

**HISTORIC BUILDING RECORDING & ARCHAEOLOGICAL
MONITORING ON FARM BUILDINGS AT FYFIELD HALL
WILLINGDALE ROAD, FYFIELD
ESSEX**



Essex County Council

Field Archaeology Unit

May 2009

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HISTORIC BUILDING RECORD & ARCHAEOLOGICAL MONITORING
ON FARM BUILDINGS AT FYFIELD HALL
WILLINGDALE ROAD, FYFIELD
ESSEX

Client: Integra Group Ltd

FAU Project No.: 1889

NGR: TL 5725 0695

OASIS No.: essexcou1-61551

Site Code: FYFH 04

Dates of Fieldwork: May 2008 – February 2009

1.0 INTRODUCTION

A programme of historic building recording and archaeological monitoring was undertaken by Essex County Council Field Archaeology Unit (ECC FAU) on a redundant multi-period farmstead belonging to Fyfield Hall, prior to residential conversion and partial demolition as part of a site regeneration programme. The work was commissioned by the developers, Integra Group Ltd, and carried out in accordance with a brief issued by the Essex County Council Historic Environment Management team (ECC HEM). It follows an Impact Assessment of the site by ECC FAU (Letch 2004) for the owner of Fyfield Hall, Mr. Willy White, upon which this report is based, which incorporated a FAU timber survey and a historic building assessment by timber specialist Adrian Gibson MBE (specialist report in Letch 2004 and Appendix 1).

Copies of the report will be supplied to ECC HEM and the Essex Historic Environment Record (EHER) at County Hall, Chelmsford. The archive will be stored at Epping Museum. An OASIS online record has been created at <http://ads.ahds.ac.uk/oasis/index.cfm>.

Fyfield Hall was built in the late 12th century as an aisled hall and is Grade I listed (fig. 1). It is claimed to be the oldest continuously inhabited house in England (Walker 1999). The farmstead is curtilage listed with the house and comprises important 16th century timber-framed barns and a dovecote as well as Victorian buildings for cattle. Since farming ceased,

the buildings have been used until recently either by the Hall for storage and horse stabling, or rented out as workshops to a variety of companies. These include several modern farm units that will be demolished to accommodate new housing.

The survey examined the following historic farm structures (fig. 2):

- Dovecote 1: Small mid-16th century structure converted in the late 17th century to a granary
- Building 2: Early 19th century extension to barn 3
- Barn 3: Large eight-bay barn built c.1600
- Barn 4: Semi-aisled barn contemporary in build with barn 3
- Shed 5: Early 20th century building attached to barn 4
- Shed 6: Contemporary addition to shed 5
- Shed 7: Mid 19th century shelter shed with later adaptations
- Farm offices 8: Late 19th century addition to shed 7
- The modern farm and industrial structures (buildings 9-14) mentioned above were examined in lesser detail as part of the later development of the farm.

2.0 BACKGROUND

2.1 Site Location and Description

Fyfield is located on the River Roding 4km to the north-east of Chipping Ongar, the nearest large settlement. The Hall (TL 5725 0695) is situated to the east of the parish in open countryside along the Willingdale Road (B184) and accessed by a driveway opposite the 12th century Church of St. Nicholas (fig.1).

The farm complex stands to the north of the Hall and consists of historic timber-framed and boarded barns and outbuildings, dating to the 16th-19th century. They are set around the former farmyard which is partly infilled by large modern industrial and agricultural units that overshadow the older structures and spread out to the east of the complex (fig. 1). The yard slopes downwards from the Hall to the River Roding slightly beyond the north side of the complex. Between the buildings and surrounding them are concrete/tarmac roadways and parking areas for the various businesses.

All the structures are curtilage listed along with the Hall, but the oldest of the farm group, the dovecote, has its own statutory protection, a Grade II listing (LB No. 118377).

2.2 Planning Background

Epping Forest District Council received a planning application (EPF/02230/05) in December 2005 to redevelop the site. The application proposed to convert the barns and other historic farm buildings into residential units, demolition of the modern farm buildings and landscaping for new housing to the east. Mindful of the importance of these structures and their setting within the Fyfield Hall complex, a full archaeological condition was attached to the planning permission for building recording and archaeological monitoring, based on advice given in Planning Policy Guidance Notes 15 and 16.

