Barry Hillman-Crouch
Design & Recording Services

Yardley Hall, Yardley Hall Lane, Walden Road, Thaxted, Essex. Description and analysis of a timber-framed barn and outhouses at Yardley Hall Farm. Surveyed 10 01 2011.

Yardley Hall and the buildings examined in the survey. Google Earth 2006

Location

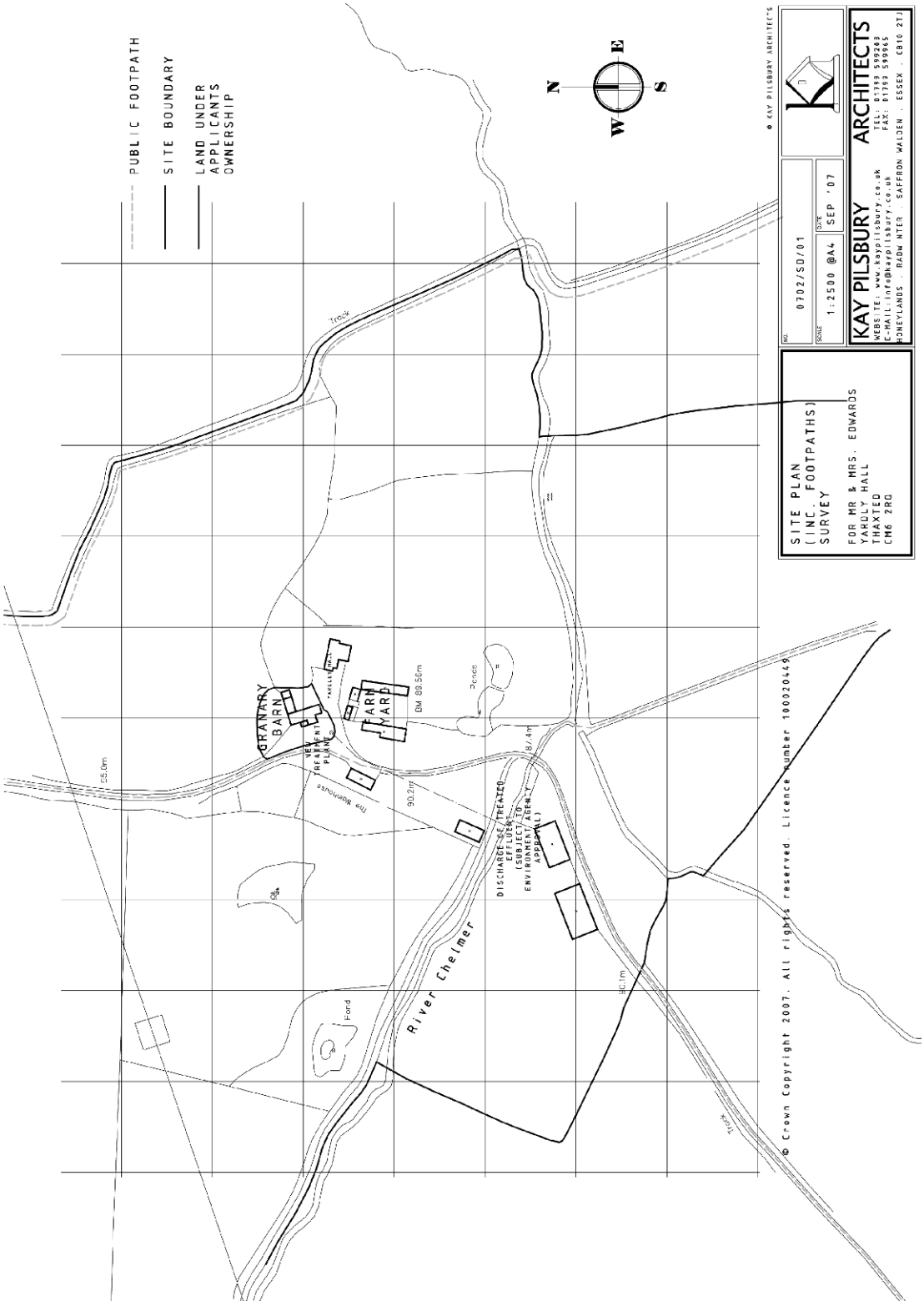
Yardley Hall is located to the east of Yardley Hall Lane which leads from Walden Road north of Thaxted, Essex. TL 59703250. The Hall itself, which is C19th is not recorded in this report which instead deals with the farm buildings to the NW of the house. These are a timber-framed Barn, Workshop, Open Shelter and attached Stable. There is also a LC20th corrugated tin lean-to attached to the NW of the Barn.

The Barn is centred on 31U 316130.00mE, 5760862.48mN (UTM).

The Barn is Listed: 1. THAXTED Barn at Yardley Hall TL 53SE: 1/5 II 2. C17 barn, timber framed and weatherboarded barn, with red plain tile hipped roof. 3 bays long. Hipped midstrey to west. IoE Number: 122266.

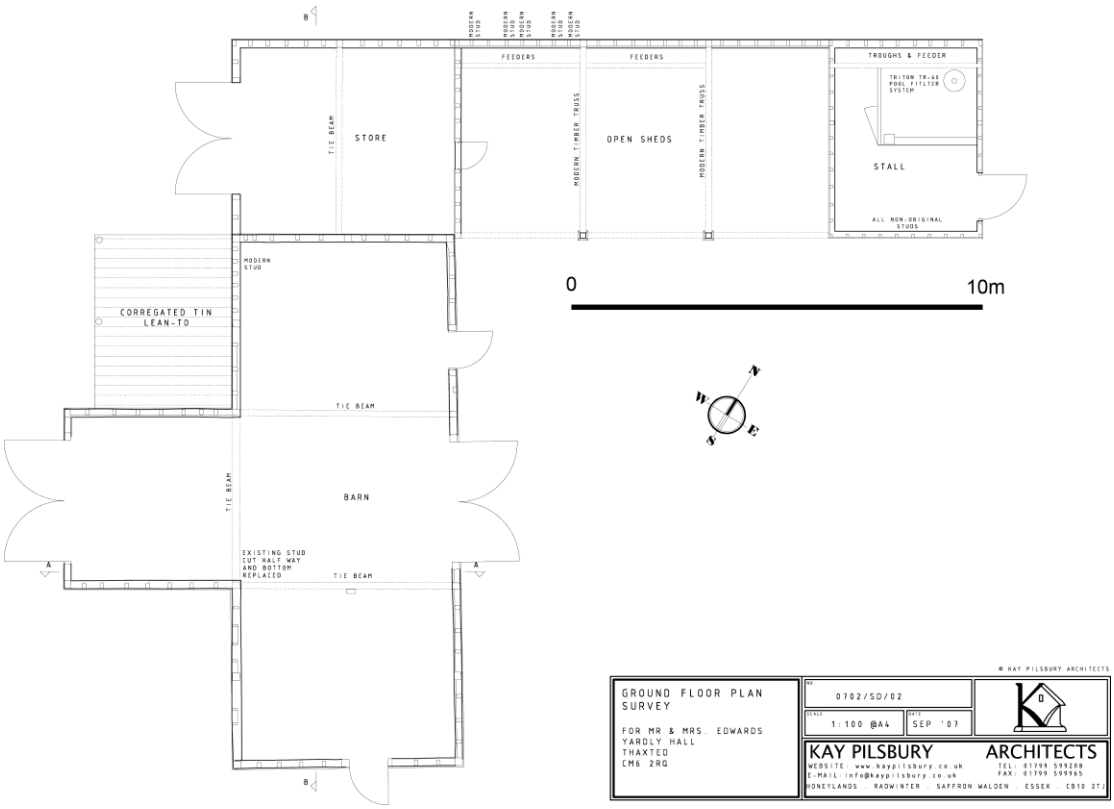
The ridge line of the barn is oriented SSE - NNW which for the purposes of this report is considered N-S. The other buildings are at right angles to it.

