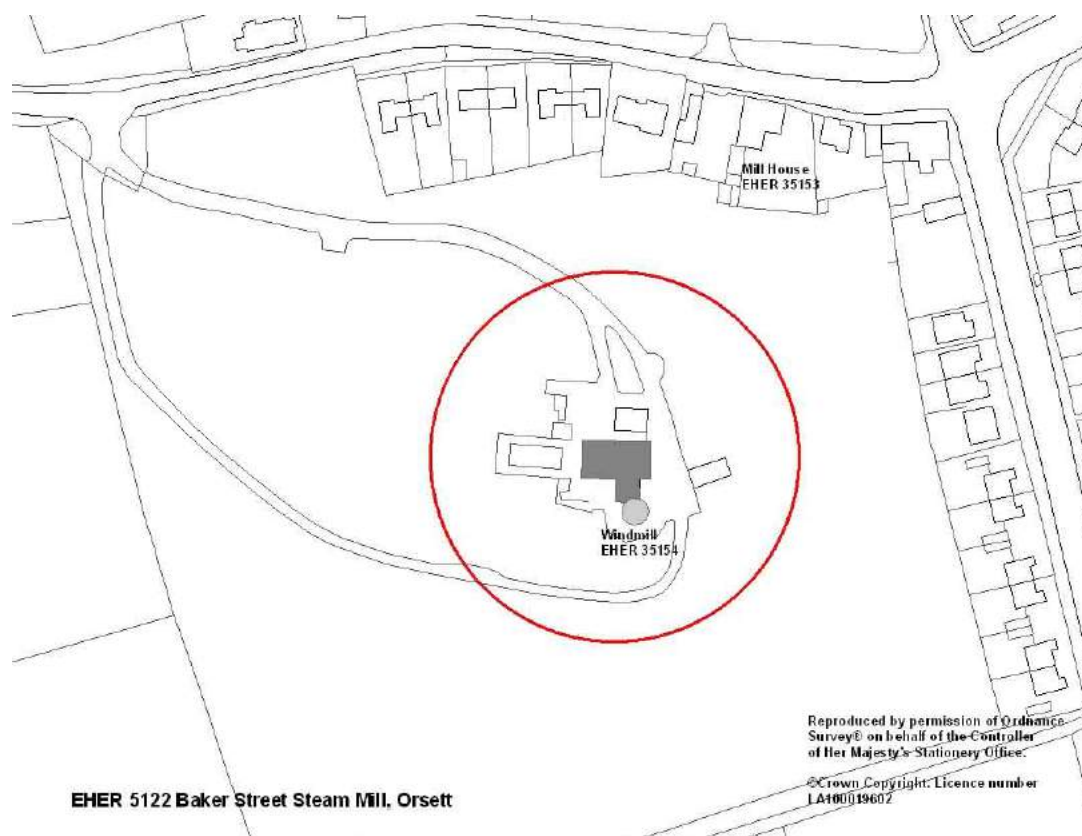
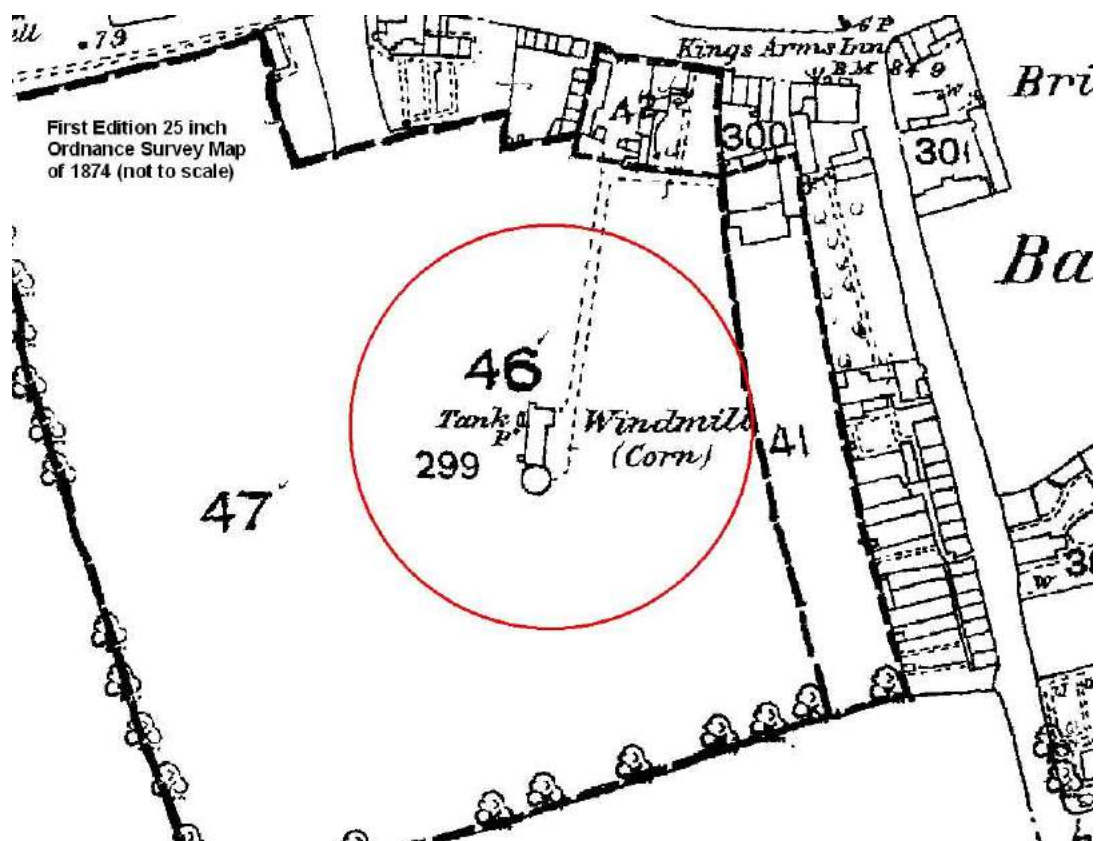
RECOMMENDED ACTION

Due to levels of internal and external alteration to the steam mill, it does not merit individual listing. However it is listed by curtilage to the smock mill and should be recognised on a local list of important buildings.

MANAGEMENT

Baker Street steam and windmills are both in residential use and well maintained. An historic building survey at an appropriate level should be advised if either mills are threatened by significant alteration or demolition.

GRADING *

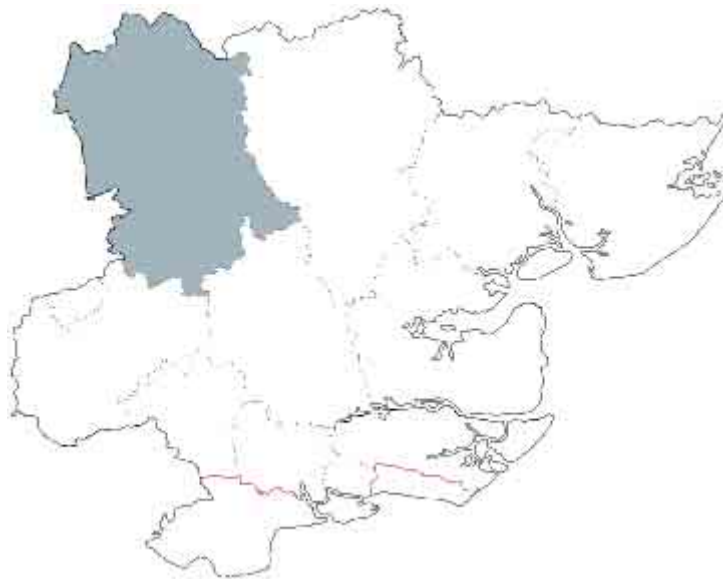




Baker Street Steam Mill and Smock Mill looking south-east

UTTLESFORD DISTRICT

EHER	Site Name	Grade
Watermills		
36493	Bran End Mill, The Broadway, Bran End	**
46090	Elmbridge Mill, Mill End, Little Easton	*
37138	Felsted (Abchill) Mill, Mill Road, Felsted	**
3651	Hallingbury Mill, Old Mill Lane, Gaston Green	***/*
37124	Hartford End (Camsix) Mill, Hartford End	***
35636	Littlebury (Kings) Mill, Mill Lane, Littlebury	***
37114	Tilty Mill, Tilty	***/*
36671	Town Mill, Mill Lane, Stebbing	***
Steam Mill		
40675	Barnards Mill, South Road, Saffron Walden	*
37073	The Mill (Steam), Cock Green, Felsted	**
15065	Kings Mill, London Road, Great Chesterford	*
15105	Hatfield Heath Corn Mill, Stortford Road, Hat. Heath	*/**
40702	Wendens (Steam) Mill, Wendens Ambo	*



SITE NAME Barnards Mill, South Road, Saffron Walden			
PARISH	Saffron Walden	DISTRICT	Uttlesford
NGR	TL 54117 38024	EH	40675
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

SITE DESCRIPTION:

Barnards Mill is located within the former industrial quarter of Saffron Walden and lies along the west side of South Road and immediately adjacent to the redundant Saffron Walden Branch Line. The mill post-dates 1865-6, the year the Saffron Walden Railway Company opened the branch line from Audley End to Bartlow Junction and was originally built as a steam powered corn mill.

Field Survey 2007

05/02/07

Built over 3½ storeys, only the upper 1½ storeys are visible from South Road, the remainder of the mill, i.e. the lower two storeys, are below road level and built into the southern bank of the railway cutting. The mill is clearly built in two main phases, with the earlier 5 bays closest to the cutting and a later 3 bay extension to the rear (south). Both phases adopt a similar architectural treatment, built in red brick with pitched slate roofs and blue brick arch heads and sills. Now residential, the earlier mill has gable parapets, a decorative moulded brick eaves cornice and a tier of taking in doors with blue brick jambs (now converted to windows) occupying the central bays of its northern, railway facing elevation. The original **lucam**/hoist within the northern gable has been removed, the head of the gable rebuilt and the aperture adapted into a round headed window. A change in the brickwork across the western rear elevations suggest alteration and enlargement allied with its conversion to residential use. The windows throughout are modern casements with small panes, which probably replicate the original style of fenestration. Gable dormers have been inserted into the rear (western) pitch of the roofline. Internal access not available.

Present Use: Residential

Condition: Good

SITE COMPONENTS

Term	Period	Material	Status (H/M/L)
Steam Mill	Later C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Due to the extensive levels of conversion, little or no internal spatial or technological integrity is expected to survive

SITE SIGNIFICANCE

One of 27 extant steam mills that survive across Essex and one of five identified in Uttlesford (Barnards, Cock Green, Great Chesterford, Hatfield Heath & Wendens Ambo) during the survey. Although it has been extensively altered the former mill still retains some of its character and readability. The mill makes a positive contribution to the historic character of the Saffron Walden Conservation Area and is a rare survival of the towns industrial past.

RECOMMENDED ACTION

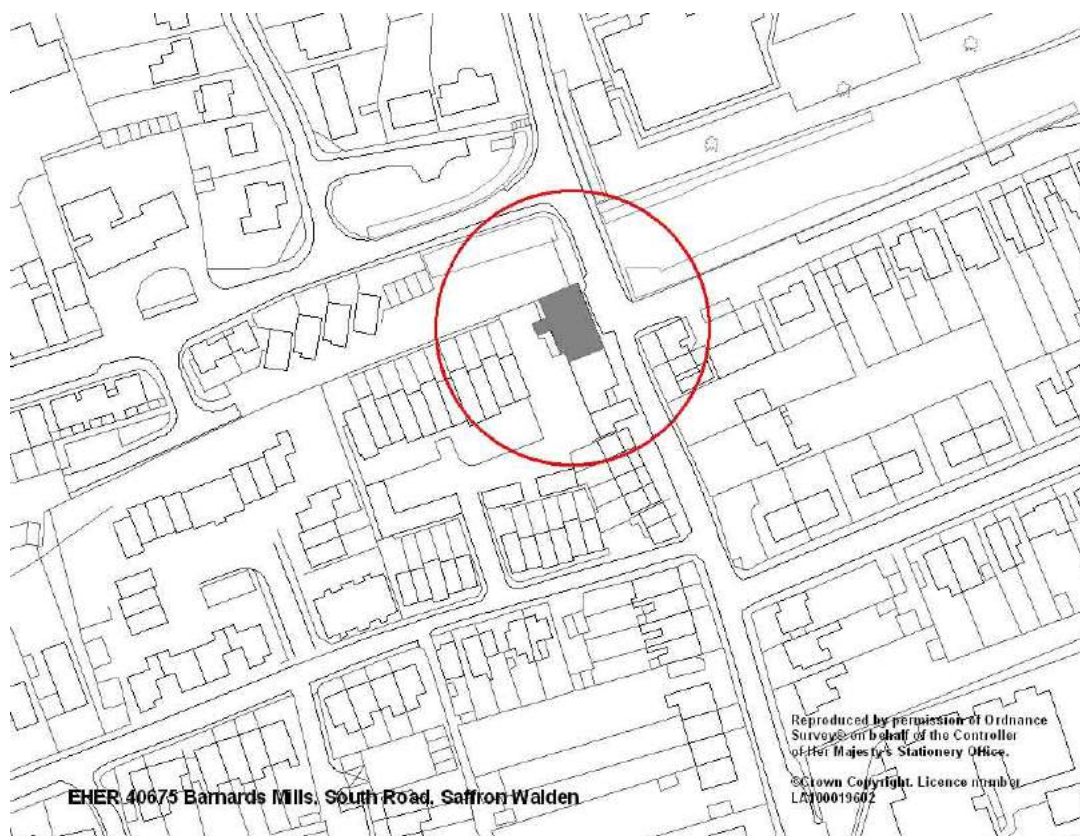
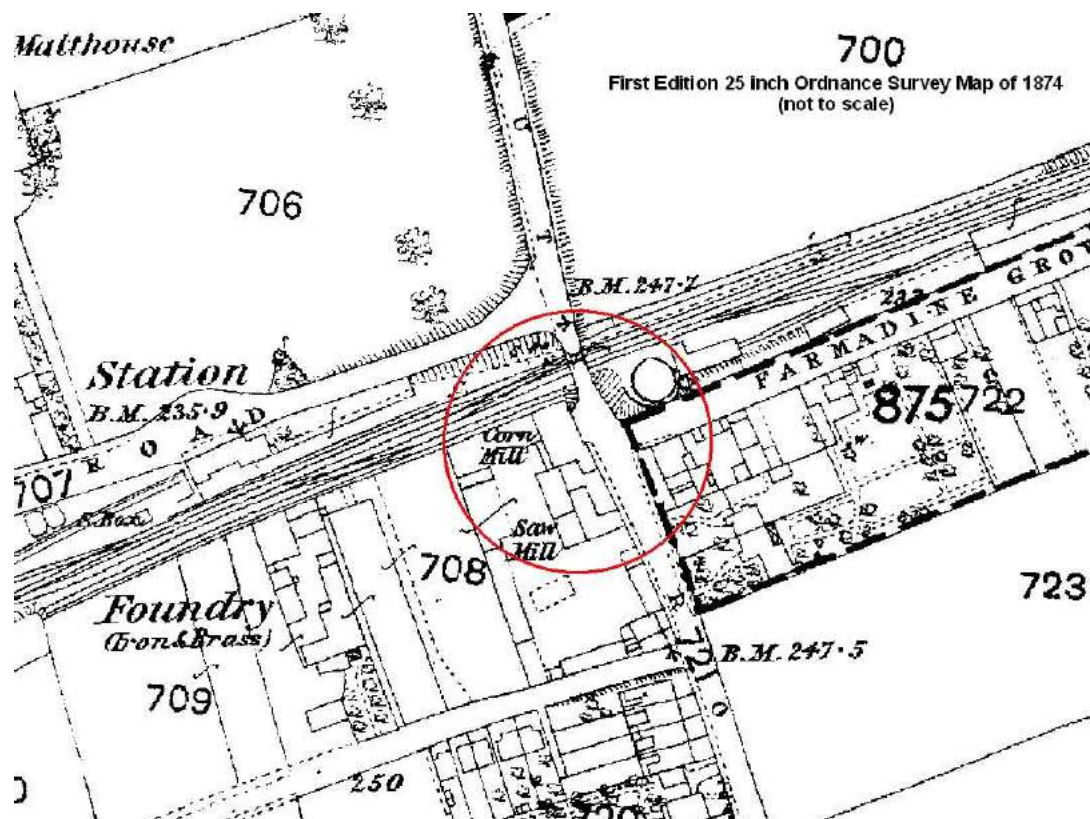
Although the mill is not listable, it should remain within the Saffron Walden Conservation Area and be recognised as a locally important building and

incorporated within future Local Development Documents.

MANAGEMENT

Barnards Mill is in residential use and well maintained. An historic building survey at a level no higher than RCHME level 2 should be recommended if it is threatened by significant alteration or demolition

GRADING *





Barnards Steam Mill looking south-east

SITE NAME Bran End Mill, The Broadway, Bran End			
PARISH	Stebbing	DISTRICT	Uttlesford
NGR	TL 65212 25132	EH	36493
RIVER	Stebbing Brook	EHUID	122736
CURRENT STATUS	Con. Area No	Listed Grade II	EBAR No

STATUTORY LIST DESCRIPTION

23/07/1980

Watermill, now converted into a dwelling. Mid/late C19 on site of earlier mills. Red brick built of 5 bays and 3 return bays with pilasters between bays. Grey slate roof. Gabled, weatherboarded hoist loft with small window. 2 storeys, basement and loft. 4 range of original recess small paned metal windows with segmental arched heads. 2 storey board doors. 6 circular iron tie brackets.

JOHN BOOKERS SURVEY

07/03/1972

A Victorian brick built mill, 2 storeys with hoist loft and slated roofs. The walls are strengthened by pilasters strips and there are tie bars through each floor. Although the mill was built in c.1860, according to 'modern principles' it still used water which had been dammed, on the opposite side of the road, used by earlier mills on this site. The steam plant described in the sale particulars of 1886, was auxiliary and housed in an adjoining structure by the S angle of the mill. Little sign of this remains. It is reported that the machinery was taken out in 1932. Currently owned by C.G. Pulford and Sons Ltd, agricultural merchants.

Present Use: Working by electricity

Condition: Good

ERO SOURCES: (D/DGe 182), (D/DGe T 25/2), (B 2587)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

Records exist of a mortgage dated 1745 by Samuel Playle of Stebbing to Richard Pettit of Great Sailing for Elliots or Brands End Mill. Subsequent mortgages were made in 1752 and 1816 between Playle and Pettit & Mott, and with John Francis. In 1839 the mill was worked by Joseph Whitehead but was rebuilt c.1870 and placed on the market in 1886 and advertised as having a steam plant and an associated tower windmill. It ceased flour milling by 1887 but continued under Alfred Brabridge (1895) and James Lockett until 1906. Latterly grist for animal feed was ground by C.G. Pulford & Sons who took over the mill in 1907. At this point it still had an overshot wheel with a 14ft fall and two pairs of 4ft 6inch French Burrs. It occasionally milled small amounts of corn for local farmers into the early C20 (Large, 1959).

Field Survey 2007

04/04/08

A 3½ storey (including basement and attic) 5 bay red brick mill under a gabled slate roof. Built using pier and panel with projecting pilasters, the mill comprises three equal sized bays to the NE and a wider bay to the SW (as seen from the rear). To the roadside the larger bay is divided by an additional pilaster supporting an off-centre loading door at first floor (now converted to a window). This discrepancy in bay size is most likely associated with the location of the main mill gearing; water wheel, stone gear and stones and of the steam engine, once housed in a projection built against the SW angle. The gable ended **lucam** lies central to the roof and is positioned above the eaves and within the roof structure of the NW roadside elevation. Small segmental windows light the attic floor from both gables. The brickwork is laid in Flemish bond and remains in a good condition despite its re-pointing using a hard

mortar with weather-struck joints. Most of the window and door apertures retain their original segmental rough brick heads and plain stone sills. The present windows are modern timber 6x3 light casements on a horizontal (hopper type) pivot that have replaced the original metal windows mentioned in the listing. The barge boards, eave soffits and the weatherboarding of the lucam is all modern work. Roof lights have been added into the rear roof pitch. No Internal access.

A large mill pond lying to the NW of the mill provided water to both the mill and the site of the former mill (to the NE), via culverts running below the B1057 Dunmow Road. As the culvert to Bran End Mill appears to be blocked or at least partially blocked, the main volume of water now passes through the NE culvert, rebuilt in concrete during the latter part of the C20, and by passes the mill to the north. However as the mill tail has recently been culverted, some water must still pass through Bran End Mills wheel pit. The site of a former watermill, of which only the C18 timber framed mill house (EHER 36494) survives, lies to the NE of the existing mill.

Present Use: converted into apartments

Condition: Fair-good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water Mill	Mid-late C19	Brick	Med
Mill House	C18	Timber	Med
Culverts	C20	Concrete	low

ARCHAEOLOGICAL POTENTIAL

Due to the mills conversion to apartments it is thought very unlikely that any fixtures, fittings or technologies remain extant. The re-engineering of the mill pond, demolition of the former watermill and re-landscaping of the site has most likely to have had significant impact upon its archaeological survival.

SITE SIGNIFICANCE

Bran End survives as one of a small number of overshot mills to be built in Essex and one of only 8 overshot mills recorded during the survey. Although it has been internally altered and the engine house has been removed (as is common) the mill still retains much of its historic and architectural interest. Along with the adjacent mill house Bran End Mill still makes a positive contribution to the character of this area outside the historic core of Stebbing.

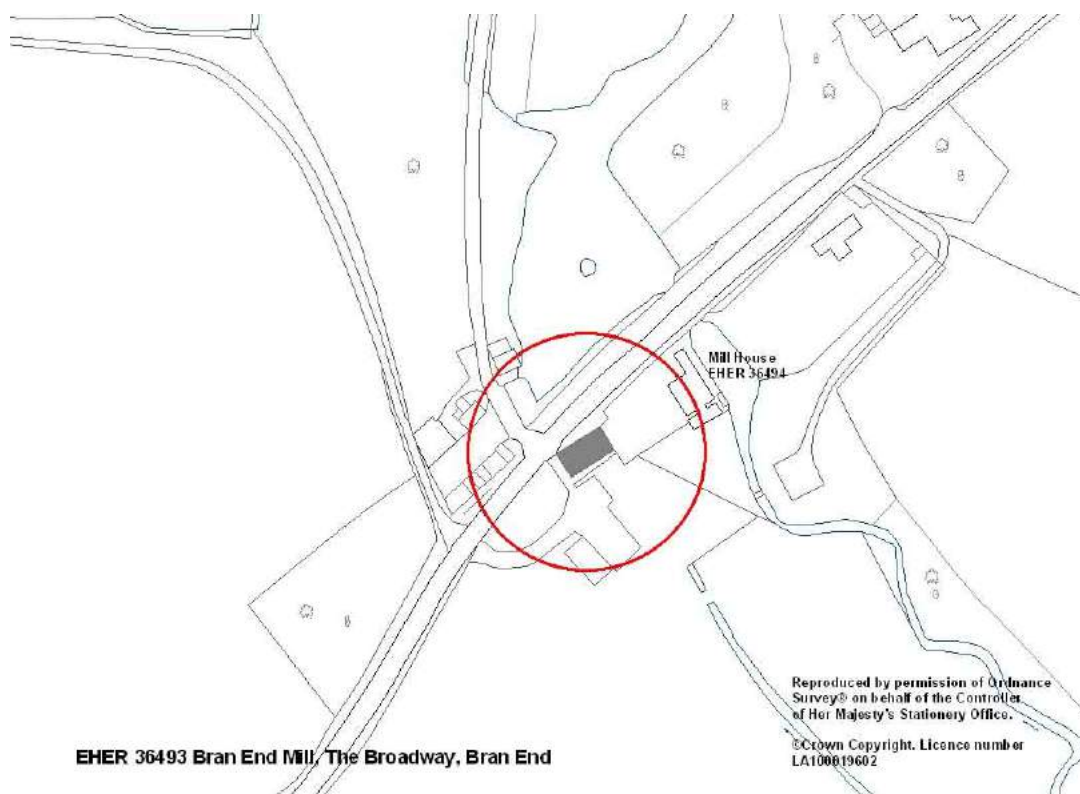
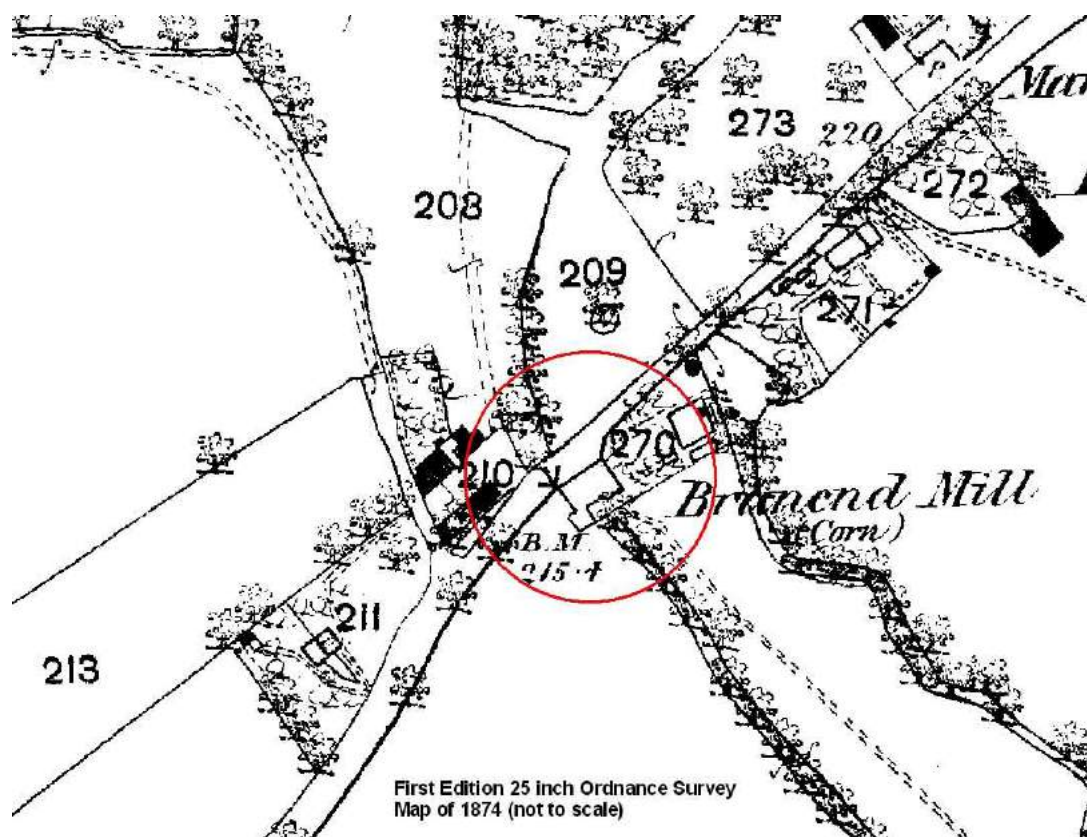
RECOMMENDED ACTION

Maintain current status

MANAGEMENT

An historic building record at an appropriate level should be recommended is the mill is threatened by major building works or demolition

GRADING **





Bran End Mill looking east

SITE NAME	The Mill (Steam), Cock Green		
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PARISH	Felsted	DISTRICT	Uttlesford
NGR	TL 69676 19852	HER	37073
RIVER	NA	EHUID	122586

CURRENT STATUS	Con. Area	No	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION

06/08/1984

Was a steam mill, late C19 on site of post mill, now in light industrial use, 2 storeys and attic. Grey slate roof with 2 Storey extension to right. Brick build with the central, gabled hoist loft, timber framed and weather-boarded with straight braces and central windows. 3 range to first floor, 2 range ground floor of small paned iron windows with segmental brick arches. Central board door with lights above. Extension to right is weather-boarded with sliding shutters to ground floor windows and one window above. There is a small lean-to addition to left with a plain board door and grey slate roof. (See Batsford East Anglia Guide to Industrial Archaeology p.88).

JOHN BOOKERS SURVEY

10/06/1970

Late C19 3 storey brick mill with a slate roof and weather-boarded addition, used until very recently as a corn mill (although not by steam). Two millstones are embedded in a garden wall opposite. Auxiliary steam power seems to have begun by 1886 (Kelly) and the present buildings date from that decade. A windmill was present up until about 1920. The nearby mill cottage is a renovated C17 house.

Present Use: Industrial

Condition: In Functional repair

ERO SOURCES: (D/DO T 409)

FIELD SURVEY 2007

04/04/07

Converted to residential use Cock Green mill is a late C19-early C20 3 bay, 2½ storey brick built steam mill with an in line 2 storey 3 bay timber-framed, weather-boarded granary to the south and a single storey lean-to engine house to the north. Built using stock red bricks in Flemish bond the mill has a gabled slate covered roof interrupted by a central **lucam** projecting to roadside (west). Below the lucam is a former taking-in door which has been converted to a window and at ground floor a central doorway with a batten door and blue bull nose brick jambs. The original window apertures were all built with segmental heads of two on-edge courses and chamfered brick sills. The windows of the ground floor are larger than those above and have fixed cast-iron frames with either 7 x 5 glass panes (ground) or 5 x 5 glass panes (first floor). The gabled lucam is clad in weatherboard and supported on straight braces springing from moulded stone corbels. Barge boards, soffits and R.W.G s are all modern. The two gable windows formerly lighting the attic storey also have metal frames although the northern window appears to have been lowered (probably when the central floor to the lucam was removed as part of the mills conversion) and small casements added either side. The roof has been re-covered using original materials and two roof lights have been inserted into the rear eastern roof pitch.

To the south is a two storey timber-framed and weather-boarded former granary range. The sliding shutters to ground floor window (formerly a loading door) mentioned in the listing no longer remain although the shutter rail survives. The larger windows are similar in appearance to those in the brick mill but along with the smaller windows are modern additions. The lean-to engine house abutting the north

wall is built using the same materials as the main brick mill and shares architectural characteristics including the use of bull nose bricks to the door jambs and the cast-iron fixed glazing. The lean-to was built with a canted end to the NE due to the triangular plot of land it occupies. To the NW is a Grade II listed C17 millers house (EHER 37074) which incorporates two millstones within its roadside boundary wall and to the south the site of the former windmill (EHER 1057) which the steam mill replaced.

Present Use: Residential

Condition: Good Order

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam mill	Later C19	Brick	Med
Granary (attached)	Later C19	Timber	Med
Engine house (attached)	Later C19	Brick	Med
Mill House	C17	Timber	Med

ARCHAEOLOGICAL POTENTIAL

No power generating apparatus or mill gearing survive within either the engine house or steam mill although in an increasingly common practise to retain some of the buildings character, part of the sack hoist mechanism was retained within the **lucam** (pers. comm.).

SITE SIGNIFICANCE

One of 27 extant steam mills that survive across Essex and one of five identified in Uttlesford District during the survey. Although it has been internally altered and all of its technology removed, it lacks significant modern accretions and therefore still retains its character and unusually its engine house. As a group the steam mill, adjacent mill house and wall provide a distinctive and positive contribution to the historic character of the small hamlet of Cock Green.

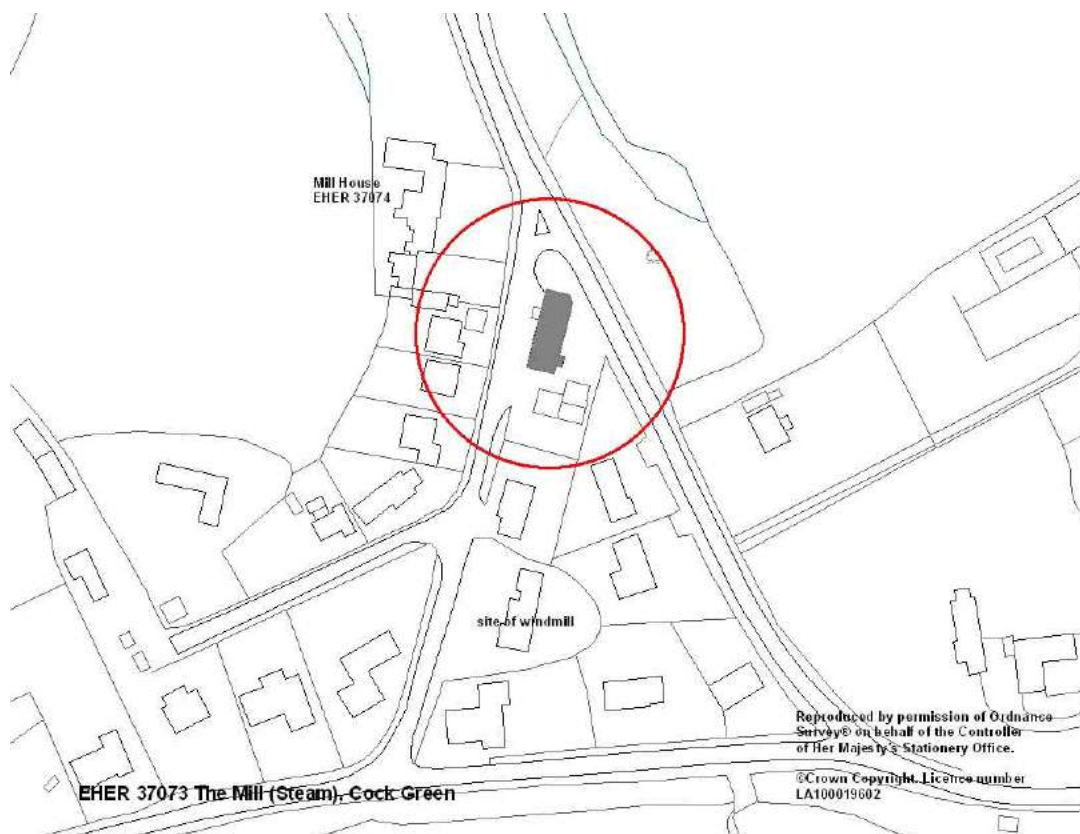
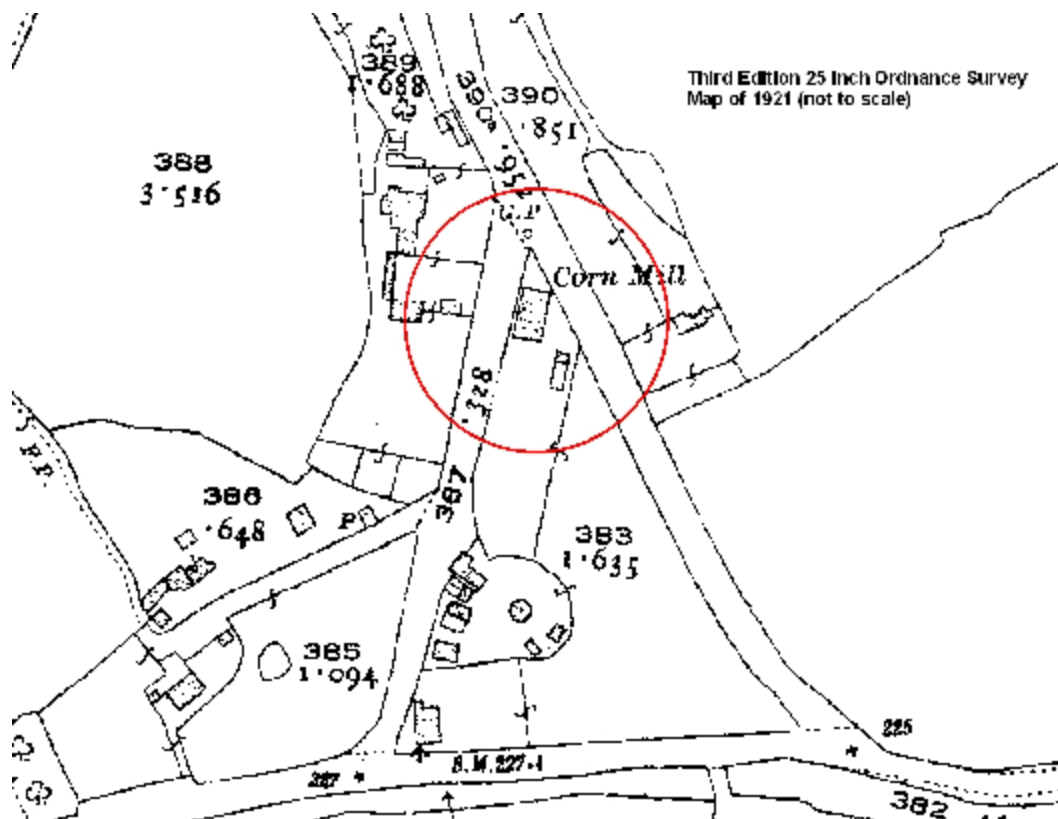
RECOMMENDED ACTION

Maintain current status

MANAGEMENT

An historic building record at an appropriate level should be recommended if the mill is threatened by major works or demolition.

GRADING **





Cock Green Steam Mill looking north-north-east

SITE NAME Elmbridge Mill, Mill End, Little Easton			
PARISH	Little Easton	DISTRICT	Uttlesford
NGR	TL 61780 23920	HER	46090
RIVER	Chelmer	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

10/06/1970

Very little of this former early C18 mill survives following its residential conversion in 1940. There remains a lucam and the mill tail still emerges from a brick culvert, but modification has been extensive and no machinery remains, although an iron shod millstone has been re-used as a step. The present mill occupies the site of a watermill called Ironbridge Mill documented in 1692 and 1739.