Barry J Hillman-Crouch MStPA DipFA BSc HND. Tel. 0794 2010703.
e-mail barry@hillman-crouch.fsnet.co.uk. Website www.dowsingarchaeology.org.uk

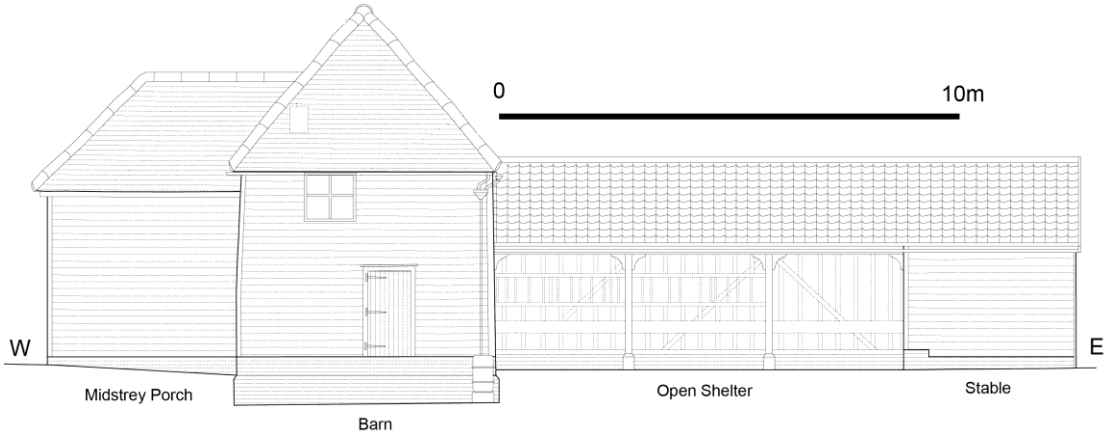


Site location and layout plan by Pilsbury Thomas architects, Saffron Walden. Sept 2007.

Plans and Sections



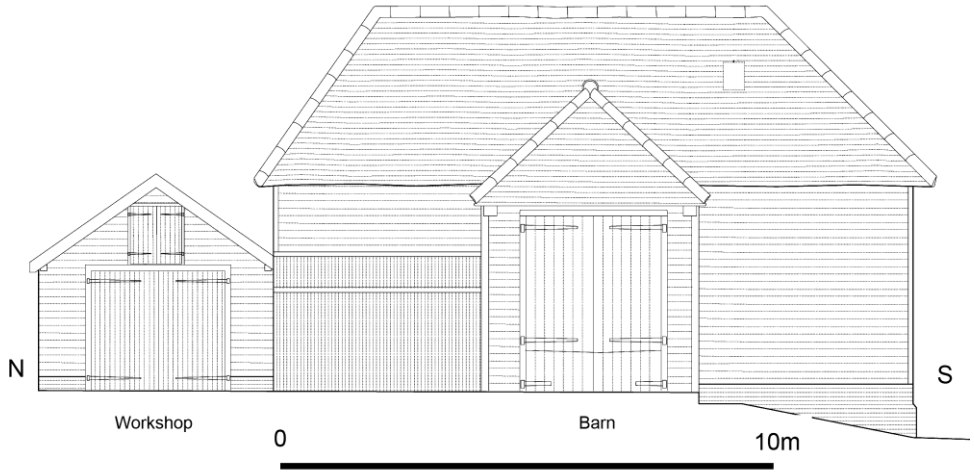
Ground Plan



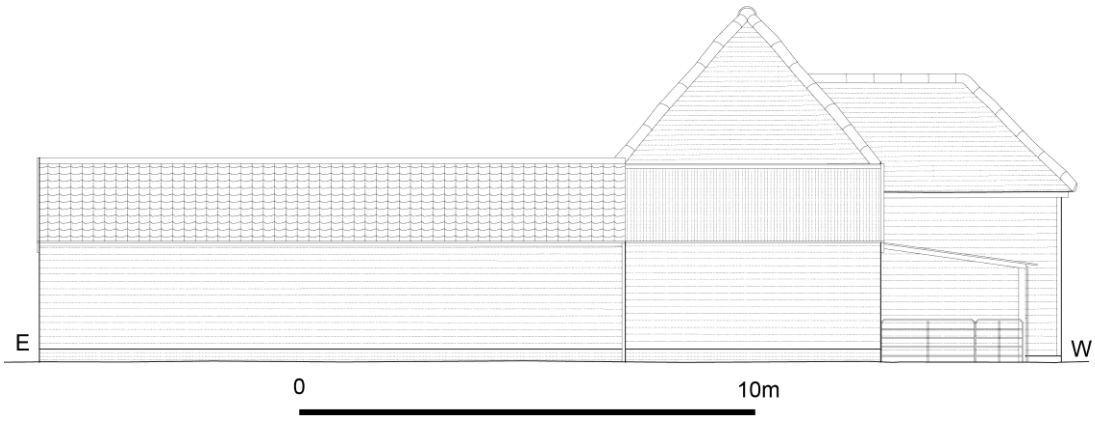
Southern Elevation

Eastern Elevation

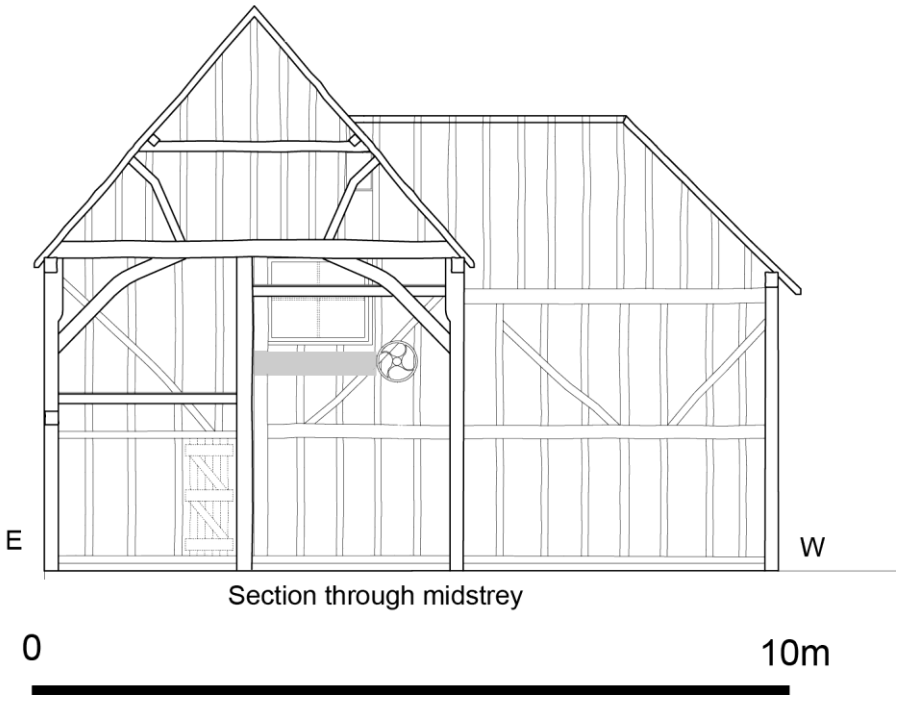
Longitudinal Section



Western Elevation



North Elevation



Section through the midstrey.

The Barn, Workshop and Lean-to viewed from Yardley Hall Lane. Looking E.

General Description

Yardley Hall Farm is split into two distinct farmyards. That to the SW is a quadrangle composed of brick and flint C19th open sheds and pig sties. That to the NW is dominated by a three-bay timber-framed and weather-boarded Barn with a full height midstrey porch on its western side. Beside the porch is a ramshackle timber lean-to clad and roofed with corrugated iron sheets which is currently used as a sheep shelter. It is open to the north with a pair of iron gates to close the pen.

Added to the north of the Barn is a timber-framed Workshop, weather-boarded and roofed with corrugated asbestos sheet. The workshop has no southern wall and instead the rafters are sprung off an applied plate nailed to the outside of the Barn wall.

To the rear of the barn and in-line with the Workshop is an open sided three-bay Shelter still with the hayrack and mangers for the horse standings. Enclosed on the end of the range is a small two stall Stable that contains racks and mangers as well as the pumping equipment for the nearby swimming pool.

This report describes the buildings in the following order:
1. The Barn.
2. The Lean-to.
3. The Workshop
4. The Shelter
5. The Stable

1. The Barn. Description- External Elevations.

The western elevation from the lane. Looking east.

The Western Elevation.

The western elevation is the main elevation of the Barn and has a full height porch set centrally to the three bays of the weather-boarded frame. The smooth feather-edged boards are mostly original and fastened with wedge tipped 2in wrought iron rose headed nails.

Much of the boarding was at one time hot-tarred. Inside the lean-to, which has protected the boards they have also been treated with cold brushing tar. Nowadays the boards are neglected and many are green with mould, the fixings have failed and the boards have split.

The Barn suffered a calamitous failure of the frame as result of a freak high wind in the year 2000. Since then it has been supported with a scaffolding armature, props and many internal timber braces. On the western elevation the porch has been propped with timber shores and the SW corner is badly racked. Some of the boards have fallen off to reveal internal brick noggin and a raised brick plinth which is more evident in the southern elevation.

The roof is clad with plain clay tiles and the ridges made with half-round tiles of which a few were on the ground and appear to be C20th copies. There is a C20th obscured glass roof light inserted into the SW side of the roof near the apex which lights a grain platform within.