Present Use: Part of private residence

Condition: V. Good

ERO SOURCES: (D/DU 234/1,4)

Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

Elmbridge along with Tilty are the only two mills to survive on the upper Chelmer. A mill is recorded in Domesday at Eistanes and presumably Elmbridge, was referred to in the court roll of Little Eyston Manor as Ironbridge Mill, subsequently referred once more a century later when it was sold again. This name is somewhat unusual as the first iron bridge was not built in Essex until 1810. A mill is marked at the present site on Warburtons map of 1726 and on the Chapman & Andre map of 1777. A note of sale records the sale of the mill to Joseph Hawes in 1739, while a sale catalogue of 1919 describes Elmbridge as a 3 storey mill with a breast shot wheel, 2 pairs of stones and an adjoining brick and tile warehouse and store. It was worked by its last miller, John Stokes, until 1933. In 1940 it was converted to residential use at which point its apparatus was removed (Large, 1959)

Field Survey 2007

04/04/08

Elmbridge is a 2½ storey 5 bay timber framed and plastered mill straddling the upper Chelmer. It has a plain tile roof which is hipped to NE and as it incorporates the **lucam**, is gable ended to the SW. A C19 single storey brick built storage range, enlarged in the C20 projects NW from the rear elevation of the mill. The oversailing lucam was plastered to match the walls when the mill was renovated post war. Below the lucam is a blocked taking-in door. Gabled dormer windows have been inserted into the roofline, a simple brick stack added and the entire building re-fenestrated using a variety of timber casement windows of similar joinery. The single storey rear range is roofed using the same plain tiles as the main roof and may have originally housed a steam or oil engine used to provide auxiliary power to the mill. It has also been extensively re-fenestrated. All the milling apparatus was removed when the mill was converted to residential use (pers comm.)

A sluice gate and a weir are present to the NW of the mill. They drain into an overflow pool which in turn empties into the original river course running to the north of the mill. Both the weir and sluice have been rebuilt, probably at the same time the mill passed into residential use. The sluice gate mechanism remains in operation.

Present Use: Private residence

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	C17	Timber	Med
Engine house (attached)	Later C19	Brick	Med
Sluice gate	C20	Brick	Med
Weir	C20	Brick	Low

ARCHAEOLOGICAL POTENTIAL

Following its conversion to residential use in the 1940s it is unlikely that original technology, fixtures, fittings or internal spaces remain. The mill does however occupy an ancient milling site and one which potentially retains important medieval and post medieval archaeological remains.

SITE SIGNIFICANCE

A pleasant but unremarkable former country river mill severely compromised by the extent of its residential conversion and loss of internal technology and waterwheel. This has impacted upon the historic and architectural significance of the mill, although it is still recognisable as a mill and provides a pleasing contribution to the street scene and built character of Little Easton. It survives as one of only two extant watermills along the Upper Chelmer.

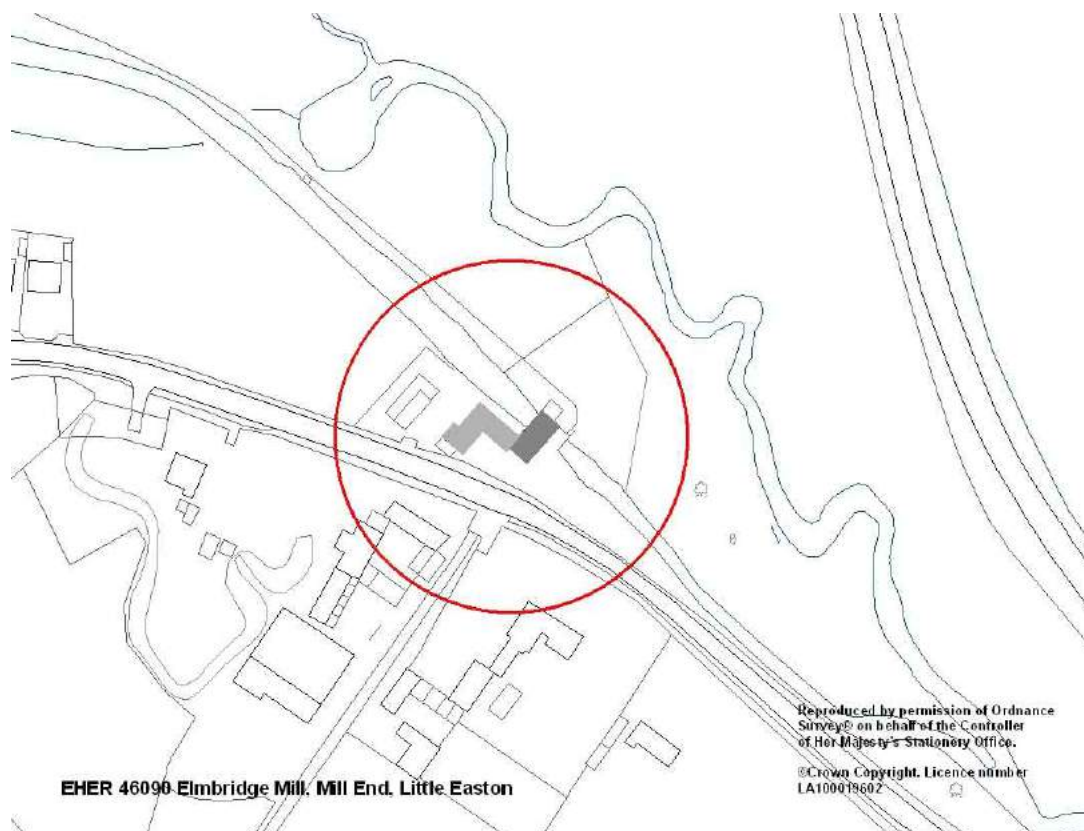
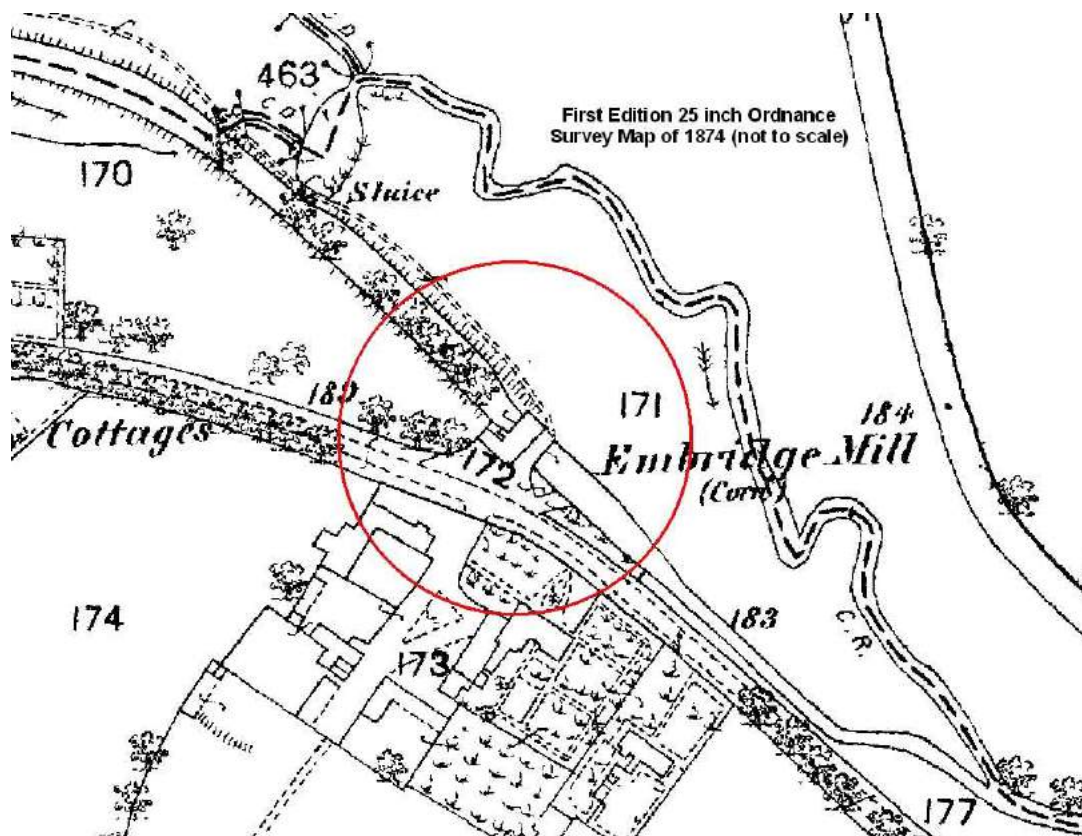
RECOMMENDED ACTION

Although as it stands the mill would not meet the criteria for listing, it should be included on a local list of important buildings and recognised within future Local Development Documents for the area.

MANAGEMENT

An historic building record at a level not exceeding RCHME Level 2 should be recommended if the mill is threatened by major works or demolition.

GRADING *





Elmbridge Mill looking north-east

SITE NAME	Felsted (Abchill) Mill, Mill Road		
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PARISH	Felsted	DISTRICT	Uttlesford
NGR	TL 67104 19618	EHHER	37138
RIVER	Stebbing Brook	EHUID	122638

CURRENT STATUS	Con. Area	No	Listed: Grade II	EBAR	No
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STATUTORY LIST DESCRIPTION	12/01/1976
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Mill, converted into a house during the 1960's. Built 1858. 3 storey and 4 storeys, grey slate roof. Red brick built with gabled, weatherboard hoist loft with straight timber braces. 5 bays with brick pilasters to each. Iron windows of 16 small panes to 1st and 2nd storeys. 5 range to front and 3 range to side elevation. Large metal elliptical top storey window to right and left walls. There is an iron mill wheel and 4 pairs of stones.

JOHN BOOKERS SURVEY	31/08/1973
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A handsome, bold, brick and slate mill erected in 1858 (date on the small chimney stack) on the site of a succession of earlier mills and is a Domesday mill site. It is unusual that such a large mill was built at that date and in that style for a mill reliant solely on water power. The builder is thought to be C. Livermore and the machinery installed by Whitmore of Wickham Market. For many years this mill and Camsix mill (Hartford End) were part of the Cowley Estate, but by 1810 Felsted (Abchill) mill was leased to Robert Dixon and it remained with that family before passing to the Riddleys. The lease of 1899 to C.E. Ridley still refers to Abchill Mill. This was one of the last mills in the county to work by water power and when visited (Large, 1959) it had a 20ft diameter iron wheel, 10ft breast, iron pit wheel, and 4 pairs of stones of which only two were in use, grinding wholemeal flour for T.D Ridley & Son. The mill was converted to domestic use during the 1960s and has an iron balcony on the south side while old millstones remain on the north. The nearby mill house is C18, 2 storey with attics and a basement.

Present Use: Part of private residence

Condition: Good

ERO SOURCES: (D/DCW T2), (D/DCy T 14) (ERO T/Z 33)

SITE BACKGROUND:

A mill is recorded in Domesday at Felstedia and in 1373 a mill at Felsted is recorded as belonging to Leighs Priory. It appears as Abchill Mill on Warburtons map of 1726 (Large, 1959). In about 1775 two brothers Robert and Richard Dixon hired Felsted Mill from Lord Tylney. Another Robert Dixon settled with his family at Felsted Mill by 1816. He was followed in 1848 by William Ridley but the old mill was destroyed by fire in 1855. It was replaced in 1858 by the present 4 storey brick and slate mill. The mill's broad outside waterwheel measured 20ft in diameter and 10ft wide and drove four pairs of French Burr stones and a cleaner through 5 nuts. It was never equipped with steam plant, as T.D. Ridley & Sons preferred instead to build the Townfield Steam Mill in Chelmsford (destroyed in 1969). Felsted Mill (under Mr Mead) continued grinding wholemeal using just two stones up until the 1960s after which it was converted into a house. At that time the big wheel was still in place. Across the road from the mill the mill house (EHER 37139) where Robert Dixon and William Ridley once lived still stands relatively unchanged (Benham, 1976). To the north of the mill house are two associated C17 farm buildings (EHER 37141 & 37140) and adjacent a C19 mill cottage (EHER 37142)

Field Survey 2007

04/04/2007

Large 5 bay 3½ storey red brick and slate mill built in pier and panel using Flemish bond. Gables to the N & S with a lucam projecting from the central bay of the eastern roadside elevation and a single-storey pitched roofed wheel house (now kitchen) partially straddling the Chelmer to the west. The windows throughout the mill have rough brick segmental heads, plain stone sills and in the main retain their original 16 pane cast-iron framed windows. A departure, are the windows of the third floor which are of a similar style and material but have a central 4 pane hopper. These were inserted into the N and S elevations as part of the mills conversion to residential use. Further reworking of the original fenestration includes the enlargement, by lowering of the existing sill, of the two arch headed windows set into the N and S gables and the insertion of new doors with balconettes into existing apertures on the second floor. The barge boards and eaves soffits are modern. The **lucam** is set onto straight braces and is fully weather-boarded with a gabled, slate roof and a blocked sack trap. The original oak halved door and door architrave with ovolo moulding remains in the northern elevation although it now shelters below a modern timber porch. The red brick wheel house, leat and wheel pit still remain intact. The waterwheel mentioned by Booker and in the list description was removed c.10 years ago along with the mill stones (pers. comm.).

Present Use: Private residence**Condition:** Good**SITE COMPONENTS**

Term	Period	Material	Importance (H/M/L)
Water mill	Mid C19	Brick	Med
Mill House	C18	Brick	Med-High
Mill Cottage	C19	/	Med

ARCHAEOLOGICAL POTENTIAL

Extensively converted to residential internal spaces, fixtures and fittings unlikely to survive. Its present condition is at odds with the list description as the water wheel and stones are no longer extant. Occupies an ancient mill site and accordingly retains potential for the survival of important medieval and post-medieval archaeological remains

SITE SIGNIFICANCE

A mid C19 brick built watermill unusual in that at this late date it did not incorporate steam power but relied on water as the sole source of power. Its architecture demonstrates a move away from the more traditional style of the previous century with the use of brick and non-local materials. The removal of the mills internal spatial integrity, technology, fixtures and fittings have impacted upon the historic and architectural significance of the mill, although it still has group value with the adjacent mill house and makes an important contribution to the character of the area and particularly the setting along the Stebbing Brook.

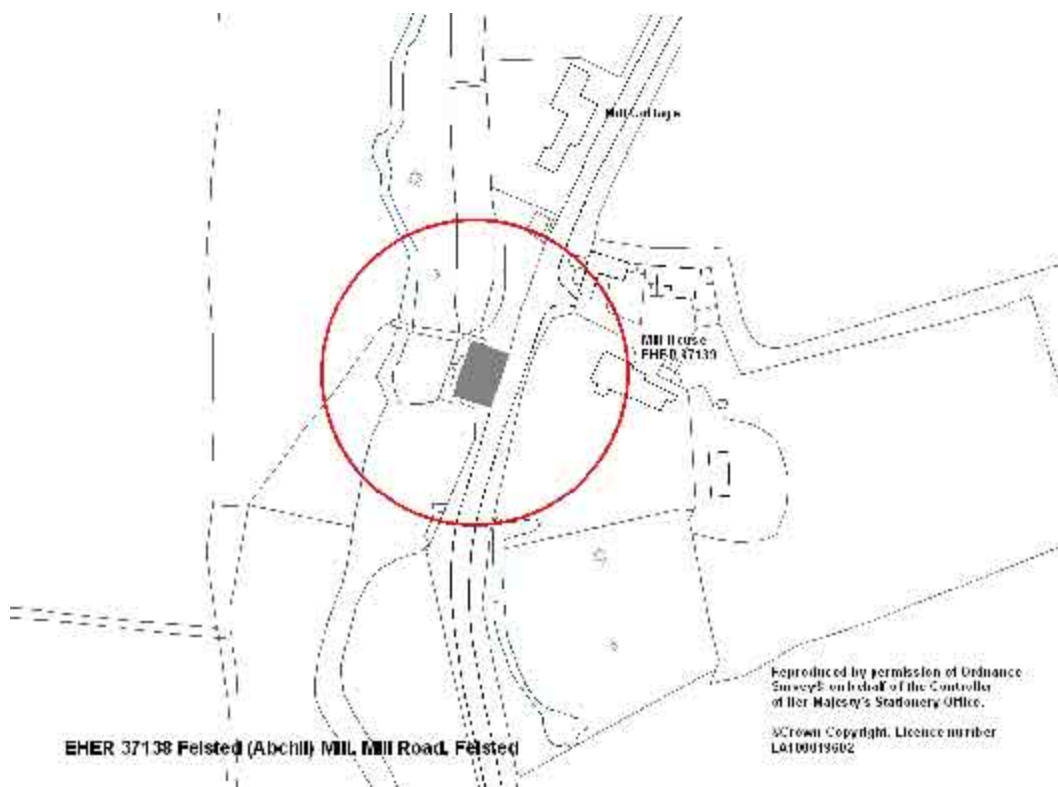
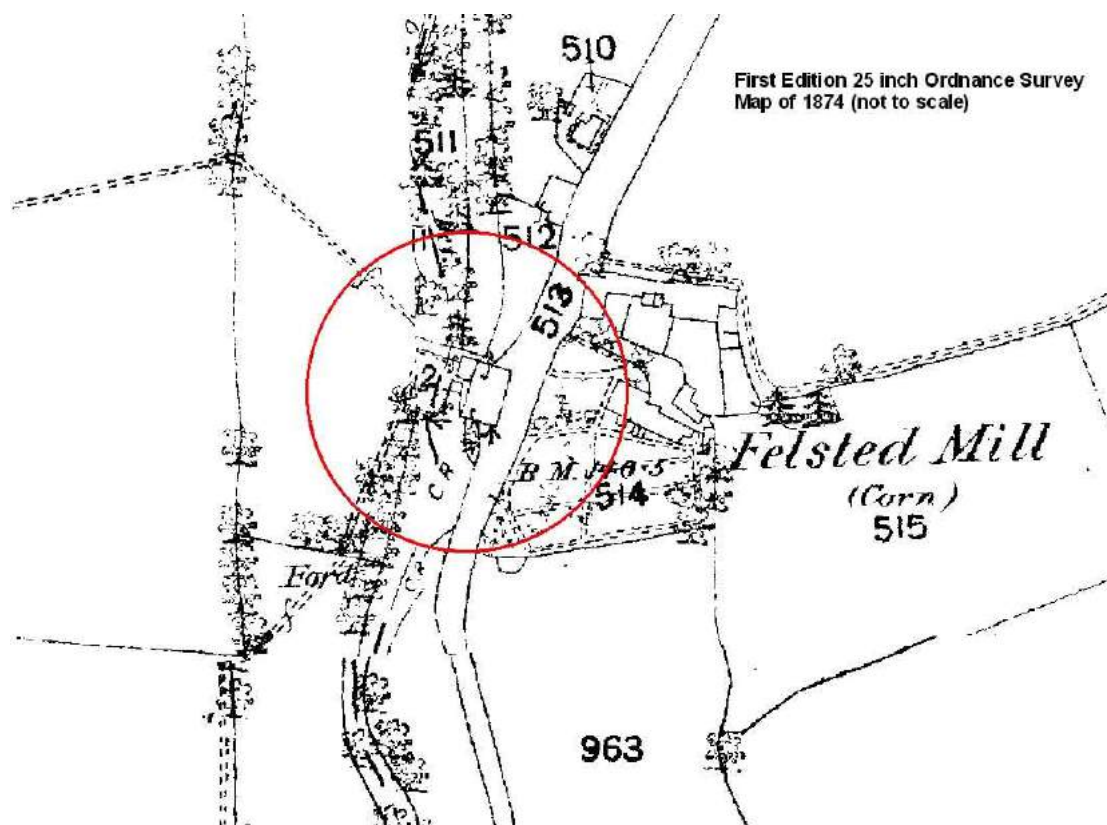
RECOMMENDED ACTION

Maintain the current level of listed designation.