The large upper doors are softwood, gate and ledger construction with edge moulded vertical boards. They are nicely made with all the timbers chamfered and precisely cut. There are original wrought iron pintles and straps with incised terminals. The lower doors are replacements in plain, narrower softwood boards with mild steel straps and cast hinges of the type common in the 1930's.

This oblique view of the southern elevation shows how badly the building is racked.

Southern Elevation

The southern elevation consists of the side of the midstrey porch and the south wall of the Barn. The barn is badly racked towards the east and this can easily be seen in an oblique photograph from the SW.

The southern elevation with inserted door and window.

The flank of the midstrey is clad in original boards with a few being replaced near the junction with the Barn. Inside the corner post has been severed and propped with a sleeper and heavily reinforced with steel ties. This was done by the current owners.

The southern wall has many later boards characterised by clear circular saw marks which the original boards lack. They are also more silvery in colour. There are some C20th band sawn replacements. Many have been refastened with galvanised nails.

Inserted window in the south elevation. Small roof light in the hip of the roof to the left.

In the roof there is a small C20th plain glass roof light which lights the grain platform within. Off centre, under the eaves, is a large inserted opening acting as a window and covered with a thick plastic sheet screwed to the outside. The opening is not a real casement but simply a bodged mullion and transom construction of the C20th. The window is positioned such that it lights the machinery and the ground floor as well as the platforms within.

Below is an inserted door which is now badly racked and impossible to open. It is built in the same style as the midstrey doors. It is a softwood gate and ledger door with vertical edge moulded boards. Inside there is a Woodstock box for the working lock. Crucially however the door is C20th. It is nailed with galvanised French nails and the three T-strap hinges are badly corroded mild steel fastened with screws. The lock has a large old key which must be reused from another door. There is also another key hole with modern escutcheon but no lock.

Some of the boards have been sprung off as a result of the racking suffered and they reveal the back of the brick noggin applied to the inside of the barn. This is useful as it reveals that the bricks have shallow frogs.

The inserted C20th door and the exposed brick noggin and plinth.

The brick noggin is composed of red/orange frogged bricks, 60x110x225mm, with creased faces, wiped soffits and soft arrises. They are bedded in a white crumbly mortar except where they have been reset using hard grey cement. They are identical to the bricks used in the plinth below of which a maximum of 15 courses is visible. The plinth also contains shorter bricks down to 205mm in length and it can be assumed the plinth was built of second grade bricks.

The plinth has been hot-tarred on the outside and contains a step out at five courses down from the sole plate. The area below the door has been remade in concrete. The exposed studs appear to be machined 2x4in softwood replacements.

On this elevation the rainwater goods are black or grey plastic and there is a plastic downpipe into a water butt. Elsewhere the gutters appear to be painted metal but all are in poor condition and fall the wrong way.

The eastern elevation has central doors and a window above.

Eastern Elevation

The eastern elevation is largely obscured by shoring constructed of scaffolding poles and planks. This was erected in the year 2000 after the wind damage. The elevation is clad in mostly original hot-tarred boards but there are several with circular saw marks near the small entrance door denoting replacement.

The central midstrey doors are partly constructed from the thresh-hold boards.

There is a pair of midstrey doors that extend to the height of the mid-rail and are thus much lower than the porch doors. This indicates that the full wagons came in from the west and left empty to the east. The upper doors are poor quality and are constructed of hot-tarred clap board set vertically on horizontal ledgers with short diagonal struts between them.

The doors are suspended on wrought iron pintles of which the southernmost set have been reforged to be fixed to the outside of the doors rather than the inside. This has been done to accommodate a single leaf gate below which has been created by cutting the leap or thresh-hold boards in half. The gate is hung on mild steel straps with cast iron hinges to the same pattern as the lower porch doors. Today these are known as reversible hinges and are popular for stable doors because they cannot be lifted off the hinge.

Set in the jambs of the doorway are two triangular slotted sockets to accommodate horizontal edge-moulded boards for the thresh-hold. The boards are still in-situ but have been cut in half to form the gate. The other half has been crudely nailed together with horizontal oddments of timber to create a solid panel which could be lifted out. To strengthen the construction a piece of C20th machined softwood has been placed centrally and nailed to the mid-rail forming the lintel.

Re-used sash window above the central doors and pedestrian side door.

Above the central doors a reused 9 pane sash window has been inserted in place of an earlier hatch door whose presence is indicated by two redundant pintles.

To the north there is an inserted pedestrian door made of vertical edge-moulded board nailed to four ledgers also of edge moulded boards. There is a Suffolk latch and a woodstock lock. The door has been reversed at some stage as there are keyholes on both sides. The nailed wrought iron straps have spooned terminals and the upper pintle is a modern galvanised replacement. The bottom of the door has been reinforced with an external horizontal batten French nailed into place while all the other nails are wrought iron.

Besides the door at the lintel is a large iron strip with a square headed bolt passed through it. On the inside this can be seen to be securing a full height timber reused from a LC19th or EC20th building. The timber is machined softwood and has many well cut mortices for studs and joists. These are all marked in pencil. The bolt is fastened with a large square threaded nut packed out with a timber spacer.

The fastening appears much older than the timber as the strip is a reused cart tire from the days when they were applied in strips to the rim and nailed on with studs. The thickness of

the nut and the bolt head also indicate a date nearer 1700 than 1800 when the nuts slimmed down considerably.

The door has been inserted by removing a stud next to the storey post and this may have led to a weakening of the frame. It is significant that the inserted timber is a match for one used to construct the superstructure for the grain platform at the other end of the Barn.

The northern elevation is obscured by the Workshop and Lean-to.

The northern elevation is mostly covered up by the Workshop which has been sprung off the end of the Barn by applying a timber plate to rest its rafters on. There is a small hatch door below the eaves more visible from the inside. The weather-boarding is visible inside the workshop and appears original.

2. The Lean-to.

Built against the midstrey porch and leant off the western wall is the Lean -to (2). Strictly speaking this is not a building at all. It has no foundations or floor. The outer wall and rafters consist of second-hand machined timbers set into the ground or French nailed into place. The wall and roof are skinned with corrugated galvanised iron sheet. The Lean-to is used to shelter sheep which are kept in with two pen rails fastened with bailer twine.

The current owners believe that it was built about 40 years ago and the style of the work and the materials certainly support a date of the late 1960's or 1970's.

1. The Barn. Description- Internal.

The north wall of the Barn from inside. Note off-set mid-rails and high level hatch door.

The Timber-frame.

The timber-framed barn is 18ft wide and 41ft long internally. The midstrey is 14ft wide and the two bays measure 13ft wide. The porch extends by 13ft. All these measurements are nearly exact. The midstrey has a concrete floor while there are large areas of crazed asphalt from an earlier dressing floor in both bays. The timber-frame sits on a brick plinth which has been repaired in various materials including concrete shuttering under the northern wall.

The timber-frame is composed of straight and slightly curved primary bracing from the corner posts down to the mid-rails. The studs, which are cut on a module of 4in are pegged to the plates but nailed to the bracing. The studs vary slightly in depth from 3.5-4in and in width from 4-6in. The wider studs are reused oak while the majority is pit-sawn elm.

The 8x6in mid-rails are all pit-sawn elm and none appear re-used. Several still have the bark remaining. In the north and south walls the mid-rails are offset at the storey posts to preserve the strength of the joints. In the north wall there is an inserted hatchway with a simple door. It is a vertical boarded, edge-moulded door with three rough horizontal battens nailed and clenched. It has wrought iron pintle hinges and a mild steel hasp. The door has been inserted by removing a stud by crudely sawing it off.

The studwork is slightly unusual in that hardly any of the interrupted studs run through but are staggered where they meet the braces. There are no braces beneath the mid-rails and the studs here do not quite align with those above.

NE interior wall showing the offset studs and inserted pedestrian door.

Each bay is divided by a full height storey post into which the mid-rails are pegged. The posts are 8in deep by 6in wide and are straight. The corner posts and principal posts for the trusses are the same section but tapered from the base and then jowled in long tapering jowls of varying patterns. The lower parts of the timber-frame appear to have been brick nogged up to the mid-rails from the first, which explains why there are no lower diagonal braces.

Brick noggin still in-situ in the SE wall.

The SW corner of the barn is still fully brick nogged up to the mid-rails and there are small remnants all the way round the barn on top of the sole plate most likely to prevent the rats from gnawing through into the granary store. The brickwork exerts a great weight on the frame and it may be partially responsible for the historic failure seen in the eastern wall and the truss and why it has been removed from here.

There is small section of brick noggin above the mid-rail at the NE corner junction with the Open Shelter which has been refinished with grey cement. (See previous photos). This is an isolated piece and seems likely to have been put in to protect from the rats gnawing through the corner of the building.

Scarf joint in the NW wall top-plate.

The scarf joints are visible in the NW and SW wall top-plates. They are face halved and bladed scarfs. The joints are scored on the underside. The top-plates are very long, spanning two and a half bays, approximately 24ft. The sole plates are shorter and do not require scarfs.

The Barn - Roof Structure

Collar side purlins and queen strut roof structure. Northern truss collar is missing. Looking N.

Southern truss with curved queen struts and collar in place. Looking south.

The roof structure is a composite of clasped side purlins held in intermediate collars and two principal trusses with raking queen post to the principal rafters. Originally each truss also had a collar but the northernmost one is missing. The rafters are paired onto a ridgepiece and the hips created by nailing rafters onto jack rafters. The rafters are a variety of reused oak, elm and modern 2x4in softwood . The roof has an asphalt membrane which indicates the roof was repaired and retiled sometime after the mid 1960's. Asphalt membranes went out of use in the 1980's.

The northernmost truss has failed at both jowls and been reinforced with steel tie-rod.

The two main trusses have narrow section elm posts with clumsy jowls. The northernmost truss has failed at both jowls and badly split out. The movement has been arrested by a homemade mild steel tie-rod assembly. This has been inserted to stabilise rather than reverse the movement. The flat bars are of mild steel secured with hex head bolts and the turnscrew assembly is welded together. Another mild steel strap has been applied connecting to the midstrey top-plate. One spandrel has fallen out of its mortice.

Eastern side of the southernmost truss. Underside shows misplaced teasel mortice.

The tie-beams appear to be reused oak and are much wider than the post heads. The principal rafters do not spring off the top of the tie-beams as they do in more archaic timber-frames but rest on the top-plate beside them.

At the eastern side of the southernmost truss the mismatch of timber can be clearly seen. The tie-beam is much larger that the post head, the dovetail hangs in space and the mortice for the teasel tenon is completely redundant. (The teasel tenon is the tenon on top of the upstand of the original post). The tie-beam is held in place with a nailed and stapled wrought iron L-tie made of twisted wrought iron which stylistically dates to the LC18th onwards. Earlier iron ties are upset to achieve their form.

The principal trusses are strengthened with slightly curving spandrels which appear to be in oak and elm and are located with two pegs at each end. The southernmost tie-beam has been cut into to insert the superstructure for a two tier grain platform and associated machinery.

The Grain Platform and Machinery.

The grain platform occupies most of the southern bay. The barn really is this crooked.

The grain platform consists of two floors supported on narrow section machined softwood joists hung off a central superstructure. The main vertical support beam, which is nearly the full height of the barn is a reused plate from a C19th building with many pencil marked mortices. The beam is rebated into the tie-beam and secured with a steel strap, carriage screwed into place. Horizontal beams are connected on either side and rest on the mid-rail to the east and the top-plate to the west. Horizontal beams also run axially to support the centres of the tongue and groove boarded floors. The joists are supported on applied plates carriage screwed to the frame of the Barn.

Grain hopper on the top floor. Connecting ladder between the two floors. Machinery behind. Looking SW.

Fuel tank trestle. Looking NW.

The two platforms are connected by a sturdy timber ladder and there was a ladder to the lower platform which has been removed (owner -pers comm). On the ground there is a large trestle support platform and this was undoubtedly for a fuel tank as the SE corner is soaked in diesel.

The ladder and the trestle are built in the same style and are reinforced with tie-rods that have hex headed nuts. This indicates they were put in at the turn of the C20th or later.

Grain hopper on the top floor and trap door for chain hoist run on pulleys above.

On the top platform there is a square grain hopper in the SW corner that feeds down into a hessian sack tube to the ground floor. The construction is of tongue and groove softwood nailed with wrought iron nails and later repaired with slot head screws. At present it is stuffed with newspapers that date to 1983, the year the current owners took the site and unwrapped their chattels. Beside it is a small frame housing two pulleys which are driven from machinery below.

To the NE there is a trap door for a chain hoist which is situated above and there is a series of narrow pulleys arranged to transfer the drive up to the hoist. Also besides the trap door is a board with a hole drilled into it to allow it to be lifted out. In the axial joist beside the trap-door there is socket for another vertical strut which has been removed and it seems likely that the platform was more enclosed and safer than it is now.

Sack rolling assembly.

Set in the SW corner of the bay below the grain hopper is a large pulley wheel connected by differential gears to a mild steel cylinder wrapped in unused sacks. There is a shift lever that engages the gears to rotate the cylinder. It seems that a roll of sacks was placed on the cylinder and rolled out under power when they were required. The drive engine may have been on the ground, under the trestle or it may have been outside the building to the west.

NEW COMBINED
Corn Grinding and Crushing Mills.

Hunts grinding and crushing machine being delivered to Cressing Temple.

It is most likely that there was a grain crushing machine positioned below the sacking chute from the hopper and that the crushed grain was then transferred into the sacks from the roller. There is a working example of a grain crusher at Cressing Temple in the Wheat Barn made at the Atlas Works in Earls Colne and there is another type in Alderford Mill, Sible Hedingham both of which are open to the public.

The crushed grain is used to make cattle cake or pig feed. The farmyard to the south has pig sties and open sheds for cattle. Alternatively, the machinery could have been used to dress and clean the grain before sale but this is less likely as the mills had machinery to do this and the dresser would have been on the top floor.

The machinery and platforms are lit by electric light bulbs in several positions starting with Bakelite fittings to modern plastic fittings and it seems certain some of the machinery was still being operated well into the 1970's.

The installation of the machinery undoubted contributed to the failure of the frame in the high winds of AD2000. It is significant that the main vertical strut supporting the platforms is a pair for the repair timber on the NE wall as this indicates a failure very close to the installation time of the machinery. Also the frame of the south wall has been considerably altered by cutting through the diagonal brace to insert the sack rolling machine and the door on the ground floor.

The timber-frame of the barn has been further loaded by the weight of the platform and the machinery and this would have increased considerably when the grain was stored on the platform floors. The main strut was connected directly to the tie-beam with a metal strap so that any vibrations from the machinery would be directly transferred to the main truss.

Dating the machinery is slightly problematic. There are no brand names cast on any of the components and most of the frame is made of a variety of scrap timber. The roller is made of riveted mild steel sheet. Most of the fastenings have square nuts but there are a few hex headed fittings. For this reason it should be dated to the Edwardian period onwards. It can be imagined that the engines providing the motive force were updated through time.

Ironwork Repairs

C21st repairs to the midstrey. North side (left) and south side (right).

Apart from the ironwork repairs already detailed there are a number of post AD2000 straps that have been applied to the junction of the midstrey with the principal posts.

Internal struts and props to stabilise the racked midstrey.

These repairs are part of the stabilisation of the Barn after it was damaged in AD2000. There are a large number of inserted timber struts in green tanalised timber that can be seen in nearly every photograph.

3. The Workshop - External Description.

Oblique view of the northern elevation. There is a dangerous ram in the field.

Western Elevation with double doors for a cart or wagon.

Northern Elevation

The northern elevation is clad in hot-tarred feather-edged weather boards of which several have been replaced with untreated boards. The wall has no features save for a modern plastic electricity cabinet. The roof is covered in corrugated asbestos sheets with a ridge-piece formed from galvanised sheet. This was a popular style of roof from the 1930's onwards.

Western Elevation

The western elevation faces the lane and has a small hatch door above large double doors. Both gate and ledger doors are constructed of narrow vertical softwood clapboard. They each have hand wrought iron pintle straps. The doors appear to have been hot-tarred on both sides implying they spent a good deal of the time open. The size and position of the double doors suggests that this is where the farm cart was kept.

The Workshop - Internal Description.

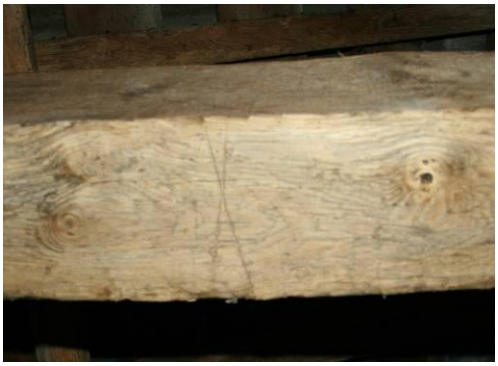
Inside the Workshop. Looking east.