MANAGEMENT

Felsted Mill is in residential use and presently well maintained. An historic building survey at RCHME level 3 is recommended if the watermill becomes threatened by redevelopment, significant alteration or demolition.

GRADING **



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Felsted (Abchill) Mill looking south-south-west

SITE NAME Kings Mill, London Road, Great Chesterford			
PARISH	Great Chesterford	DISTRICT	Uttlesford
NGR	TL 5045 4270	EHHER	15065
RIVER	Cam/Granta	EHUID	NA
CURRENT STATUS	Con. Area Yes	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

07/09/1971

Unusually tall and extensive steam mill near the site of a former watermill. It is basically two joined blocks, one of red brick, the other of grey brick, 4 storeys with flat buttresses forming vertical division between the symmetrical lines of windows. The whole is late Victorian and not dissimilar to the flooring blocks of the maltings at Mistley. A smaller building on the south side was perhaps an engine and boiler house, but the chimney has been removed.

Present Use: Largely disused within farm

Condition: Fair

SITE BACKGROUND:

A later C19, 12 bay, four storey steam (roller) mill built in three main structural phases between 1845-50 (concurrent with the opening of the London to Cambridge Railway) and by 1897. Henry King appears in the census records of 1871 as a miller and farmer in Great Chesterford and in the 1901 census, but does not appear in contemporary editions of Kellys Trade Directory. Henry King may have also worked another mill in the area as the watermill in the nearby village of Littlebury was and still is named Kings Mill.

Field Survey 2007

05/02/07

The earliest phase comprises the central six bays, built in red brick in English bond, characterised by the rough brick segmental arch heads and the retention of its gable parapets which project (as fire walls) above the later roofs to either side. The mill was subsequently extended (probably by Henry King) with the addition of a large 4½ storey yellow brick 3 x 7 bay gable ended return range onto its southern end and an in-line four storey, three bay red brick extension to the north. It is built consistently in pier and panel construction, with external strip pilasters punctuated by tie bars laterally bracing each floor. The smaller upper windows of all three phases have saw tooth decoration but generally little ornamentation is used. Both weatherboarded **lucams** are supported on plain geometric cast-iron brackets and were probably contemporary with the later yellow brick range. The present lucams however may be replicas of the originals. As part of the mills conversion to residential use, the taking doors below both lucams have either been converted to windows or blocked. The windows all have code stone sills and are modern side hung timber casements with glazing bars. Small porches have been added over the doorways. The mill leat to the east and the tail race have both been backfilled.

To south lies a small single storey five bay yellow brick steam engine/ boiler house converted to residential use and to the west a three storey earlier C19 seven bay red brick granary. The latter is strongly built with large projecting pilasters and a slate covered roof. In common with the mill the granary is now residential and as such extensively altered, although the original round headed window apertures remain in the eastern gable end. The listed C18 Mill Cottage (EHER 25384) lies at roadside to the north while a slightly later C19 Mill House (EHER 25382) is adjacent to the north and east. Internal access to neither the mill nor the granary was not available.

Present Use: Residential

Condition: Good

Sources: Census Records 1871 & 1901, Kellys Trade Directory

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam roller mill	Later C19	Brick	Low-med
Engine house	Later C19	Brick	Low- med
Granary (brick)	Mid C19	Brick	Low-med
Mill House	C19	Brick	Med
Mill cottage	C18	/	Med

ARCHAEOLOGICAL POTENTIAL

An internal inspection was not possible but it is very unlikely original spatial configurations, technology, fixtures or fittings survive.

SITE SIGNIFICANCE

The mill remains in a good overall structural condition without significant modern accretions. Much of the original brickwork pointing and mortar survives and where localised repairs/alterations have been made, sympathetic materials such as lime mortar has been used. Kings Mill is one of 27 extant steam mills that survive across Essex and one of five identified in Uttlesford. Although it has been converted into apartments this former industrial flour mill still retains much of its external character and readability. The mill makes a positive contribution to the historic character of the Great Chesterford Conservation Area.

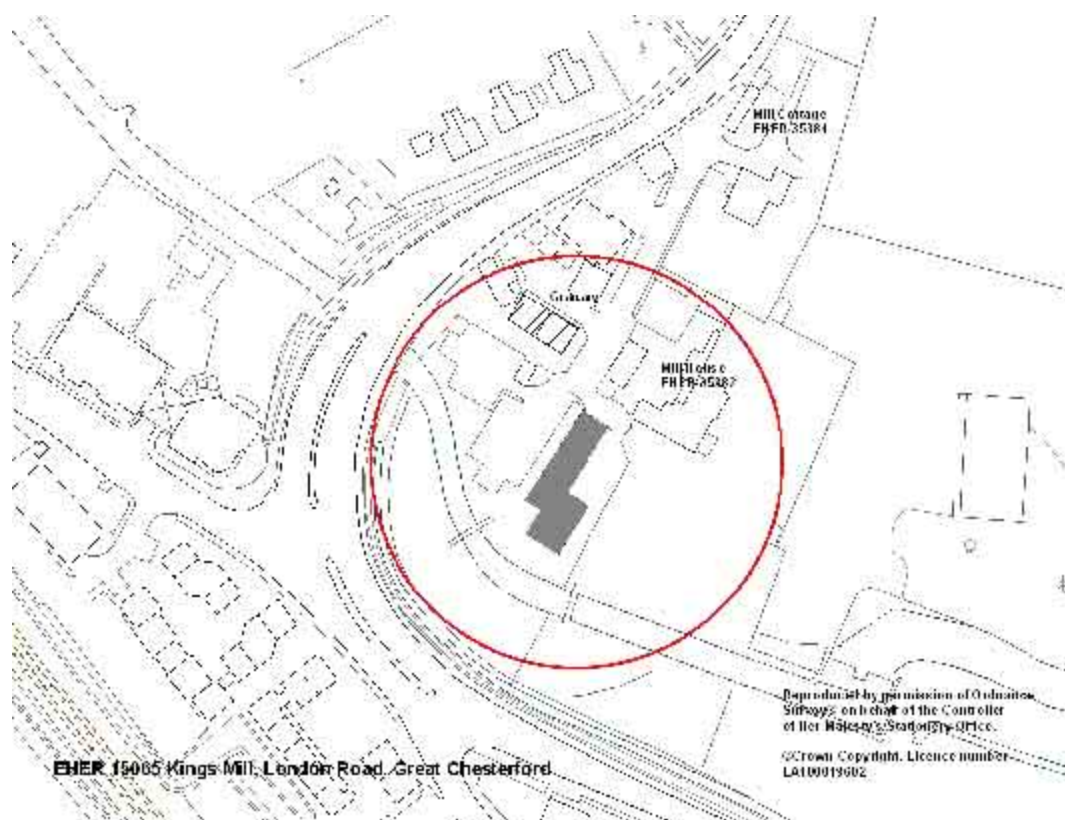
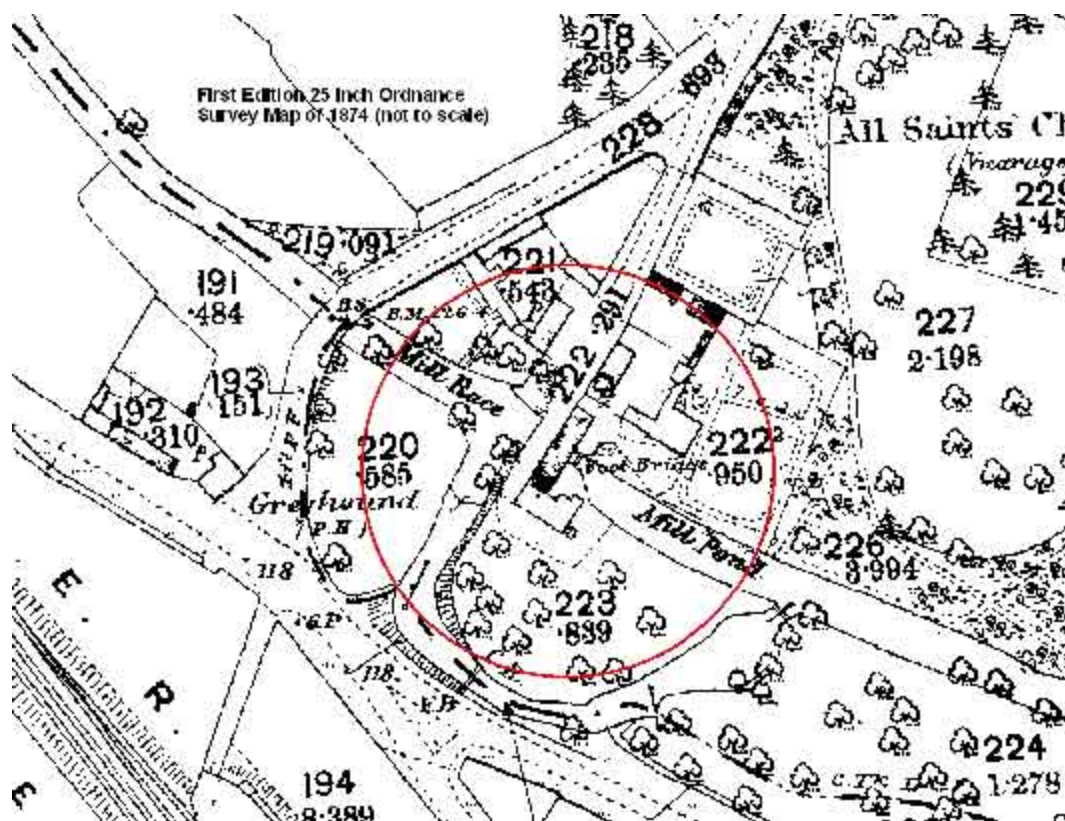
RECOMMENDED ACTION

Although it is debatable whether the mill would meet the criteria for listing, it and the adjacent granary and outbuildings should remain part of the Great Chesterford Conservation Area. They should also be recognised as a group of locally important buildings and accordingly included on a local list and within future Local Development Documents.

MANAGEMENT

The mill continues in residential use and as such is well maintained. If the opportunity presents itself an internal inspection to assess original spatial configuration and survival of C19 technology and/or fittings, is recommended. Alternatively an historic building record at an appropriate level should be recommended if the mill or granary are threatened by significant alteration or demolition.

GRADING *





Kings Steam Mill, Great Chesterford, looking north-east

SITE NAME Hallingbury Mill, Old Mill Lane, Gaston Green			
PARISH	Little Hallingbury	DISTRICT	Uttlesford
NGR	TL 4960 1693	HER	3651
RIVER	Stort (Navigation)	EHUID	120539
CURRENT STATUS	Con. Area No	Listed Grade II*	EBAR No

STATUTORY LIST DESCRIPTION

13/06/1983

A fully restored watermill built 1874 with a rebuilt granary standing on the site of the mill demolished in 1885. 3 storeys and loft. The ground floor is brick built with arched window and door openings. Stone floor, Bin floor and Loft are timber framed and clad with vertical weatherboarding the exception of right return wall which is hung with grey slate tiles. Said to be the only known surviving vertical weatherboarded building of its kind in the South East. Front and Rear lucams with ornamental iron brackets. Red pan tile roofs to Mill and rebuilt granary. 4 paned windows throughout the building. All the main timber structure is original and the crossbeams tenon into the main uprights. Main beams 12" x 9" x 22' long are tied in with smith made iron ties and dogs. Much of the original machinery has been retained including Water Wheel, 7' breadth 16' diameter with 48 floats of low breast type, also Pit Wheel, Trough, Spier Wheel, Crown Wheel and Stone nuts. 4 pair of Stone wheels were originally installed, only one pair now remains complete. The mill can produce small quantities of wholemeal flour since its restoration. There are 2 old machines mounted for demonstration in the building, one is a warehouse separator and the other a brush machine.

JOHN BOOKERS SURVEY

13/11/1973

4 storey mill, weatherboarded on a brick base. Probably Victorian. There are lucams on both sides and an unusual patterning of weatherboarding i.e. vertical on the main structure and horizontal on the N and S sides of the adjoining stores (one short and 2 storey the other long and single storey) and in line with the pitch of the roof, in inverted V pattern, on the west side of the taller store. There are brick additions to the rear of the mill. Historically the importance of this mill is that it is one of the two sites in Essex where silk throwing began in c.1720 and Holman in c.1820 noted an engine there 'employed in the winding of silk for the company of dealers in silk that got a patent first'. The silk throwing was short lived but the mill is reported to have been working (flour) as late as 1948.

Present Use: Part of Lea & Stort Hire Cruisers

Condition: Quite Good

ERO SOURCES: (T/P 195/16) (B2742)

SITE BACKGROUND:

Parish records dating from 1641 refer to 'Tednam mill', a grist mill on the site of the present mill, leased to Robert Merry, Miller. In 1693 Tednam Mill was demolished and replaced by a silk mill (c.1720) designed for the winding of raw silks, but by 1778 it was converted to a corn mill. The corn mill worked up until the later C19 when it was demolished and replaced by the present building in 1874 (Essex Journal, 1974). The new mill continued to mill using traditional methods although the stones were augmented by roller plant manufactured by Turners of Ipswich. For a short period a small steam plant was used to supplement the wheel but during the 1940s a 30 HP Petter semi-diesel engine was introduced by the last miller Sam Ellis. The mill continued producing flour up until 1952, but as business faltered, to the extent that only 8-10 sacks were milled a day, it closed and remained so for the next 15 years.

Following its closure and between 1952 and 1967 most of the modern machinery including spouts, diesel engine, elevators and roller mills were progressively scrapped. In the late 1960s Hallingbury Mill was purchased by John Wilkinson who by 1968 completed an extensive restoration of the redundant mill buildings and in particular the conservation of the milling apparatus. Following his death permission was granted (1999) for its reuse as guest house accommodation and it remains so to the present day. Much of the milling technology conserved by Wilkinson was retained and it is reported that 'many original features of the mill are kept in full working order'.

Field Survey 2007

03/02/2007

Four bay 3½ storey part brick and timber framed weatherboarded mill with a two storey weatherboarded store and single storey granary attached to the west. Gabled lucams on decorative iron brackets project from the northern and southern roof pitches of the gable ended roof. The pan tile roof noted in the list description has been replaced with modern cement tiles. The ground floor storey is built in yellow stock brick in English bond and incorporates a stone date plaque with the build date of 1874. The ground floor windows all have brick arched heads and appear to be the same or replicas of those mentioned in the listing. Taking-in doors (now blocked) are located on the first and second floor of the easternmost bay. The mill has vertical boarding covering the western gable wall and slate hanging cladding the eastern equivalent. Modern lean-to extensions that post-date the closure of the mill have been added to the rear elevation along with a fire escape. Projecting from the western end is a single storey granary (c.1885) with a pan tile gabled roof set onto brick built stalls (piers). It has modern windows and has been recently extended by a single bay to the west (riverside).

The sluice gate and the low shot iron waterwheel remain in situ. The 25 HP waterwheel has 48 floats, is 7ft wide, 16ft in diameter and rotates counter-clockwise on an octagonal section cast-iron shaft. The **pit wheel** (mortise type) is 14ft in diameter with 160 hornbeam cogs. The cast-iron **wallower** drives a cast-iron **great spur wheel**. The stone nuts have wooden cogs, and are raised by **tentering gears** and **jacks**, all mounted within a heavy frame or **hursting**. This part of the stone drive remains at ground floor and within what is now the bar area of the hotel. The extent to which other technological apparatus survives within the upper floors of the mill was not determined, However a report in the Essex Journal gives an idea as to the degree of survival in 1974. It States '*Four pairs of stones were originally installed but only one pair remain complete. The working stones are beneath a tun which still retains a full set of furniture. There are no screens left and there are two old type of machines, one is a warehouse separator and the other a brush machine. The bin floor originally held c.90 tons of grain (usually a mix of English and Canadian) but the bins were removed due to rot. The grain hoist mechanism is on this floor as is the hoist gear in the lucomb*'. All the timber structure is original and comprises 12in x 9in x 22ft floor beams tied into the storey posts using smith made iron ties and dogs' (Essex Journal, 1974).

A dry dock with a boat lifting crane has been built into the mill leat immediately north of the mill while further to the north is an overflow sluice once used to regulate water to the mill race.

Present Use: Hotel/Restaurant

Condition: Good

Sources: Essex Journal Vol. IX, 1974

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill (silk and corn)	Later C19	brick/timber	High
Granary	C19	timber	Med
Sluice	/	/	Low

ARCHAEOLOGICAL POTENTIAL

Milling has taken place on this site since the early post-medieval period, although the present mill is a little over 130 years old. Despite its latter use as a hotel/restaurant many of the mills fixtures, fittings and the heavy mill gearing, lovingly restored by John Wilkinson, are intact and (reportedly) kept in working order. The extent of survival across the upper floors, now used as hotel accommodation, is unclear.

SITE SIGNIFICANCE

A large and picturesque four pair corn mill that briefly worked as a silk throwing mill. It survives as one of a small number of watermills in Essex that still retain a significant proportion of their original corn milling technology and the potential to operate once more under water power. As such Hallingbury mill is one of the most historically and technologically important watermills in Essex. It is also the only known example of a (historically) vertically weatherboarded building in the SE of England.