It becomes evident when inside the Workshop that it is an infill building. The east and south walls are those of the Shelter and the Barn and are weather-boarded and tarred. On the Barn wall there is a nailed on strake supported with crude brackets to take the ends of the rafters most of which have sprockets to help locate them.

In the common wall with the Shelter there is a small hatchway inserted into the frame. Where the boards have fallen off besides the hatch it can be seen that the stud is marked V. Counting from the other side this corresponds with it being stud number five of the Shelter wall.

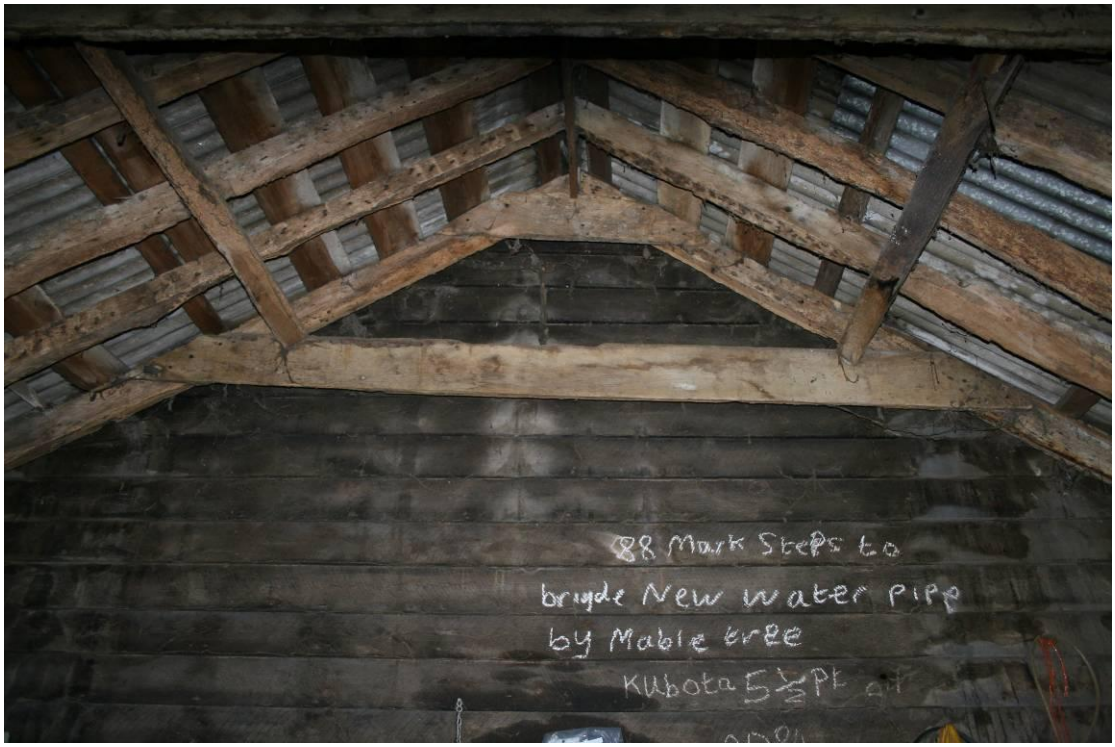
Northern wall of the workshop. Note tie-beam above.

The northern wall is a timber-frame with central post and two diagonal braces down to the sole-plate. The studs are nailed to the braces and may be skew nailed into the top-plate as there are no peg holes except for the principal post. The studs are 3-4in deep and up to 6in wide. They all appear re-used and mostly of oak. Several are quarter sawn.



There is a central tie-beam that has been cut down in length and section from a much longer earlier timber with deep mortices for spandrels each having three peg-holes. The centre of the underside of the tie-beam is marked with a long X which may be an apotropaic mark. (See later section).

The Roof Structure.



The roof is clad in asbestos sheet.

The roof structure is a simple clasped side purlin construction made almost entirely out of reused timber. The rafters are of all sorts of timbers and dimensions and many are studded with nails where they have been turned. There is a machined timber forming the ridgepiece and the main collar. There are a variety of machined boards nailed axially to the rafters on the outside to which corrugated asbestos sheets are nailed.

4. The Open Shelter

Northern elevation of the Open Shelter and the Stables. Looking west.

Southern elevation of the Open Shelter and Stable.

The Open Shelter and Stable are two separate buildings made good under one roof. The indications for this are the separate roof structures, the arrangement of the partition walls and the brick plinth composed of 65x110x225mm red/ orange bricks set in beige mortar.

The northern elevation is clad in weather-boards of two distinct types, the upper parts are largely hot tarred while the lower are not. There is a vertical joint in most of the boards where the Stable meet the Shelter but it is clear that the two buildings have been re-boarded. The roof is of C20th concrete single roman tiles and spans both buildings.

Interior of the Shelter looking NW. Note hayrack and manger.

The Shelter is 14ft wide by 29ft long internally with a gravel and earth floor. The western and northern walls are of braced interrupted studwork but while the west wall is made of pitsawn and reused studs on a 3in module the northern wall is composed mostly of 2x4in sawn softwood.

There is the remains of a timber hayrack with square section bars which has been sawn off. Originally it spanned the entire Shelter and the sockets are visible in the end wall. Below is the timber-plate that formed the back of a feed trough again the length of the Shelter. Both have been constructed with wrought iron nails. The wall behind the trough has been brick nogged with similar bricks to the plinth.

In the western wall is the small hatch into the Workshop with a small timber door. The door is made of vertical edge-moulded boards. It has thin mild steel T straps with spoon terminals fastened with nails and slot headed screws.

It can be seen that the door has been inserted as the tenon is still in the sole-plate forming the threshold from where it was sawn off.

The Roof Structure.

Pre-fabricated machined truss with central king strut. Looking west.

The roof is supported on two identical machine cut prefabricated trusses secured with iron L-ties and small hanging knees nailed into place. The truss has a central king strut supporting the deep, narrow section ridgepiece. The king strut is bolted to the tie-beam with a square headed wrought iron bolt that passes up into the strut and connected with a square flat nut. There are two raking struts rebated in to the king strut and connected to the principal rafters. Where visible the joints are marked in pencil.

The weight of the tiles is taken by deep narrow section machine sawn purlins trenched to pass over the principal rafters and located with timber cleats. The roof is then boarded with tongue and grooved board from eaves to apex. The roof must then be battened along the axis of the roof.

This roof construction is carried on into the Stable where it is executed in modern machined and tantalised timber in place of the clasped side purlin roof that was originally there. (See section on the Stable).

The carpentry indicates that the Shelter was built late in the Victorian period and reroofed late in the C20th. It seems likely that at some point the Workshop was the chaff room where the straw was kept to feed and bed the animals and was shovelled out through the little opening.

5. The Stable

Eastern elevation of the Stable with split door.

The eastern elevation houses the split stable door into the two stalls within. Many of the hot-tarred weather-boards have clear marks of the circular saw. There are also short sections of recent board fastened with galvanised French nails next to the doorway. The roof is finished with barge boards.

The split doors are similar in construction but not contemporary. Both are gate and ledger softwood doors with vertical edge-moulded boards. In the upper leaf the ledgers are heavy and chamfered while in the lower they are thin section boards without chamfers.

The hinges are mild steel strap pintles except for the bottom one which is a mild steel reversible strap with cast hinge. All are fastened with carriage bolts.

The southern elevation has been rebuilt with modern timber. Engineered brick floor.

Inside it can be seen that the southern elevation is recent being constructed of green tanalised machined softwood and new weather-boards. The floor is made of blue/grey engineered stable bricks (sometimes called 'Furrowed blue Staffordshire bricks) to prevent the horses slipping. Some of this has been removed to install the filtration pump for the swimming pool.

Western wall with primary bracing and interrupted studwork.

Hay rack and manger running along the north wall.

The walls are constructed with straight primary braces and interrupted nailed studwork. The mill sawn timbers are irregular although few appear re-used and most of these are in the eastern wall. The top-plates are very straight and are red softwood. The studs are a mix of elm and red softwood.


Chewed through kick boards on the eastern wall. C20th central partition.

There is a redundant timber hay rack and manger fixed against the north wall of the Stable to the same design as that in the Shelter. The lower parts of the walls are clad with edge-moulded tongue and grooved softwood to protect the horses. This is badly chewed on the western wall and it looks like the horses cleaned their teeth there.

There is a centrally placed timber partition that divides the room axially. Constructed of edge-moulded boards, modern machined timber and a railway sleeper it is a curious addition indicating the Stable was used into the C20th unless it was put there specifically to protect the swimming pool pump.

The Roof Structure

A C20th roof has been added in place of a clasped side purlin construction.