RECOMMENDED ACTION

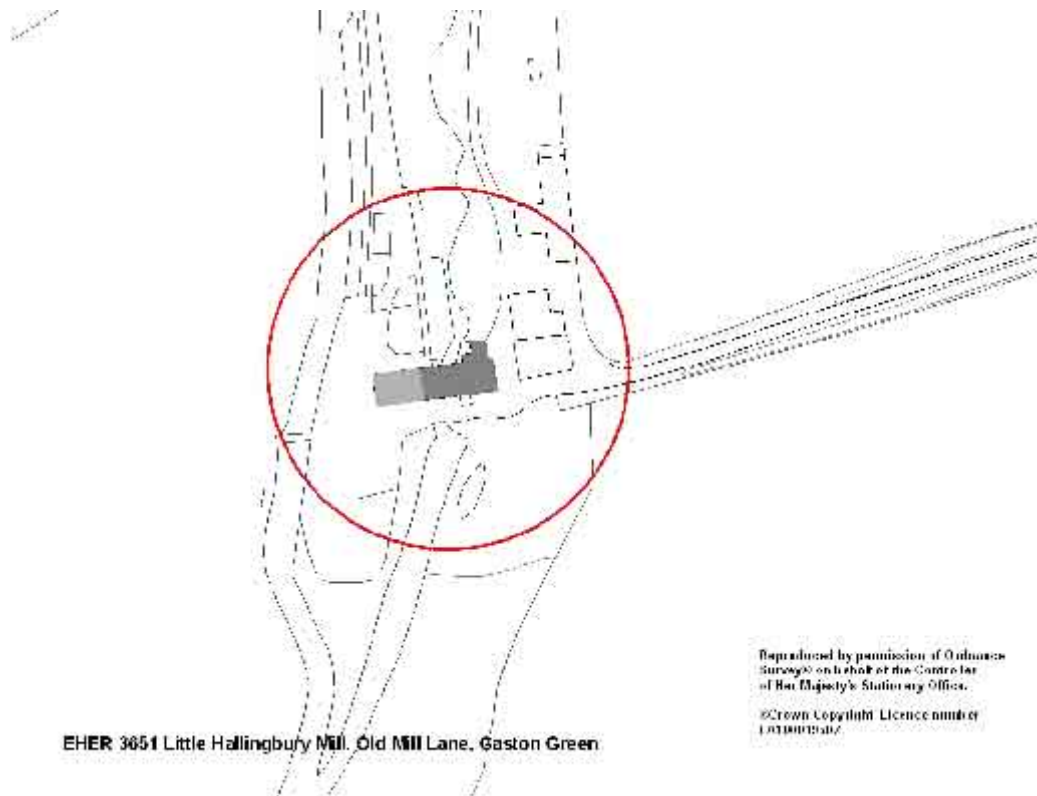
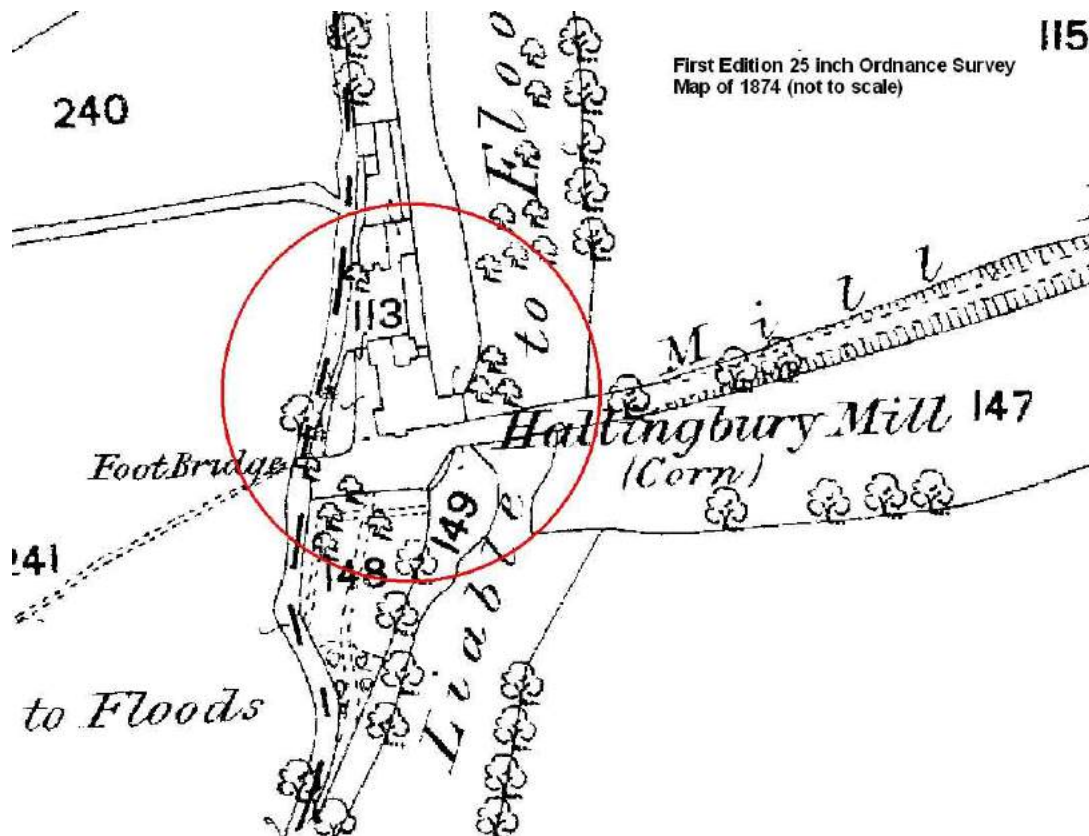
Maintain listing at Grade II*

MANAGEMENT

Prior to any significant future construction work, internal reconfiguration or demolition an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features and technologies should be carried out. Based on the results of and following the impact assessment a detailed study of the building and its apparatus (at RCHME level 3 or 4) should form part of any future consent.

GRADING * /******

115



EH01 3651 Little Hallingbury Mill, Old Mill Lane, Gaston Green

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Little Hallingbury Mill looking north-east

SITE NAME	Hartford End (Camsix) Mill, Hartford End		
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PARISH	Felsted	DISTRICT	Uttlesford
NGR	TL 68538 17314	EHHER	37124
RIVER	Chelmer	EHUID	122624

CURRENT STATUS	Con. Area	No	Listed	Grade	II*	EBAR: 2006 (bridge only)
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STATUTORY LIST DESCRIPTION	06/08/1984
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Watermill on River Chelmer. Late C18 2 storeys and attic with a flat headed dormer and a gabled, weatherboarded lucam, with weathervane. Red plain tiled gambrel roof, hipped to right, and wing to rear. Red brick built, with some weatherboarding to left side. 7 window range first floor, 5 window range ground floor, various small paned casements and sashes, some of iron. There is a hoist beam above a board door off centre on the first floor, also 3 circular iron tie bar plates. A bowed, round headed window is above a "stable" door. The bays to the extreme right are used as a dwelling with a door recessed in a round headed opening. Exterior sluice by Whitmore & Binyan, Wickham Market 1881. The mill -shares a combined frontage with the Mill House and Bridge, both listed separately, and forms a very picturesque group in pleasant surroundings.

JOHN BOOKERS SURVEY	31/08/1970
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One of the earlier surviving watermills, not weatherboarded but brick and tiled. Bold lucam on east side and lean-to shed to south. To the north of the mill in the same frontage is an ancillary building, flanked by the C19 millhouse. The ancillary building is believed to have C16 features within (Large, 1959). Very little surviving machinery – perhaps only the vertical wooden shaft. The mill is dated to 1780 in the ministry list. In 1755 it was with Abchill (Felsted) Mill part of the Cowley Estates but it was not involved in the settlement of 1810. During the C19 it was occupied by the Ridley family. In 1876 it was sold together with Camsix Farm: the name Camsix Mill does not appear after 1755 (Reaney, 1935). The sale catalogue of 1876 mentions a fall of 10ft 8ins onto an iron wheel of c.25ft diameter, driving 4 pairs of stones. It appears to have ceased work after 1929. A reference in 1946 reads 'though the old machinery was disused much of it lay in position'.

Present Use: Disused: part of private residence

Condition: Good

ERO SOURCES: (D/DCW T2) (ERO T/Z 33/1), Place Names of Essex , Reaney, P. (1935), E.R. Vol. LV (1946)

SITE BACKGROUND:

The mill occupied by William Ridley in 1839 was bought for £3,125 by Thomas Dixon Ridley in 1876 from Henry Richard Charles and his son William Henry Wellesey. At this point it had a fall of 10ft 8in and ran four pairs of stones driven by a 25ft wheel and storage for 500 quarters. It worked until 1929 when the wheel was sold and the machinery was stripped out, leaving only the vertical wooden shaft. The up river sluice gear by Whitmore and Binyon dated 1881, has some attractive iron ornaments and a separate gate to feed the iron grill eel trap which remains (Benham, H). The mill was converted into a house in the 1970s for Nicholas Ridley, then the owner of Ridley & Sons Hartford End Brewery, conveniently sited at a short distance to the SE of the mill. The Grade II* mill (EHER 37124) forms an important group of historic buildings with the Grade II mill house (EHER 37125) and the Grade II mill bridge (EHER 37126). In a wider context these buildings have group value with the

undesigned but currently threatened mid C19 industrial buildings of the former Hartford End Brewery.

Field Survey 2007

04/04/07

Thought to date from about 1780 Camsix Mill is an impressive c.10 bay, 2½ storey brick built in-line mill and mill house with a plain tiled Mansard roof, hipped to the south and gabled (probably re-profiled when the present **lucam** was added) to the north. The mill straddles the River Chelmer which is diverted toward the wheel pit sited in the southern bays. The main sluice to the overflow pool and **leat** lies to the west of the mill and on the southern bank. The mill house abuts the mill to the north. The windows are a mixture of timber built multi-paned casements and sashes which appear to have changed little since the listing re-survey of 1984. The majority have brick segmental arched heads although there are also larger flat headed windows and an ornamental arched headed window of late C18-earlier C19 date. The flat-headed dormer window in the northern bays is C20. The façade is built in red brick in Flemish bond and has a brick eaves band, pierced in three places by tie bars and plates. A **sack hoist** beam projects from the roofline just above the eaves and directly over an off-centre taking-in door at first floor. A gabled dormer, now removed, once lay between the hoist and the lucam. The large weather-boarded lucam is supported on curved arch braces and resides within the roof structure, above the eaves at the southern end of the mill. The roofline of the southern three to four bays, into which the lucam sits off-centre, was elevated above that of the adjoining roofline to the north. This suggests that the grain bins, as is common in many Mansard roofed mills, were incorporated into roof structure and above the stones on the floor below. The **upright shaft**, all gearing and stones were removed during the 1930-40s and now apart from the northernmost bays which were converted to residential use, the majority of the mill lies unused albeit for general household storage (pers comm.).

The mill bridge in common with the mill is built in Flemish bond and is braced using a number of tie bars and plates. The northern round headed arch of the mill tail race appears to remain in fair condition although the larger southern arch is noticeably beginning to fail. The bridge was added to the Essex Historic Buildings at Risk Register in 2006 but to date no repairs have been made.

Present Use: Part residential part storage

Condition: Good (mill and mill house)

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill	Later C18	brick	High
Mill house (attached)	Later C18	Brick	High
Bridge	Later C18	Brick	Med-High
Sluice	Later C19	Iron/timber	Med-High

ARCHAEOLOGICAL POTENTIAL

As the mill is presently used in a secondary storage capacity and had not been converted to residential/commercial use, survival of original internal spaces, fixtures and fittings is more likely. All the milling technology including the wheel and upright shaft mentioned by Booker in the 1970s has since been removed but the site does still retain a very rare and important sluice by Whitmore & Binyan of Wickham Market dated 1881.

SITE SIGNIFICANCE

A later C18 mill which unusually for the period was brick built and not timber-framed. It shares many architectural similarities with Pentlow Mill another brick mill with an in-

line mill house and reportedly (see Large, 1959) incorporates C16 features within its ancillary (central) range. If this is the case then it survives as one of only a handful of mills retaining fabric predating the C17. Together the Grade II* mill, Grade II mill house and Grade II mill bridge form an important group of historic buildings. In a wider context these buildings also share group value with the undesignated and vulnerable mid C19 former Hartford End Brewery. Of particular note is the sluice by Whitmore & Binyan, which survives as a very rare example with few parallels in Essex. It may come under threat from a programme of modernisation of sluices currently (2008) underway by the Environment Agency.

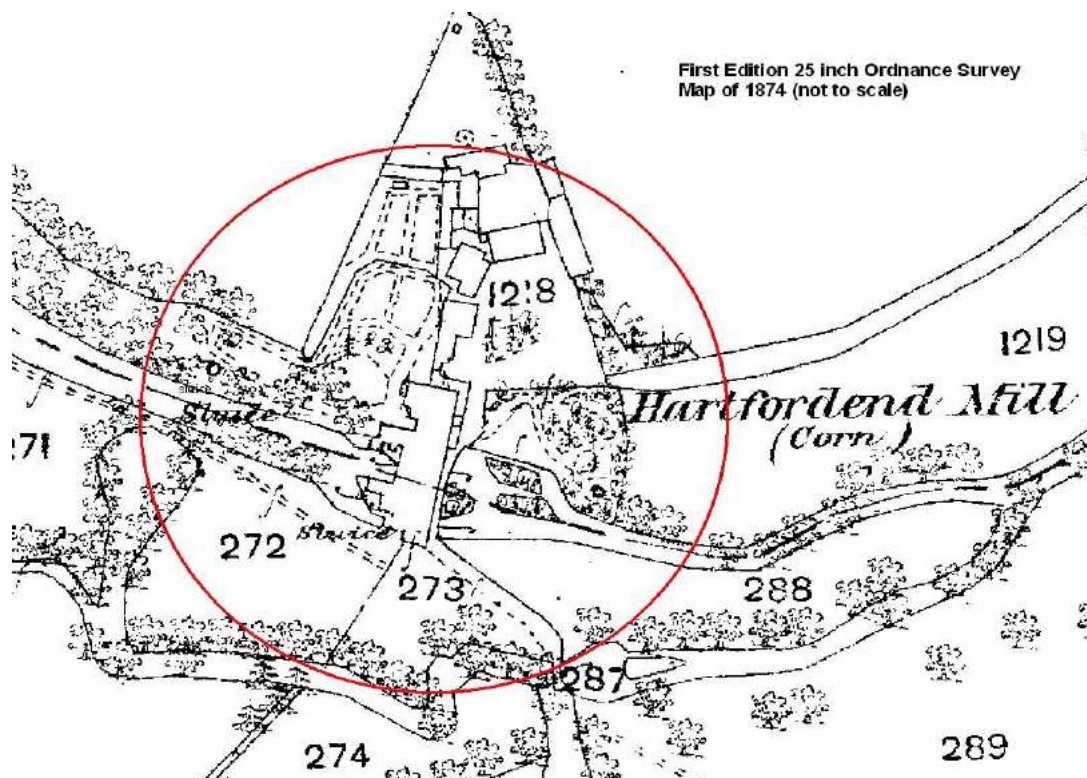
RECOMMENDED ACTION

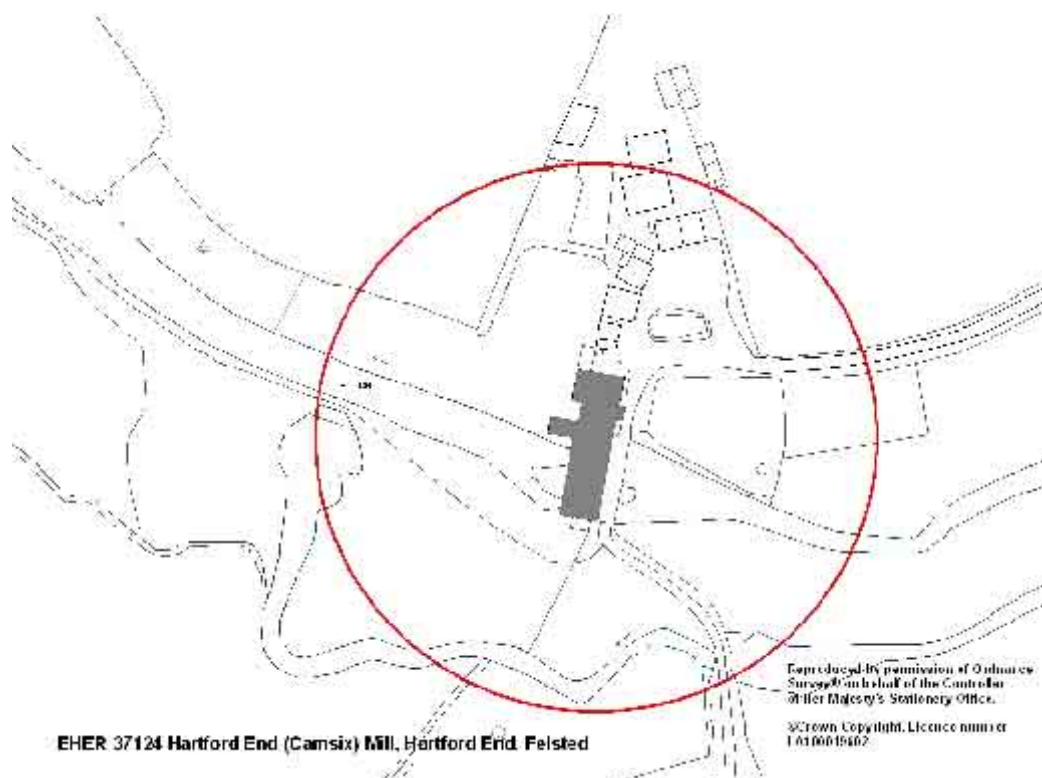
Despite the removal of its technologies this important and picturesque group of mill buildings should retain their current Grade II* listing. The sluice by Whitmore & Binyan should remain as a curtilage listed structure, particularly given the present threat it is under from modernisation. As no repairs have been carried out on the mill bridge, it should remain on the Essex Buildings at Risk Register and its condition closely monitored.

MANAGEMENT

Hartford End Mill is partly in residential use and as a whole well maintained. An historic building survey at RCHME level 3 should be recommended if the disused mill or its associated ancillary buildings become threatened by significant alteration, conversion or demolition.

GRADING ***





Hartford End Mill and Mill House looking south-west

SITE NAME Hatfield Heath Corn Mill, Stortford Road			
PARISH	Hatfield Heath	DISTRICT	Uttlesford
NGR	TL 5186 1524	EH	15105
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade NL	EBAR No

JOHN BOOKERS SURVEY

03/07/1970

A wholly functional building presenting evidence of 3 floors to the road-side, but with probably another and lower floor on the opposite side which is built on sloping ground. The structure is brick, but the top floor and lucam are weatherboarded. The lucam is central, facing the road and situated above the doorway, which is above ground level and approached from a double flight of steps which end in a platform. The mill has HATFIELD HEATH MILLS painted along the roadside face. The structure appears to be late Victorian which raises difficulties as the site is marked as a brewery in 1880 and 1897 OS maps. It was, however, a corn mill by 1923 and apparently also in 1950.

Present Use: Disused

Condition: Fair

SITE BACKGROUND:

Hatfield Heath Brewery began in the Sullins family – Peter Sullins was a maltster (1839) and his son Henry inherited this business and became a brewer. Another Peter Sullins took over the site and then sold it to Capt. C.A.S. Warde in 1892 and brewing ceased in 1900. By 1902 it was converted into Edwards Flour Mill but was derelict soon after the Second World War. Millstones by Hughes and by Clarke & Dunham, London were removed and since the 1970s it has been used as a warehouse or general storage and latterly as office accommodation. In 2006-7 plans were approved to convert the building into apartments.

Field Survey 2007

05/02/07

A four storey, five bay mill building with a gable ended corrugated iron clad roof and a pitched roof lucam to the roadside. The lower three floors, including the basement, are brick built while the upper storey is timber-framed and weatherboarded. An external chimney stack rises up the NW gable elevation from second floor level. Original window apertures have segmental arch heads and all fenestration is modern. The ground floor is reached by a double flight of brick steps while access to the basement is via a large modern opening inserted into the NW gable wall. Adjacent is the brewer's house (now a residential care home) bearing a plaque with Peter Sullins' initials and the year 1863.