The current roof is a LC20th addition in machined and tantalised softwood. On both the eastern and western wall the original collars have been removed and replaced with band-sawn planks nailed on with large French nails. It seems most likely that these replace collars to take clasped purlins similar to those in the Workshop.

Carpentry and Timber Marks. Apotropaic Marks and Grafitti.

Marks in the Workshop and on the grain machinery.

There are so few marks of any kind that it is possible to consider them all together. The position of each is recorded in the main text. The timber-frame in the northern end of the Shelter has a stud marked V using a wide bolster visible in the Workshop. It is highly likely the rest of the frame is also numbered up.

There is a long X scratched on the underside of the tie-beam in the Workshop. These are often interpreted as apotropaic marks to ward of witches. The X is a contraction of the symbol for Chi-Rho the first two letters of Christ. These letters were quite commonly put on agricultural buildings in the mid C19th as a response to archaic superstitions resurrected by the 'Cunning Men' of which there were a few in Essex.

The underside of the sack rolling machine has 't128' painted in signwriter's white on the underside of the frame but it seems more to show reuse of the timber rather than any instruction or brand name. The sacking tube was printed 'Saffron Walden'.

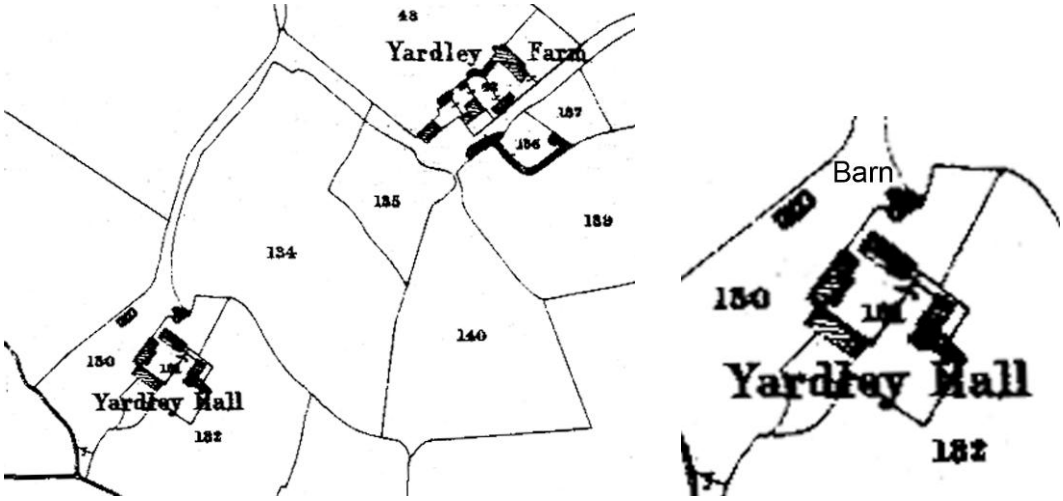
In the Workshop there are some chalked instructions for finding the water supply near the 'Mable Tree' areference to a Kubota 5 ½ and some phone numbers all which can be read off the photographs.

Quite a large number of the timbers are marked up in pencil and this indicates work carried out from the mid C19th onwards as prior to then pencils were only commonly available to gentlefolk for drawing not to tradesmen for marking out.

Topographical Survey from Maps

1777 Chapman & Andre map of Essex

In 1777 Chapman and Andre recorded Yardeley Hall situated to the east of a small green to the SW of Yardeley Farm. A large enclosure with two buildings is shown, the largest of which must be the Hall. The other may be a barn on the side of the lane but its position does not correspond with the current Barn.

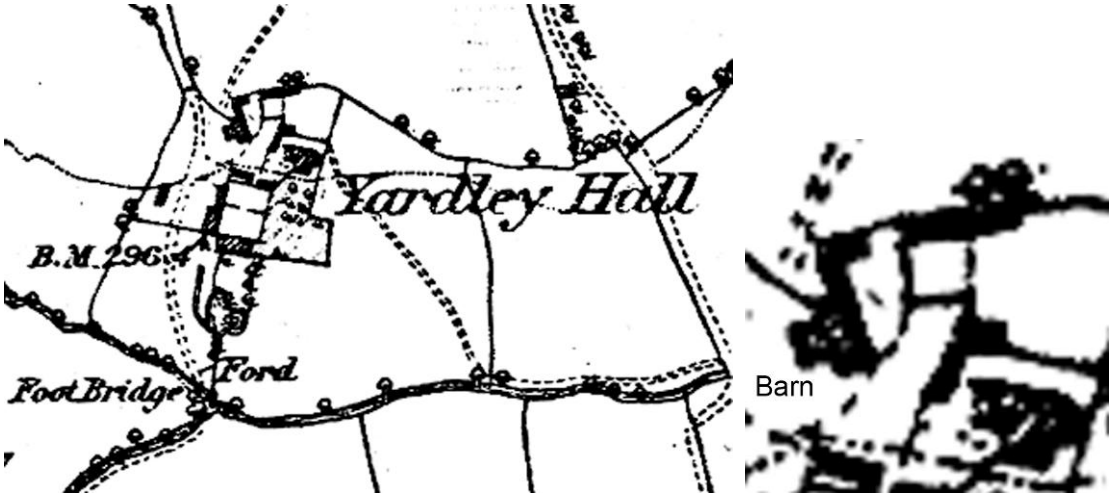


1844 Tithe Map ERO D/CT3 48

In 1844 the position of Yardley Hall is shown more clearly with a developed farmyard immediately to its north-western side. The Barn is now shown to the north as a separate building in the same position and of the same plan as the current Barn. There is also another substantial building across the green to the NW.

In 1844 the owner was the Rt Hon Henry Maynard, Viscount and the occupier Mr John Heckley. Plot No 131 is recorded as Yardley Hall Homestead. The large open area 130 was known as The Chase and plot 132 was known as The Rookery.

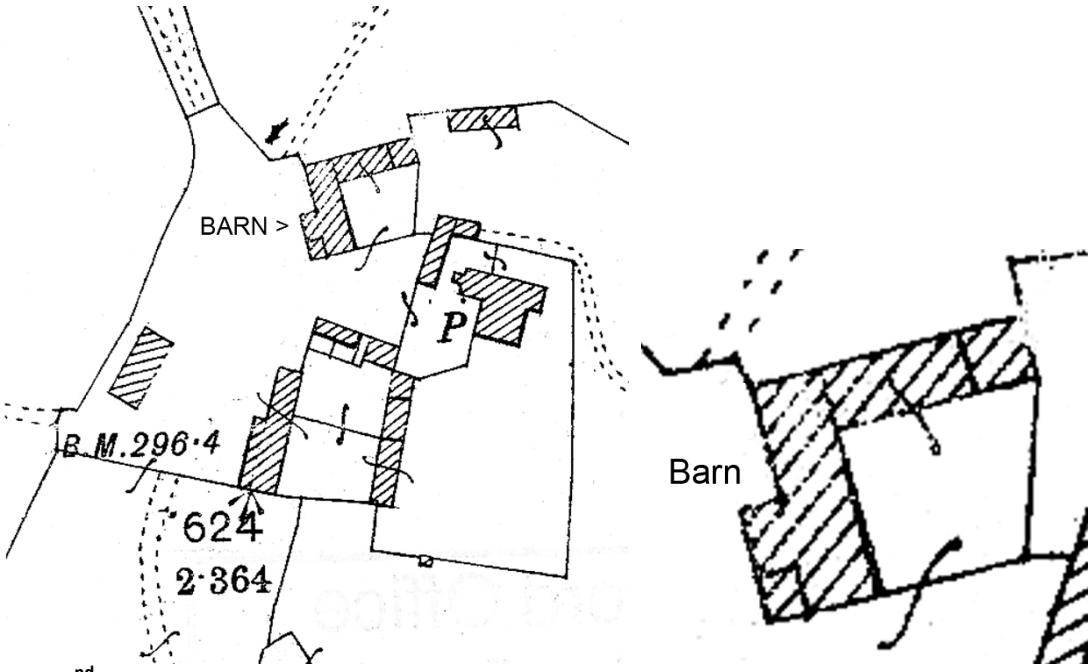
Whites Directory for Little Easton 1848 records that:The Right Hon. Henry Maynard, the present Viscount Maynard, is Lord Lieutenant and Vice Admiral of the County of Essex. He was born in 1786, and succeeded the late Viscount in 1824. He married in 1810, Mary, daughter of R. Rabett, Esq.; and his son and heir, the Hon. Charles Henry Maynard, was born in 1814. Lives at Easton Lodge.



1876 1st Edition Ordnance Survey - 6in scale.