Each floor is carried by large Baltic pine binding joists (NE-SW) which are in turn supported by cast-iron columns with plain capitals. In the NE corner of the mill is a large brick-built structure presumably a bread oven or kiln which rises through all floors of the building. Built in red brick in English bond the brick oven has an opening in its NW wall on each floor, apart from the upper floor which had been demolished. No internal features or fittings survive within the structure and this is the case for much of the building, although the original winding mechanism for the external hoist (via the lucam), hursting, pulleys and access gantry remain within the central bays of the mill roof structure. The roof structure comprises large soft wood king post trusses with raking struts and back purlins. The king post also carries the ridge plank and common rafters. Softwood match-boarding or sarking overlies the rafters. At the time

of the survey the mill was in the early stages of building works associated with its conversion into apartments. The hoist mechanism and most of the surviving floors are to be retained within the scheme (pers. comm.).

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam mill (corn)	Later C19	Brick	Low-med
Mill/brewers house	Mid C19	Brick	Low-med

ARCHAEOLOGICAL POTENTIAL

The buildings constant reuse for various industrial and business concerns has removed much of its historic spatial and technological integrity. Although the partial survival of the brick kiln oven structure is unusual.

SITE SIGNIFICANCE

One of 27 extant steam mills recorded during the survey and one of only five recorded in Uttlesford District.

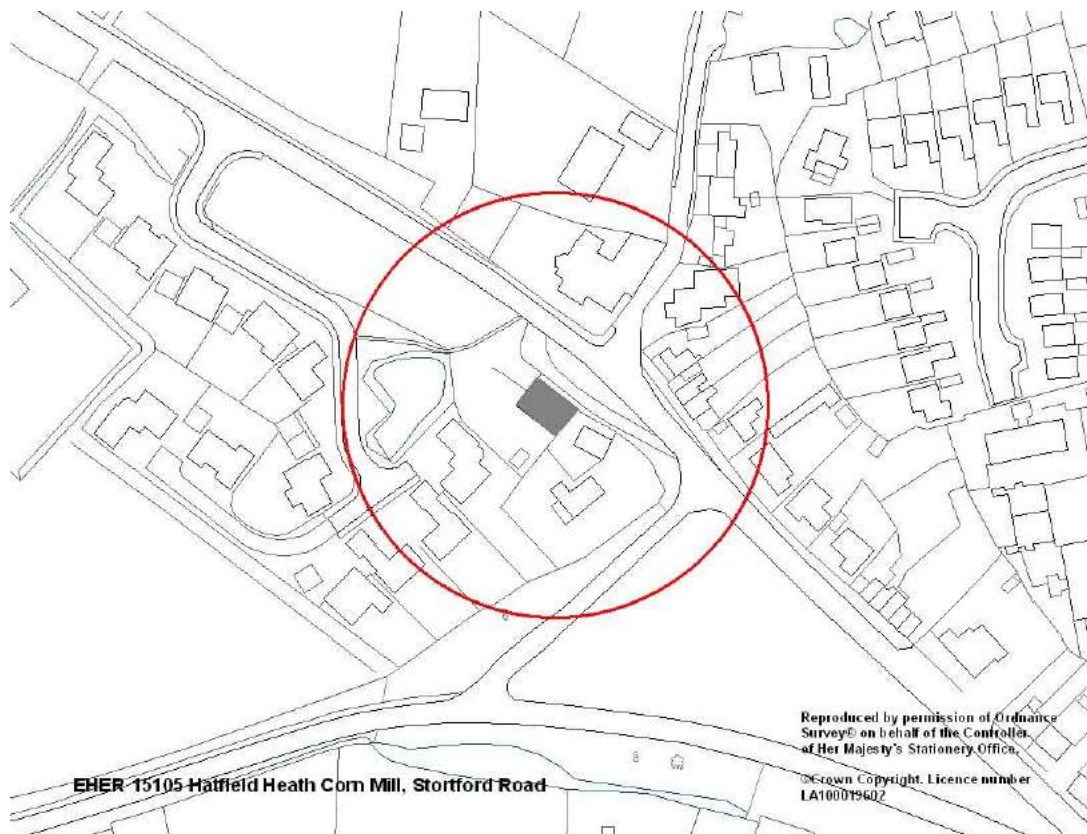
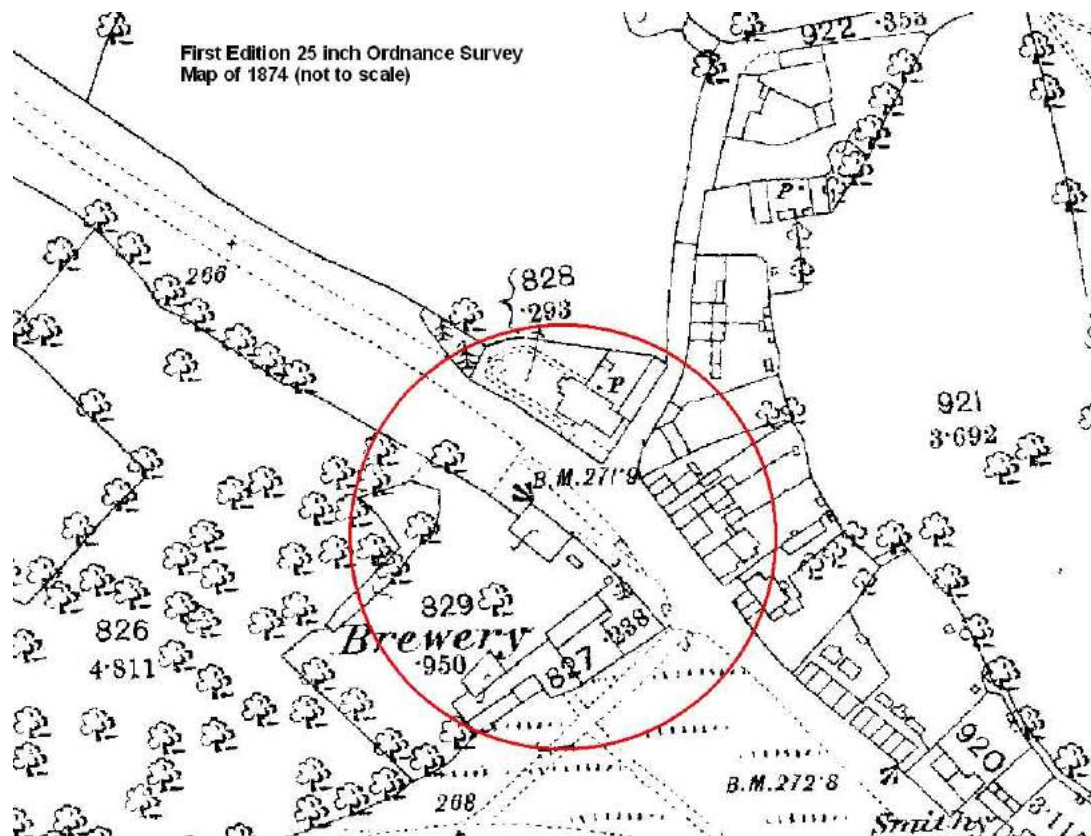
RECOMMENDED ACTION

Hatfield Heath Steam Mill does not merit statutory protection, but does warrant addition to a list of locally important buildings and recognition within future Local Development Documents.

MANAGEMENT

As Hatfield Heath Mill is currently in the process of conversion to apartments its future looks assured. To assess the level of survival and extent of conversion works a low level historic building survey is recommended if further building works or demolition are proposed.

GRADING */**





Hatfield Heath Steam Mill looking south-east

SITE NAME	Littlebury (Kings) Mill, Mill Lane		
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PARISH	Littlebury	DISTRICT	Uttlesford
NGR	TL 51848 39562	HER	35636
RIVER	Cam/Granta	EHUID	406779

CURRENT STATUS	Con. Area	Yes	Listed Grade	II	EBAR	No
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STATUTORY LIST DESCRIPTION	21/02/1967
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C18 timber-framed and weather-boarded mill. Two storeys and attics. The roof is Mansard and is now covered with corrugated iron.

JOHN BOOKERS SURVEY	07/08/1971
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A rambling and picturesque site. The mill is C18, weatherboarded, tile Mansard roofs, 4 storeys. The house is also C18 of various storeys, the roofs tiled and hipped N and S. The front block has a three window range of double hung sashes with glazing bars, one large ground floor bow window, 6 panel door with semi-elliptical fan-light and flat hood. The mill itself is rather spoilt by the corrugated iron roof and almost black weatherboarding. The former steam plant and chimney have been almost entirely demolished.

Present Use: Disused
Condition: Becoming derelict
ERO SOURCES: (D/DBY T 2/9), (D/DBY A 106-181),

SITE BACKGROUND:
Occupying the site of one of four mills mentioned in the Domesday Book, the present Kings Mill and Mill House are thought to date to around 1777-1780. The mill was once part of the Audley End Estate and it was reportedly renewed under Sir John Griffin Griffin who pulled down the old mills at Littlebury and Audley End and by April 1777 paid for the surveying of a new watermill and house in Littlebury. The mill and mill house was constructed by local tradesman John Glynn at a cost of £630 and £366 15s respectively. In addition to the mill a brew house, stables and barn were also built. The mill remained solely water powered until around 1859 when a steam engine was introduced by William Tanner. It finally ceased milling around c.1924 and was let as a guest house during the war and between 1943-71 was the home of Lady Braybrooke. In 1977 the mill and house was sold by the Audley End Estate and it has since remained in private hands (Sanders & Williamson, Ed, 2005). Place name evidence suggests that during the later C19 the watermill at Littlebury may have been worked by Henry King, a local miller who operated two mills in the locality, the other a large steam mill also named Kings Mill in Great Chesterford

Field Survey 2007	19/02/07
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The site comprises a large 3½ storey weatherboarded timber-framed mill to the east of and abutting a three storey mill house with a double pile hipped Mansard roof. Straddling the river off centre and about its western bays the mill has a Mansard roof with hipped ends and modern tiles. A three storey earlier C19, part weatherboarded, gable ended range with a tiled roof projects north from the eastern bays of the mill while a small 1½ storey building sits directly over the double brick-arch tail race. A low brick and flint lean-to building wraps around its NE angle.

Reports that 'the waterwheel had been removed but still retains elements of machinery, framing and six pairs of French millstones' was confirmed during the survey (with the kind permission of the present owner). This brief visit revealed the

extent to which milling technology, fixtures and fittings survived and provided a basic understanding of how the mill developed both structurally and technologically.

The mill is built roughly E-W and is laid out over four relatively equal bays although the easternmost bay is both slightly larger and structurally at odds to the other bays by incorporating two additional bridging joists. A structural change is also present in the two eastern bays of the south wall and one bay of the north wall, which have both been rebuilt in brick (laid in English bond) on both ground and 1st floor. The rebuilding is most likely due to the modernisation and fireproofing of the mill following the addition, around 1860, of a steam boiler and engine house onto the southern bays. A stub of canted brick wall projecting out from the southern wall is all that survives of the former engine house. The bulk of the mill structure is built using primary braced timber framing with heavy softwood binding joists, carried on carved knees, supporting the floors.

The ground (or Meal Floor) comprises the main water wheel pit and sluice and an eastern and a western **cog pit**. The main **wheel pit** is an entire bay wide and brick built with a pair of brick arches at the tail and a fully operational **sluice** gate at the head. A broken timber axle shaft of the water wheel still remains in situ and reportedly once held two waterwheels, neither of which survive, although a small iron auxiliary wheel, possibly once powering a generator, is still present within the wheel pit. To the east of the wheel pit is a brick lined cogpit and the remains of the **hursting** which once carried the **upright shaft** and **great spur wheel** driving four stones. One iron **stone nut** with its **tentering gear** most of the hursting, some meal chutes and the enclosing partitioning still remain. To the west of the wheel pit and driven from the same shaft is a smaller cog pit, which drove another set of stones situated in the westernmost bay. A stone nut and part of the hursting is still present. The western cog pit is timber lined and it is thought that it may be an earlier wheel pit fed by a now backfilled head race. It is possible therefore that when the present wheel pit was built to the east, the watercourse was slightly realigned and the older wheel pit, blocked off and reused as a cog pit driving the western stones.

The first (or stone floor) comprises six sets of **underdriven** mill stones situated in two groups, one of four stones (eastern) and one of two stones (western). None of the millstone furniture survives although in all but one case both the runner and bed stone are present. All are French Burr stones manufactured by Hughes and Dover, London. Sack traps lie central to the east and western bays while the western of the central bays has partitioning for sack storage. The northern projection which oversails the present kitchen at ground floor is also primary braced and carries the floor above using a large softwood bridging joist, supported to the north by a brick stack and to the south by the wall plate of the earlier mill. A cast-iron bearing box situated within the southern part brick wall and positioned in line with the centre of the stones, confirms the point of entry for the steam and later oil powered drive. This drove one or more of the stones independent of the waterwheel and powered auxiliary machinery.

Apart from the western bay and the northern projection the second (or bin) floor comprises a complex of grain bins supplying the stone floor below. Two **sack hoists** with pulleys and **bollards** remain in the western and eastern bays and a series of small pulleys used to remotely operate the sack hoists intermittently survive bolted to the roof structure. A raised axial gantry within the loft space allowed for easy loading and access to the grain bins flanking the walkway and to the lucam which was formerly located within the southern roof pitch at the western end. The lucam was removed from its original position between 1924 and 1945. The roof structure displays two distinct phases of construction. The earliest C18 roof comprises the

easternmost two bays which are built using fairly heavy scantling timber with joggled butt purlins. The remainder of the main roof is a queen strut construction built using machine sawn softwood timber with side purlins, bolted ties and collars. The queen strut roof is obviously not original and may date to a reworking or renovation of the mill around mid to the later C19. This work coincides with the repeal of the Corn Laws in 1848 and the subsequent 'Golden Age' of arable farming which led to increased investment in milling and the renovation and modernisation of many mills. It may be suggested that these works were carried out in 1860s by W. Tanner. Fixtures and fittings of note include small ledges for candlesticks, the rounding off and flaring out of the internal plaster to prevent the build up of flour dust within the wall framing and the survival of various tools including two different types of sack scales.

Excess volumes of water to the mill are controlled by a dog tooth weir (C20) sited just to the south of the mill race. This drains into a large overflow pond to the east which in turn rejoins the river Cam on the northern side of the mill and before the road crossing.

Although the mill building at Littlebury Kings Mill is presently unused apart for general storage, it survives in good structural order and is well maintained. The present owners have repaired areas of the head race, sluice and hursting and have cleared building debris from both cog pits. To date there have been no significant structural additions made to the mill. The mill house retains numerous original C18 windows and is also well maintained.

Present Use: Unoccupied but part of a private residence.

Condition: Good order

Sources: Littlebury, A Parish History (Sanders & Williamson, Ed, 2005).

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill (corn)	Later C18	Timber	High
Millhouse	Later C18	Brick/timber	High
Outbuildings	C19	Brick	Low

ARCHAEOLOGICAL POTENTIAL

As milling has taken place on or near to this ancient site since Domesday, it retains significant potential for the survival of early medieval to post-medieval archaeological remains. Despite the removal of its heavy mill gearing, the mill is clearly a complex multi-period structure retaining many interesting fixtures, fittings and parts of its milling apparatus.

SITE SIGNIFICANCE

Littlebury Mill finished its working life as a large six pair part steam powered, part water powered mill which like many Essex mills was altered, adapted and modernised to remain a viable business. Although, the mill has since lost some important technological features, including the water wheel, engine house and most of the upright drive, it still survives as one of an increasingly small number of mills in Essex that have not suffered conversion to residential/commercial use and as such retains its spatial integrity, increased levels of technological survival (mill stones, sack hoists etc) and interestingly its historic and technological readability.

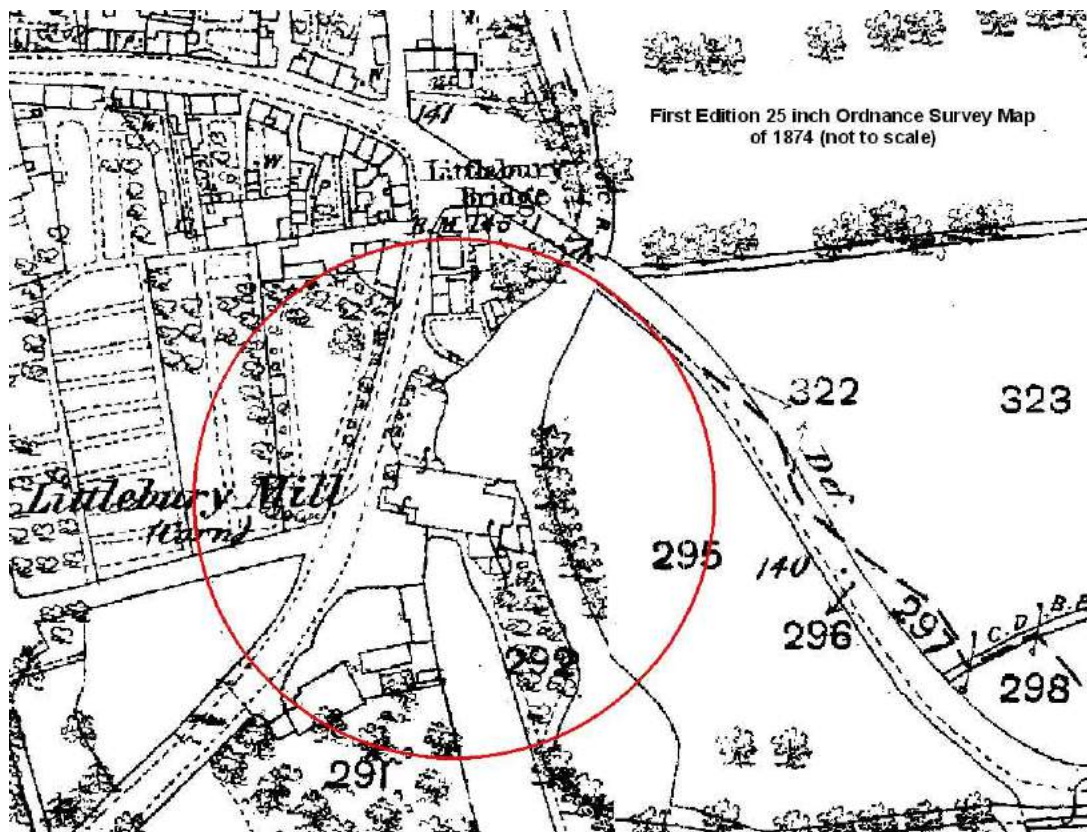
RECOMMENDED ACTION

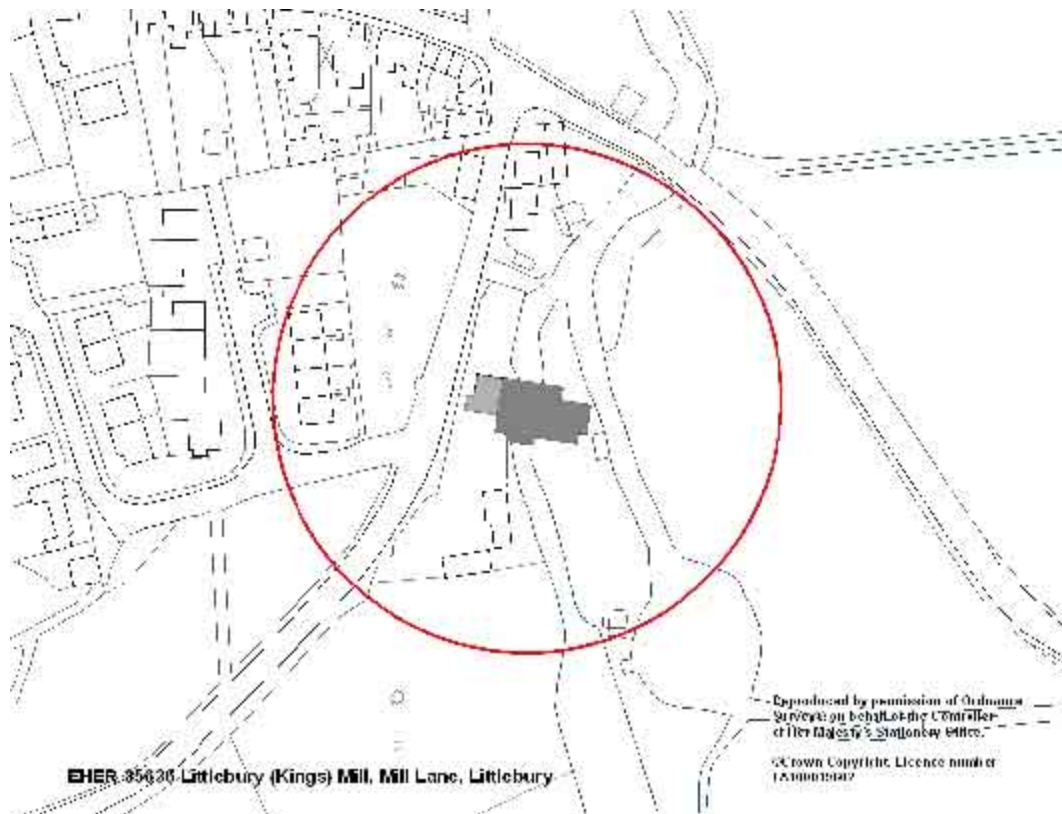
Maintain current Grade II listed status

MANAGEMENT

Prior to planning approval for any significant construction work or alterations to the mill an historic building impact assessment, guided by the principle of identifying and preserving as much as possible of the mills original features, should be recommended. This will form the first stage of a programme of assessment and detailed study of the building designed to inform local planners and conservation officers of its historic significance and the impact of proposals on the building. Following the impact assessment a historic building survey at an appropriate level should be completed.