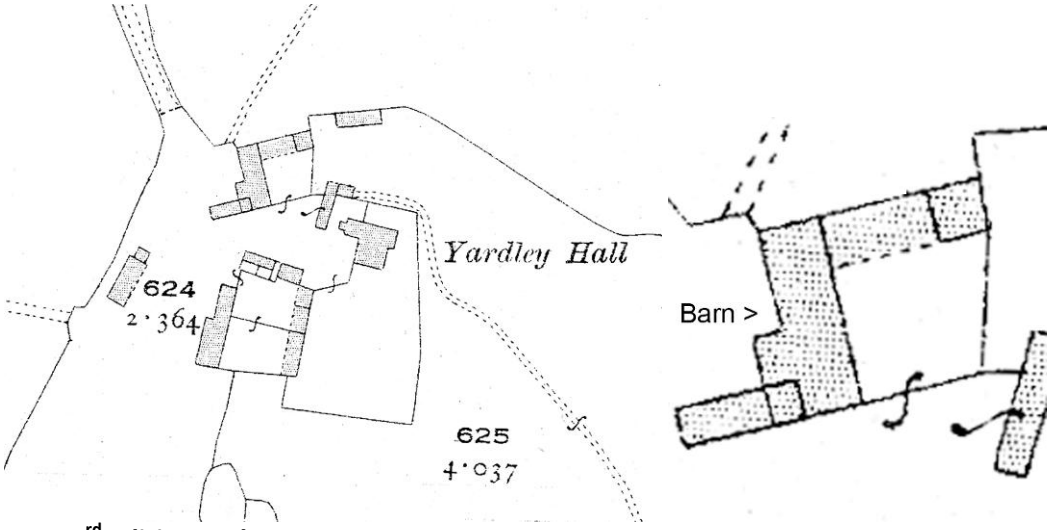
By 1876 the original Yardley Hall has vanished and a new building erected to the NE of the main farmyard. A small building has been added to the north end of the Barn and another longer building placed parallel to the current Stable. The additions do not correspond with the position of the buildings today. There is also a small range of buildings between the Hall and the Barn. Unfortunately the large scale OS is not available in the Essex Record Office.

The 1874 Post Office Directory records 'William Thomas Leeder, farmer, Yardley Hall'.



1897 2nd Edition Ordnance Survey.

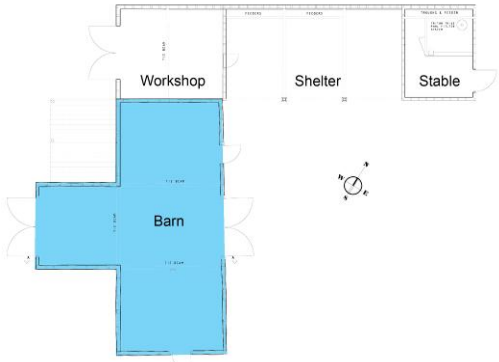
The 1897 OS survey gives a clear picture of the layout of the farm. The Barn, Workshop, Shelter and Stable appear in the same position as today. There is a small outshot added to the SW corner of the Barn



1921 3rd Edition Ordnance Survey.

In 1921 the New Series OS map shows the Shelter to be open to the south side by using a dashed line convention. There is also another building added to the SW corner of the Barn.

Phasing the Development of the Buildings



Phase 1. c.1800. Erection of the Barn.

Despite the Listing entry claiming a C17th date for the Barn there is nothing in the carpentry or brickwork to suggest a building much earlier than c.1800. While it is true that there are two trusses with raking queen posts and curved spandrels they are cut from elm and assembled with wrought ironwork. The ironwork is a definitive type being twisted into shape rather than upset in the forge. It is also custom made rather than re-used cart tires.

The principal posts are clumsily jowled and the sections are too narrow for an earlier building. The tie-beams are re-used from an earlier barn and many of the studs are reworked from older oak. All the principal posts, mid-rails and plates are in elm, some with the bark still in-situ. Most of the studs and the diagonal braces are also elm.

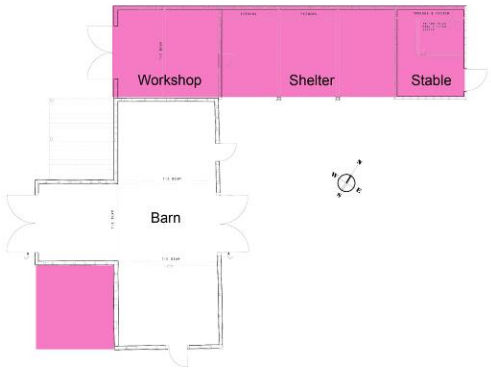
The building was designed as a thrashing barn and granary and all the walls were brick nogged with red/orange frogged bricks in fine white mortar to improve the insulation and

keep the rats out. Hundreds of older barns had the brick noggin retro-fitted when its benefits were realised.

The upper main doors are likely original and the rear doors too, as well as the leap boards which have been cut up later to form a small gate. All the other doors and windows have been inserted later as denoted by the cut through studwork. The Barn was designed as a cool store for the grain originally and had no need of lots of openings. However times and agricultural processes change and it seems very likely the pedestrian door and possibly the hatch over the rear doors was put in relatively soon after the barn was built.

The floor was laid with asphalt, which was a desirable improvement over the beaten earth floor but this was likely done slightly later. Asphalt became common in barn floors at the turn of the 19th century although the first road use of asphalt occurred in 1824, when asphalt blocks were placed on the Champs-Élysées in Paris. Pitch Macadam was not invented until 1834 by John Henry Cassell.

Chapman and Andre's map of 1777 does not show the Barn while it is clearly depicted on the Tithe Map of 1844. It is most likely it was built in response to the grain embargoes imposed during the Napoleonic War of 1799 to 1815.



1876 OS.

Phase 2. 1876 to 1897. Erection of the Outbuildings

The Ordnance Survey of 1876 shows the Barn but none of the other buildings in-situ. There is however a small outshot on the northern end of the Barn that sits in the footprint of the current Workshop. It may be that this was dismantled, the frame reused and the brick plinth exploited for the new range of buildings.

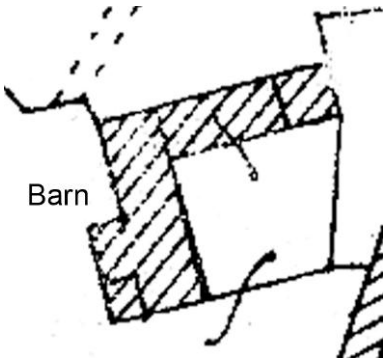
The current frame of the Shelter, marked up on the outside with roman numerals must have been erected before the Workshop but at the same time as the Stables. It is highly likely that all the buildings are simply older ones taken down and re-erected in a style more suitable to the principal of High Farming.

The machine made trusses and purlins in the Shelter indicate a date far closer to 1897 than 1876 as does the 2x4in studwork in the north wall. The design incorporating the wooden hayracks and timber feed troughs was vernacular even then with progressive farmers turning to cast iron troughs and racks to protect their animals.

In 1886, George Fleming wrote in his book ' The Practical Horse Keeper':

'Mangers and hay-racks should be of metal - cast-iron galvanised - or the manger of iron, enamelled inside. White enamelled mangers are easily kept clean, and it is easily seen when they are dirty. Wooden racks and mangers are always foul, and very dangerous when broken, or when contagious diseases are about.'

The Barn had a building added to its SW corner which has left no trace when removed in the C20th. By 1897 the farm had developed into a large livestock concern as evidenced by the open cattle shelters and pig sties of the southern farmyard and the many areas corralled by fences.



1897 OS

Phase 3 - EC20th. Insertion of the grain platforms and machinery.

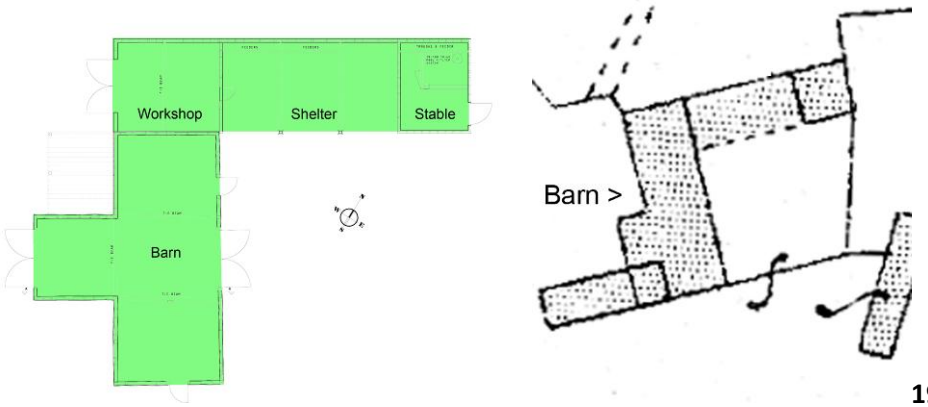
At some point it was decided to process the grain on site rather than send it directly to the miller. To this end a substantial investment was made in inserting a two tier grain platform and the machinery to process and pack it into sacks.