GRADING ***





Littlebury Mill Stone Floor



Undated photograph of Littlebury Mill showing removed lucam



Littlebury Mill and Mill House looking north-east

SITE NAME Tilty Mill, Duton Hill			
PARISH	Tilty	DISTRICT	Uttlesford
NGR	TL 59944 26732	EH	37114
RIVER	Upper Chelmer	EHUID	122122
CURRENT STATUS	Con. Area No	Listed Grade II*	EBARR 1986

STATUTORY LIST DESCRIPTION

(amended) 10/09/1981

Watermill. Early C18, heightened in C19, and most of the machinery dates from the later period. Red brick with tiled roof, half-hipped with a gablet at one end and a weather-boarded lucam for sack-hoisting at the other. Two storeys and attics; 3 windows. One gabled dormer with boarded loading door below. Cambered casements and central doorcase. Interior comprises two storeys, a bin floor and an attic. The ground floor has a high-breast shot waterwheel and a cast-iron pit wheel with wooden teeth engaging the cast-iron wallower. There is a wooden upright shaft carrying a fine six-armed wooden compass great spur wheel engaging two iron stone nuts. The three pairs of millstones have wooden tentering gear. There is a horizontal layshaft with a bevel gear engaging the pit wheel, part of an elaborate gear and belt drive to the third set of stones. All machinery is contained within a boarded chamber, with the waterwheel beyond. Meal bin. The first floor has three pairs of millstones with all millstone furniture intact. A fourth small set of millstones is set up on a cast-iron hursting in a corner. The iron top section of the upright shaft carries a crown wheel driving a layshaft with belt pulleys. There is a roller crusher, work bench with vice and tools, and the gate gear to control the waterwheel below. Bins. The bin floor is fully partitioned into storage bins. The sack hoist is driven by belt from below. The attic floor has a central walkway with access to the lucam and bin openings either side. The sack hoist, chain and guide pulleys are in the peak of the roof, which is boarded inside.

JOHN BOOKERS SURVEY

30/08/1972

Small remote mill in a relatively unchanged condition. Probably late C18; 3 floors and hoist loft, red brick and tiled with weatherboarded lucam. For full details of machinery see (Large. 1959). Iron undershot wheel and interesting variation generally between iron and wooden components throughout mill. One of the best features and possibly an unique survival on a Essex watermill, is an exterior pulley and flywheel, formerly connected by belt; the mill having been driven on occasion by a portable steam engine.

Present Use: Part of farm

Condition: Fair

ERO SOURCES: Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND:

No mention is made of a mill in Domesday at Tilty (Tileteia) although a mill was probably built as part of the foundation of Tilty Abbey by the Cistercian Monks in 1153. The present Tilty mill does not share the same site as its medieval predecessor which is thought to be sited further to the south. Suggestions have been made that the internal timber frame predates the brick outer shell. The mill stream to the east was widened to a 15ft breadth, and deepened and banked for several hundred yards with a primitive flood gate installed at the far end. The waterwheel continued in use up to 1957 and drove a small hammer mill used for animal food. A sale catalogue of 1919 describes 'a powerful undershot wheel' and its lease to H.P. Blyth for £80 pa. The 1845-1933 trade directories catalogue a number of millers

including J. Webb, Hoffgaard Smith, George Smith, Henry Blyth and Robert Chanin (Large, 1959)

Present Condition of Tilty Mill (Based on Tilty Watermill, Bonwick, L. 2005)

The present structure is thought to date from the third quarter of the C18. At present it remains structurally and mechanically complete and survives with an original range of timber and masonry outbuildings (including a pair of cottages). The mill contains a large cast-iron waterwheel and a complete set of gearing to three pairs of stones. Additional equipment includes a sack hoist, a small modern hammer mill and a fourth pair of stones mounted on an elegant cast iron frame. Finely worked timbers of oak and pine are striking features of the mill. Although presently the mill is generally in good repair, but suffering from lack of maintenance over a long period, it requires repair works to be carried out as soon as possible to prevent further deterioration and risk of internal collapse. To establish a weatherproof shell the roof requires careful inspection and repair as do windows, most of which are broken and no longer prevent weather or foliage entering the building. Internally many of the working parts remain in a sound enough condition to allow them to be returned to operation in the future, providing structural repairs to areas of the floors and walls are affected in the short term.

The brickwork has suffered from neglect and deliberate damage although the latter is confined to the NW angle. The entire west wall is suffering from water absorption caused by a build up of earth and undergrowth and as a consequence decay is visible at the ends of the first floor beams and ground floor joists. The condition of the floors improves with height, the third and second floors remain in sound condition. Damage to the first floor in the SW corner can be associated with the installation of the fourth set of stones and hursting, which proved too heavy for the floor joists and have caused them to partially collapse. The ground floor has been affected by dampness and lack of ventilation and as such the floor boards and joists have deteriorated to a dangerous degree. The water driven gear has not turned for nearly 50 years and as a result of decay in the supporting timbers is now completely jammed, although restoration and realignment will be able to rectify this situation. The waterwheel requires lime scale removal, replacement/repair of a number of buckets and realignment of its shaft. The wooden cogs on the wheel pit, great spur wheel and crown wheel have suffered from damp but aside from this the main working parts are in good order and require only cleaning and greasing to bring them back to working order. The mil pond has been backfilled with rubble and organic matter.

Present Use: Redundant

Condition: Fair but deteriorating (2007)

Sources: Bonwick, L. 2005: **Tilty Mill, Essex**. Report on the current condition and proposed repair solutions

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill (corn)	Early C18	Brick	High (Grade II*)
Outbuildings	C18/C19	timber	Low
Cottage	C18/C19	Brick/timber	Low
Pillbox	Mid C20	Brick/concrete	Low-med

ARCHAEOLOGICAL POTENTIAL

Although Tilty does not share the site of its C12 monastic predecessor it does occupy an historic milling site and as such retains significant archaeological interest and

potential for study. The mill remains in an unaltered condition both internally and externally and retains a complete assemblage of original and later mill gearing and milling apparatus.

SITE SIGNIFICANCE

Very important early brick built mill which remains one of a very few mills in Essex that are structurally and mechanically complete to the extent that they could be returned to a operating condition. Due to the remarkable survival of its original and later technologies, internal spaces, fixtures and fittings, Tilty Mill is undoubtedly one of the most important watermills in the county, with few comparable sites in Essex or across the region.

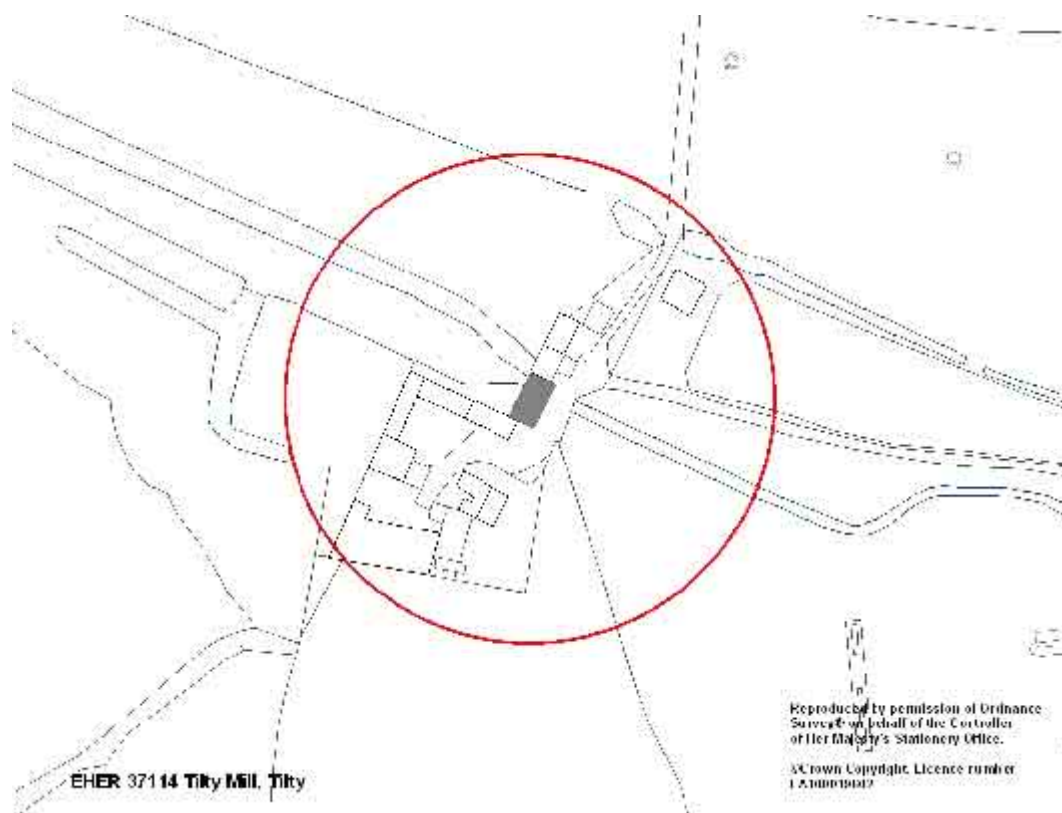
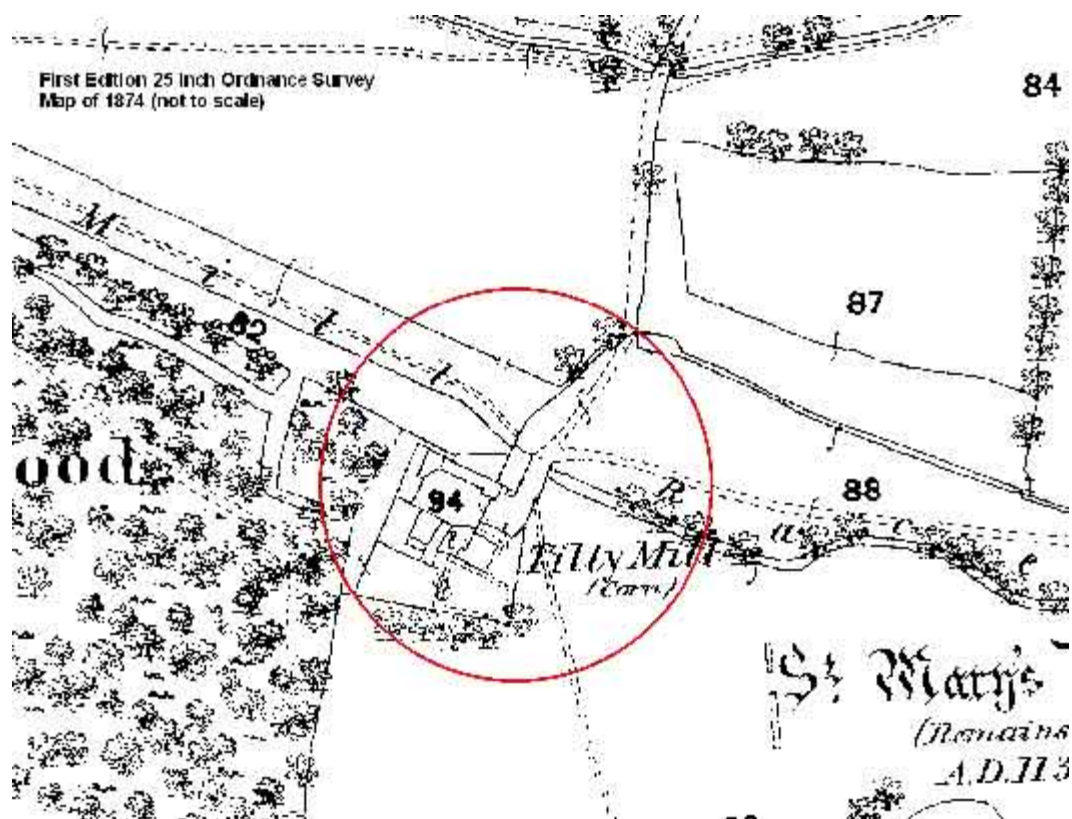
RECOMMENDED ACTION

Given the rarity and importance of this mill on a major national level, applications for residential conversion which impact upon or compromise the present remarkable levels of historic integrity, should be opposed by Governmental heritage bodies, their advisors and Parish and District Councils. Tilty Mill should remain at its current level of listed building status and continue to be included on the Essex Building at Risk Register until a satisfactory, sympathetic solution to its conservation and repair is found

MANAGEMENT

With regard to its most recent application (UTT/1367/06) for residential conversion, the condition and repair proposals for Tilty Mill written by Luke Bonwick (2005) have adequately detailed and assessed the present condition of Tilty Mill and survival of its technology. However, should a revised planning application be submitted which is significantly divergent from the original proposals then further impact assessment work may need to be completed.

GRADING ***/****





Tilty Mill looking west-north-west



Tilty Mill looking east-south-east

SITE NAME	Town Mill, Mill Lane		
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PARISH	Stebbing	DISTRICT	Uttlesford
NGR	TL 65858 24062	HER	36671
RIVER	Stebbing Brook	EHUID	122838

CURRENT STATUS	Con. Area	Yes	Listed Grade	II*	EBAR	No
STATUTORY LIST DESCRIPTION						20/02/1967

A working watermill, producing animal feed. C18. Timber framed and weatherboarded. Red plain tiled gambrel roof ½ hipped to left with gabled, weatherboarded hoist loft with arched timber brackets and 3 light, small paned window. 2 storeys and attic. 4 iron small paned windows. Central board doors to ground and first floor. 5 bays with hanging knees to ground floor and arched braces to first floor tie beams. All machinery intact.

JOHN BOOKERS SURVEY	31/08/1973
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Small C18 weatherboarded and tiled mill of two storeys with hoist loft. Much of the machinery is still in position, the iron waterwheel was working quite regularly until 1960. It is still possible to put the machinery in order, to kibble beans with one pair of stones. This was one of the first mills in the county to be fully equipped with iron machinery, reportedly by Christy Norris in 1877. The adjoining mill house is C18 & C19 of 2 storeys with attics.

Present Use: Part of farm

Condition: Quite good

ERO SOURCES: Mills Along the Chelmer, Large, E (1959) (ERO T/Z 33)

SITE BACKGROUND

The Domesday survey mentions two watermills in the parish of Stebbing. A deed of 1316 refers to Bullocksmelle while a later deed in 1341 also refers to Bullocksmelle in Magna Warefield. As the present mill lies close to a series of fields still named Warefield it seems reasonable that it occupies the site of Bullocksmelle. In 1381 a tax return lists two millers, John Miller and William Crakeborn, the latter thought to be the incumbent of Bullocksmelle. A manorial survey of 1565 records a change of title to 'towne myl' and based on a up turn in farming the conversion in the later 18th century from fulling to corn milling. An early 19th century valuation of the mill was made for Robert Dixon while the tithe award of 1838 records Joseph Dixon as occupier and the Earl of Essex as the owner. After 1843 the mill was leased to Samuel Chopping and then to Joseph Chopping. In 1877 just before arable farming was once more plunged into deep recession the mill was modernised and re-gearred. The lease passed from the Choppings to Henry Ruffel who eventually purchased the freehold in 1901. During this period the mill was worked by Edward Hynds who bought the freehold from Ruffel in 1931. Flour milling at Town mill had ceased by 1901 and latterly it was used to mill animal feed and break horse beans. It finally closed in 1995 (Ellis, K).

During the conversion of Town Mill to residential use in 2003 an historic building survey was completed. Analysis of the timber frame revealed that the existing watermill was originally built in later 17th to early 18th century as a 6 bay two storey watermill with an undershot wheel. The mill was substantially renovated during the last quarter of the 19th century, at which point (1877) a new a **pitch back** wheel and gearing by Fell Christy were added along with a portable steam engine. Contemporary with the re-gearing was the heightening of the mill with the addition of a second attic (bin) floor and a lucam. (Garwood, A & Gibson, A)

Field Survey 2007

05/02/07

Town mill was converted into residential use in 2003. It is a 2½ storey timber-framed and weather-boarded later C17 to early C18 mill abutted by a later in-line brick-built mill house, extended to the rear in the C19. The mills façade comprises a 2 window range on both ground and first floor with a central entrance and taking-in door above. The **lucam** is situated slightly off-centre to the NE and is built into the SE roof pitch just above the eaves. The plain tiled roof is half hipped to the SW but is gabled to the NE where it abuts the chimney stack and lower gabled roofline of the mill house. Gabled dormers have been added to the front and rear pitches of the mill house roofline. The mill pond elevation has few windows with 3 small casements lighting the first (stone) floor and a small casement to the rear of the **hursting**. The C19 rear extension of the mill house is brick built, 1½ storeys with a plain tile Mansard roof and rebuilt axial stack.

Constructed with a primary braced post and truss timber frame using a mixture of both oak and Baltic pine, the mill comprises 6 broadly proportionate bays resting on a red brick plinth, much of which was replaced when the mill was re-gearred in the later C19. The binding joists were commonly stop chamfered and supported by knee braces, in many cases replacing the original arch brace. The storey posts had Roman numeric carpenters assembly marks which were tagged to the north and ran from I to V from east to west. Although many of the buckets were missing the cast-iron pitch back waterwheel, steel axle, the **double-shut mechanism** and **pentrough** all remained in a restorable condition within the central bays at ground floor. In the next bay to the NE the iron **pit wheel**, **wallower**, **great spur**, **hursting**, two **stone nuts**, auxiliary drive gear and the **tentering gear**, installed along with the waterwheel in 1877 all remained intact. On the first floor (stone floor) one complete set of **French Burr** millstones and furniture remain, although the other two pairs of the original three underdriven stones had been removed. To the north of the extant millstones was the sack hoist drive with a smaller auxiliary drive and hursting to the west. Meal compactors, sack scales, counterweights, lay shafts and an assortment of millers tools including, dressing hammers, planes and a lewis were recorded at the time of the survey in 2003. The attic floor mainly comprised a series of grain bins and hoppers set either side of an axial walkway or catwalk. Sack traps were present in the E and W bays and in the lucam floor while the sack hoist drum was located adjacent to the straight flight and opposite the lucam. Pulley mechanisms for tensioning the sack hoist drive and for remotely operating the hoist remained within the main roof and lucam. The roof structure had been reworked when the mill was heightened in the C19, but it maintained much of its original form reusing the heavy oak and pine principals and butt purlins. The original raking struts however were removed to enable the addition of the axial walkway (Garwood, A & Gibson, A).

As part of the consent to convert the mill into a dwelling, agreements were made with the owner to retain much of the mills important internal technology, including gearing, stones, fixtures and fittings. Whilst it seems unlikely that major components such as the waterwheel, drive train, auxiliary drive and stones would have been removed, the survival of more peripheral fixtures and fittings (pulleys, hooks, eyes etc) is less assured. Only internal access could determine levels of survival. However from a brief external inspection it is clear that features such as the large metal framed multi-paned windows of the front elevation, inserted during the 1940s, have been replaced with modern facsimiles although the original board doors remain in situ albeit as decorative features.

Present Use: Private residence.

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Water mill (corn)	Late C17 to C18	Timber	High
Mill house	Mid C19	Brick/timber	Med
Sluice gate	C19	Brick/timber	Med

ARCHAEOLOGICAL POTENTIAL

Town mill occupies an historic milling site and as such retains significant potential for the survival of medieval and post medieval archaeological remains. Although the mill and mill house were converted in 2003 it still retains many original features, its iron mill gearing and a single set of stones.

SITE SIGNIFICANCE

Prior to its conversion into a dwelling Town Mill along with the likes of Tilty Mill and Thorrington Tide Mill could be classed as one of the most important watermills in the region. The building had remained in a remarkable state of preservation having worked up until the 1960s and although its residential conversion was 'sympathetic' it nonetheless impacted upon the survival and character of the mill, removing many peripheral features and ultimately the likelihood of it ever operating under its own power again. Lessons should be learnt from this case, particularly in view of the pressures Tilty Mill is presently under. It however survives as the first mill in Essex to be fully equipped with iron machinery, which still remains virtually intact, and the only mill encountered during the survey with a pitch back waterwheel. Even in its present condition Town Mill survives as a nationally important watermill and one of the foremost mills in the county.

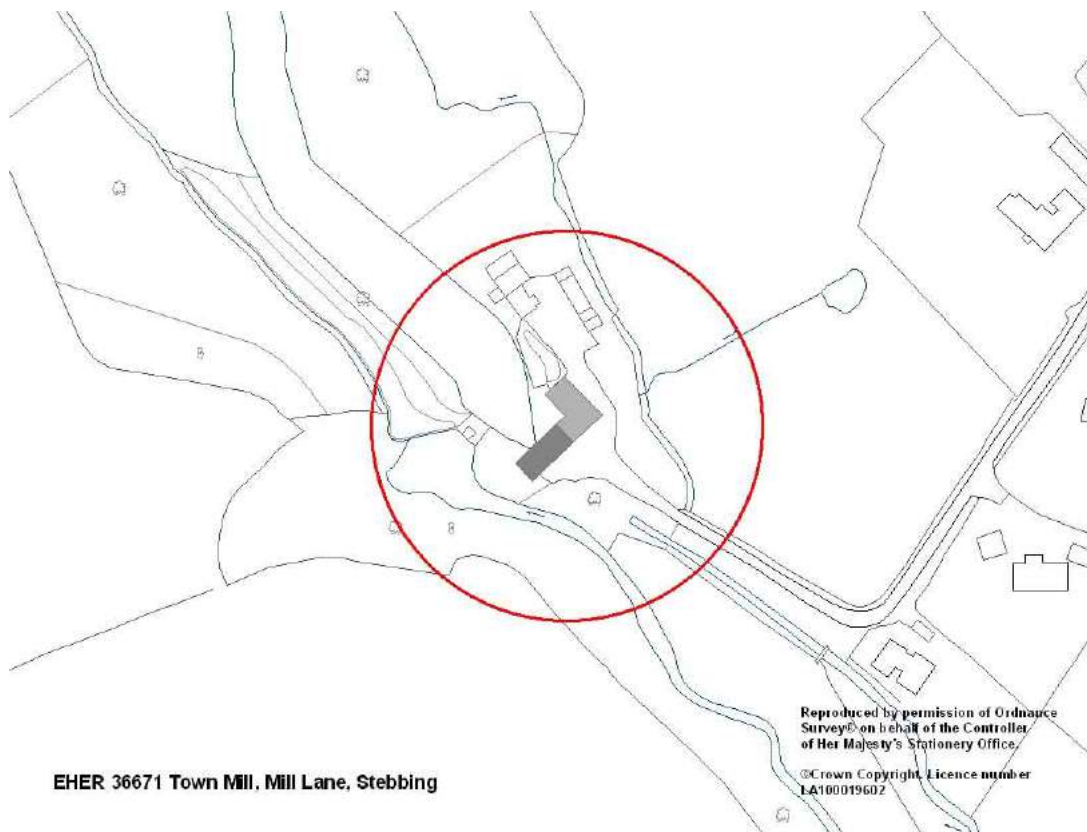
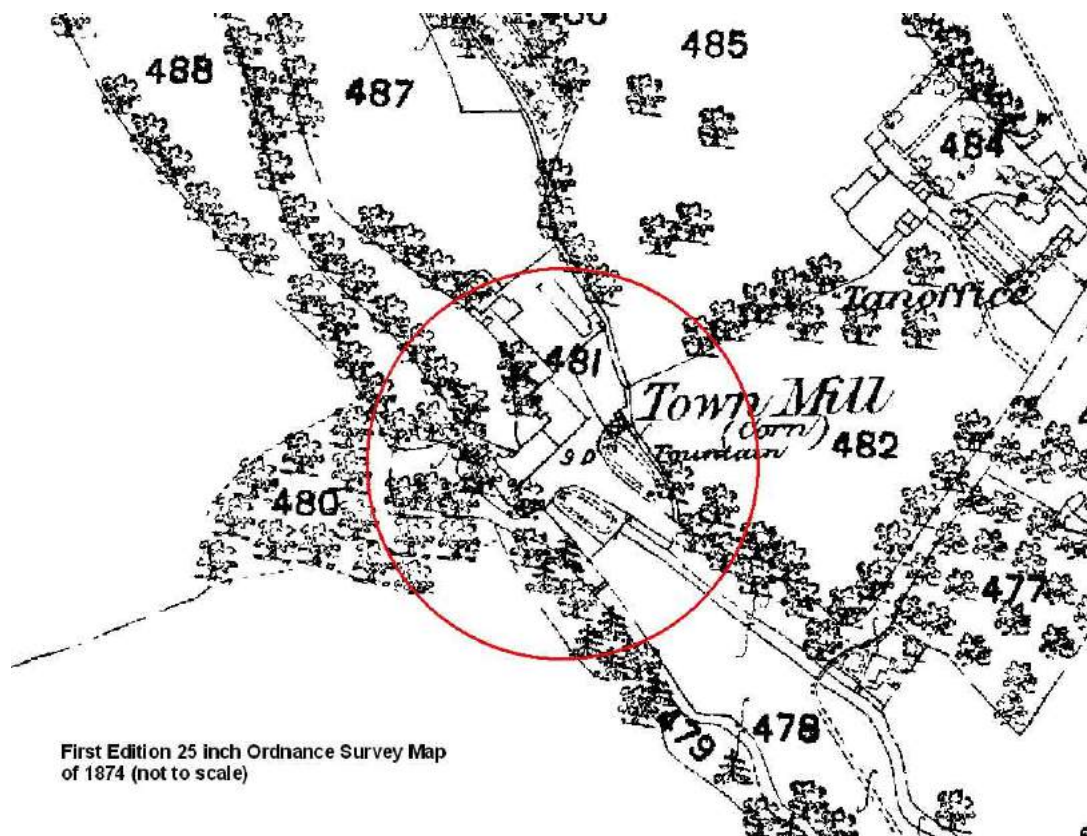
RECOMMENDED ACTION

Maintain current status

MANAGEMENT

Town Mill was surveyed at RCHME level 3 during building works associated with its conversion to residential use. However, there remains a need to assess future applications that may affect the building or the site, such as recent proposals to install a micro-scale hydro electric scheme and turbine shed (UTT/1775/07/FUL). Any such proposals would accordingly require archaeological intervention and/or targeted detailed building survey.

GRADING ***





Town Mill and Mill House looking north-west



Undated post war photo of Town Mill

SITE NAME Wendens (steam) Mill, Wendens Ambo			
PARISH	Wendens Ambo	DISTRICT	Uttlesford
NGR	TL 51558 36344	EHHER	40702
RIVER	NA	EHUID	NA
CURRENT STATUS	Con. Area No	Listed Grade No	EBAR No

SITE BACKGROUND:

Late C19 steam roller mill built adjacent to the Audley End (formerly Wendens) railway station and alongside the main London to Cambridge railway line. The railway sidings serving the mill were formerly located immediately south of and along the eastern side of the mill, to allow carriages to be loaded/unloaded via the lucam formerly situated centrally along the eastern trackside elevation. Given its location Wendens Steam mill was probably owned by or had associations with the Audley End Estate and Lord Braybrooke.

Field Survey 2007

05/02/07

A large seven bay four storey brick and slate built steam roller mill which as part of its conversion into office accommodation has been enlarged with the addition of two and three storey ranges onto its eastern elevation and attached to its NE angle. The original mill was built in 1897 (date plaque on northern gable) and uses red brick for all elevations, with external strip pilasters and a brick plinth. Plain tie bar plates protrude from the pilasters across all three floors. The window apertures have rough brick segmental headed arches of two on-edge courses with plain stone sills. The window joinery is all modern twelve pane casements which may replicate the style of the original fenestration. The survival of a pair of metal framed oculus windows in the gable ends may suggest, however, the mill, like many of its contemporaries including Cock Green, Abchill and Bran End, originally used multi-pane cast-iron framed windows. The appearance of the eastern elevation is much altered as the trackside **lucam** was removed when the mill was enlarged during the later C20. However the position of the lucam can still be seen by the survival of a brick corbel sited just below eaves level and at the junction of the C20 eastern extension. Features such as barge boards, soffits and rainwater goods are all modern. Generally the brickwork survives in a good condition although it has been re-pointed using a hard mortar.

Present Use: Office Accommodation (Archant Specialists)

Condition: Good

SITE COMPONENTS

Term	Period	Material	Importance (H/M/L)
Steam roller mill (corn)	Late C19	Brick	low

ARCHAEOLOGICAL POTENTIAL

Internal access was not possible although given the nature of its conversion and the extent of external alterations and enlargements, it is very unlikely any internal technological apparatus or historically significant features remain.

SITE SIGNIFICANCE

Wendens Mill is one of 27 extant steam mills that survive across Essex and one of five identified in Uttlesford. Although it has been converted for office use and significantly enlarged, it survives as a prominent industrial building that makes a positive contribution to the historic character of Audley End railway station and surrounding area.

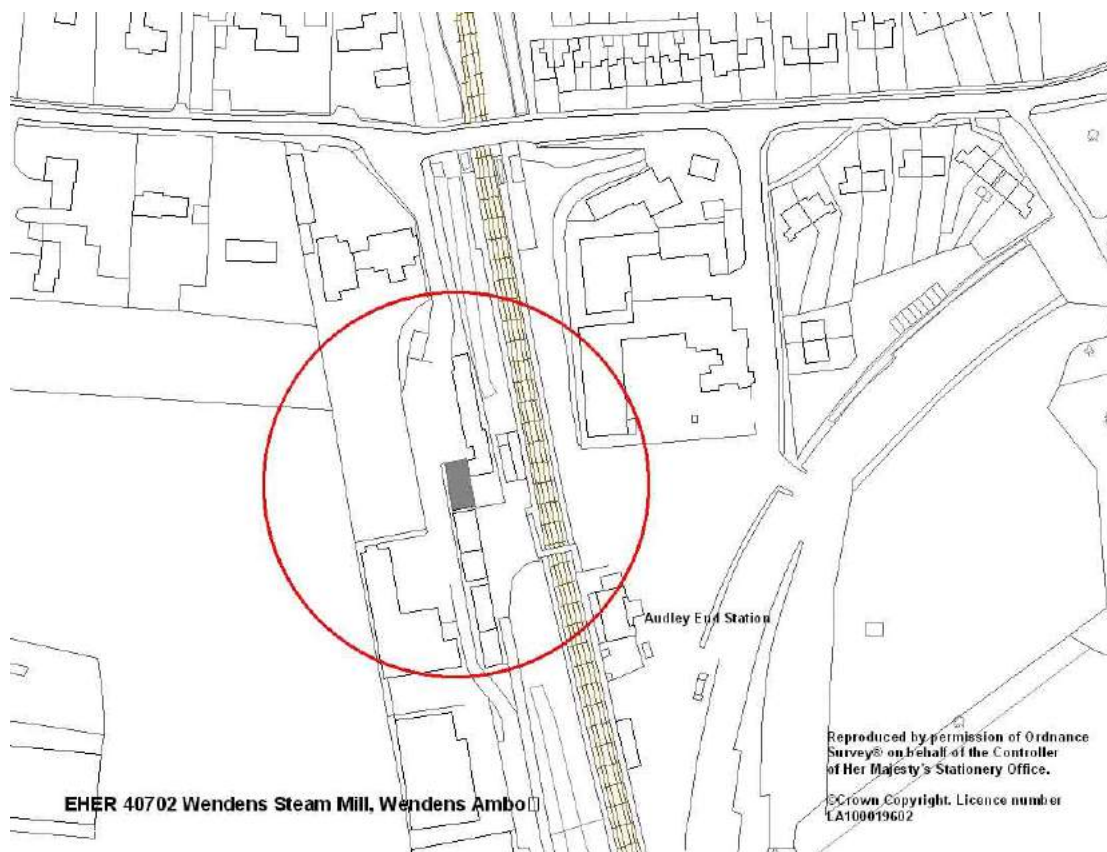
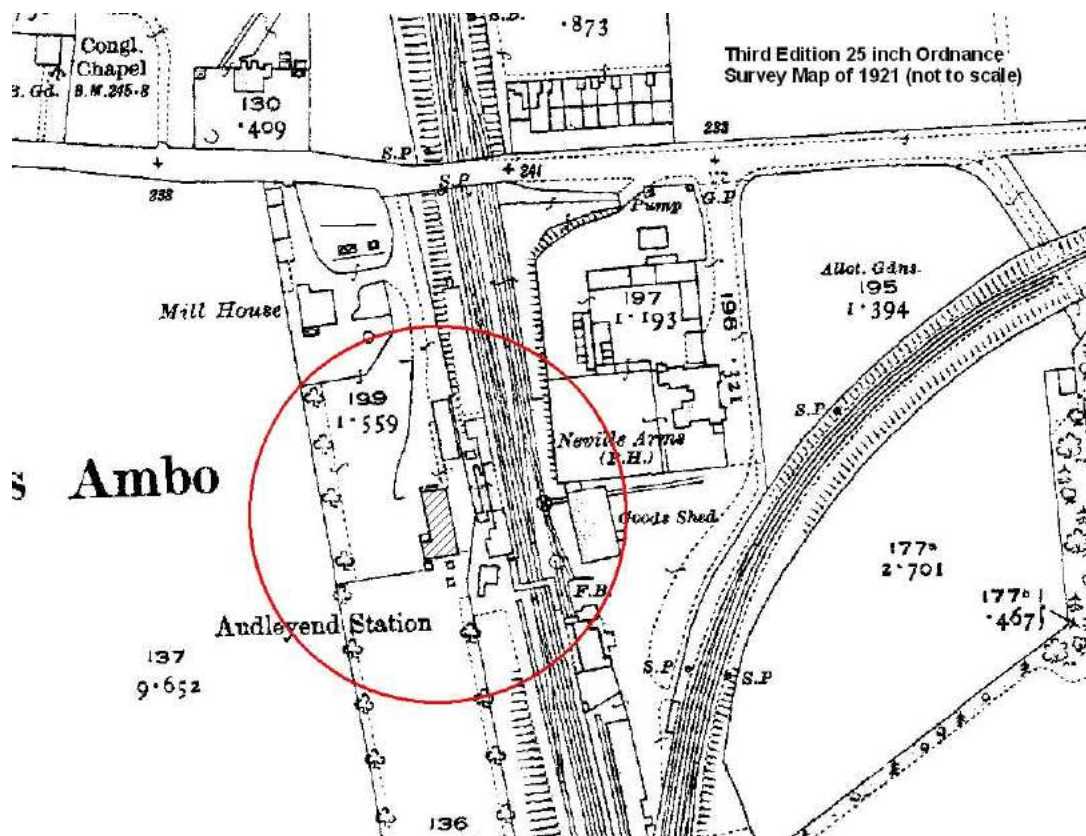
RECOMMENDED ACTION

Due to its conversion and later accretions Wendens Mill would not meet the criteria for listing. It should however be recognised as a locally important building and incorporated within future Local Development Documents covering this area.

MANAGEMENT

The mill continues in office use and is well maintained. If the opportunity presents itself an internal inspection to assess original spatial configuration and survival of technology and/or fittings, is recommended. Alternatively an historic building record at an appropriate level should be recommended if the mill is threatened by significant alteration or demolition.

GRADING *





Wendens Steam Mill looking north

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