An engine ran a pulley system that could hoist the grain from the ground floor up through a trap door to the hopper floor. From here it was discharged into the hopper and down through a hessian tube into the machinery below. It was more than likely a grain crushing machine rather than a grain dresser because normally the dressers are put on the top-floor and the cleaned grain descends from there.

The crushed grain was then discharged into hessian sacks fed from a roller system that could be engaged through a differential gear operated by a lever. The sacks are loosely connected with draw strings to allow them to be separated. Crushed grain is used to make cattle cake and pig feed, both essential on an Essex farm given over to keeping livestock.

The machinery is undated and has no brand names. It is constructed of cast iron gears and pulleys and mild steel sheets and plates riveted together. The fixings have both square and hex head nuts which while were available for specialised engineering like locomotives and gun carriages from the mid C19th were not generally available until the rise of the motor car. For this reason the installation should be dated to the Edwardian period or later.

That its operation severely affected the barn can be seen in the immediate need to reinforce the eastern wall with a re-used timber identical to one used in the super-structure of the platform. In the course of installation the southern wall was weakened by cutting through the SW diagonal brace and by inserting the doorway and window. Most of the wall was dismantled and then reclad with some new boards characterised by circular saw marks.



1921 OS

Phase 4. C20th reroofing and alterations.

One of the peculiarities of the Ordnance Survey maps is their use of line conventions to depict the buildings. In the 1921 the Shelter is shown as open-sided by the use of a dashed line. The previous editions do not use this convention although the fabric and design of the building clearly indicate this has always been the case.

The maps also appear to indicate that the barn has an extra bay to the north and not, as we know, a separate, added building not present until after 1876. The Stable by contrast is shown as partitioned off.

Apart from the addition of a narrow building to the SW of the Barn (now lost) the activity of the later C20th is confined to roof and building repairs.

The Workshop has an asbestos roof with a galvanised sheet ridgepiece. This form of roofing was really popular in the 1930's and the heavy layer of moss and general appearance would concur with this period.

At the same time the lower main doors of the Barn were replaced using the reversible hinges so popular at the time. The rear leap was sawn in half and made into a gate and a fixed panel. It may be that the 9 pane sash window was installed in place of the hatch above the rear doors as this is a typical bodge of that era. The roof lights also probably went in at this time. The frame was suffering and was reinforced with a mild steel tie-rod assembly.

The Barn was re-roofed sometime from the mid 1960's when asphalt membranes became popular and the Shelter and Stables were retiled using modern roman concrete tiles sometime before 1982 when the present owners took the site.

The Stable was remodelled with green tanalised timber to close off the south side which must have originally had doors from the yard to allow the horses to walk up to the mangers. An axial partition was inserted using old boards nailed to modern timbers and a railway sleeper and this seems there to protect the swimming pool pump.

In the year 2000 the Barn was struck by a freak wind which badly racked the frame and also displaced the Shelter slightly. There is no doubt the Barn was weakened by the insertion of the grain platforms and machinery.

Discussion

After the French Revolution of 1789 there was a long period of instability culminating in the Napoleonic Wars of 1799 to 1815. Britain and France declared outright war in 1803. England also went to war with the USA who in 1807 declared the Embargo Act preventing European vessels from trading with America. War was declared in 1812 and ceased in 1815.

The Barn is a typical building of the Napoleonic War Era which ignited the rush for farms to convert to grain production to capitalise on the grain embargo imposed during the hostilities from AD1799 to AD1815.

'Napoleonic Barns' sprung up all over Essex. They are built to a pattern, one that does not reflect the earlier barns and their intrinsic dimensions based on rods. It is significant that the Barn is measured in exact dimensions of feet and inches. Most of the timber is elm and is original. There are also re-used oak timbers and it is likely that the old barn was torn down to build the new one.

At the same time wrought iron fixings, in the form screw threaded bolts and the traditional 'blacksmith's joints' were being incorporated in the build as part of the original design to secure the tie-beams. Unlike many barns of this period the builder chose to retain the archaic feature of jowled posts with spandrels instead of using square posts and hanging knees. It may be the tie-beams were there to be used and ready cut. The posts however were new in elm.

By the 1840's the concept of Victorian High Farming emerged. According to G.E Mingay in Victorian Countryside (2000) High Farming ' was the achievement of high production by the widespread application of new knowledge and equipment. Land was drained to grow more grain and other food for more and fatter stock, yielding in turn more manure and heavier crops.'

At Yardley Hall in 1876 we see a fully developed farmyard system corralled for animal husbandry. As Mingay says 'To house valuable stock, preserve its manure and promote greater efficiency in the working of the greater complexities of the system, new buildings in new configurations were required. Implements of unprecedented complexity and dedication to single tasks became increasingly common and steam power invaded, first the barn and eventually the field.'

The main farmyard was full of open sided animal shelters for cattle and horses as well as pig sties. The complex around the Barn was in fact the Livery with the Open Shelter for the day use of the horses and the Stable for care and grooming. The Workshop facing out onto the lane was most likely the cart shed.

In the early C20th the grain platforms and associated machinery were installed in the Barn with very little care for the integrity of the fabric. Immediate and ongoing repairs were necessary to prevent the Barn shaking itself apart.

The Barn complex has reverted to the plan of 1897 save for the loss of a building attached to the SW corner of the Barn. These were likely allied to the grain processing going on in the Barn.

Significance

The site typifies the evolution of the Essex farmstead as a reaction to the grain embargoes imposed during the Napoleonic war. The buildings are themselves not particularly remarkable.

The Barn is a modest but well-appointed granary and thrashing barn with good quality carpentry and fixtures and fittings. It was built as a very secure store from the start, lining the walls with brick noggin to protect the crop. Like all the barns of this period it was necessary to modify it quickly, inserting doors and high level hatches to admit light to aid the work going on inside.

The two farmyards were developed, adopting a format that was refined in a layout that would have been recognised by the High Farmers. Horses were brought together around the thrashing barn such that they were as close to the source of food and bedding as possible and provision made for the harvest of their manure.

The site is almost devoid of marks but the X on the underside of the tie-beam in the Workshop may be a throwback to the belief in witchcraft and apotropaic marks.

Acknowledgements

I am indebted to Mr and Mrs Edwards, the owners of the site for engaging me to record the buildings. I also acknowledge Richard Havis of Essex County Council Heritage Environment Team for his help and advice. The survey drawings were kindly provided by Pilsbury Thomas, architects of Saffron Walden.

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Barry Hillman-Crouch
Design & Recording Services

ESSEX HISTORIC ENVIRONMENT RECORD/ESSEX ARCHAEOLOGY AND HISTORY

SUMMARY SHEET

Site name/Address: Yardley Hall, Yardley Hall Lane, Walden Road, Thaxted, Essex.	
Parish: Thaxted	District: Uttlesford
NGR: TL 59703250.	Site Code:
Type of Work: Historic Building Recording	Site Director/Team: Barry Hillman-Crouch
Date of Work: 10 01 2011	Size of Area Investigated: 20x20m
Location of Finds/Curating Museum: N/A	Funding source: Owner
Further Seasons Anticipated?: No	Related EHER Nos:
Final Report: Yardley Hall, Yardley Hall Lane, Walden Road, Thaxted, Essex. Description and analysis of a timber-framed barn and outhouses at Yardley Hall Farm. Surveyed 10 01 2011. Barry J Hillman-Crouch MStPA DipFA BSc HND.	
Periods Represented: LC18th - C20th	
SUMMARY OF FIELDWORK RESULTS: A timber-framed three bay thrashing Barn built c1800 but still incorporating archaic features such as jowled posts and curved braces to the re-used tie-beams. Studwork is interrupted and nailed and the whole Barn was originally brick-nogged to the mid-rails. An EC20th two tier grain platform and machinery is still in-situ and is to be retained. The other buildings comprising a Workshop, Shelter and Stables were all erected between 1876 and 1897 to form a livery. The main farmyard was developed to the south as another complex. The buildings were all reroofed in the C20th and the Stable was remodelled recently with tantalised timbers. The Barn was badly damaged in high winds during AD2000 and has been shored up with scaffolding ever since.	
Previous Summaries/Reports:	
Author of Summary: Barry J Hillman-Crouch MStPA DipFA BSc HND.	Date of Summary: 11 01 2011.