2.3 Historical Background: Fyfield Hall

Fyfield Hall is believed to be England's oldest recorded timber-framed aisled hall (ECC HEM 2008), with dendrochronological analysis revealing structural timbers dating to 1167-85. It is therefore a nationally important building, commanding a Grade I listing (LB 5/70, EHCR 4159 & 32982). Between 1391 and 1416 the Hall was remodelled in the archaic 12th century style and crosswings added either end in the 16th and 17th centuries (Walker 1999).

Dovecote 1 is believed to be the earliest of the farm buildings, dated to the 16th century (LBS 118377) and still referred to as such, but in fact converted in the late 17th century to a granary (Appendix 1). The large barn to the east (3) and the single-aisled barn 4 were built around 1600 (Appendix 1), enclosing a large yard on two sides. Both barns are shown on maps of the 18th century along with the Hall to the south (figs. 3 & 4), the earliest but least detailed being the Chapman and Andre map of Essex, 1777, which records the property as 'Fifield Hall' (fig. 3). The estate map of 1798 entitled 'A plan of Fyfield Hall Farm' (fig. 4) shows a group of buildings forming an L-shape around a yard to the north of the house. The survey was commissioned by the owner of the Hall, Sir James Tylny Long who held 290 acres (T/M 134/1). On the map, plot 1 is described as 'house, barns, stables, gardens and orchards.' The dovecote is not mentioned and the stables are perhaps attached to the east wing of the house or incorporated with the barns. A yard is attached to the east side of Barn 4. Elsewhere there is meadowland to the west, on the verges of the River Roding (plots 2 and 3) and large parkland to the east (plots 4 and 5), which looks like fields. Two points of interest are the omission of porches to long Barn 3 (which were probably built soon after construction (Appendix 1), and a small square building attached to the eastern side of Barn 4, which disappeared in the early 19th century and has left no trace. More important, perhaps, the west porch of Barn 4 is not represented, which was identified in the survey. Closer to the Hall, the outbuilding range (stables, wash house?, etc) was extended.

Significant additions were made in the early 19th century with the construction of Barn 2, the porches and outshots to Barn 3 and Shed 7, perhaps with a porch like a narrow barn, which are identified from the 1842 Tithe Map of Fyfield (fig. 5), enclosing the yard on three sides and open to the south. Further unidentified structures that are no longer standing occupy areas between shed 7 and the dovecote, barns 3 and 4 and on the east end of barn 3 (fig. 5). At this stage Fyfield Farm held 288 acres and was leased to Thomas Horner from the Wellesley family, Lords of the Manor. Unfortunately no transcript survives to perhaps provide further information on the buildings within the farmyard plot.

The development of the farm at Fyfield Hall becomes quite complex during the Victorian 'Golden Age of Agriculture' a period of agricultural boom referred to in section 2.4 and assessed fully in the discussion in section 7.0. During this period, several new structures were erected around the traditional courtyard plan, most of which are to be retained in the development. In the mid-to-late 19th century the farmyard was split into two by a ninth structure, probably a shelter shed for cattle (1878 OS map, fig. 7), partly surviving as the wall between buildings 10 and 11. Further subdivisions are evident inside the yards to separate the animals, but none survive.

By the late 19th century (1897 OS map, fig. 6) the yards have been covered over to form two covered yards and an extension has been added to the southern end wall of Barn 7, that today forms part of Farm Office 8. It is quite likely the western wall of Barn 4 was removed at this stage.

By the early years of the 20th century (OS map 1915, fig. 8) the yard is again open, but the east side has been replaced by buildings 5 and 6. On the western side, smaller stockyards are shown.

With the growth of arable farming after World War II, large industrial-sized farm buildings were erected to store cereals and farm machinery. In 1975 a major refurbishment of the farm buildings was undertaken by the present owner's father, George White, which accounts perhaps for the modern wall treatments, roofing materials and accompanying alterations.

In recent years farming has been relocated to another estate farm and the vacant buildings either used by the Hall as stables, storage or entertaining rooms, or converted to light industrial use providing workshops for a variety of firms who traded from the site. This was the case when the Impact Assessment was carried out in 2004. Since then, with redevelopment long-awaited, the firms have vacated the site and some remedial works

started to the barns, i.e. stripping-out. Further visits as part of the monitoring works took the opportunity to observe further exposed areas of building fabric.

2.4 Historical Background: Farming in the Post-Medieval and Victorian Periods

Early farms were occasionally grouped around a yard but were more often scattered. Few complete farmsteads in East Anglia date to before 1750 and none before 1600 (English Heritage 1997). Most buildings that survive are barns, because of their adaptable size and good construction. Stables also survive, but lesser so livestock accommodation, which, before the 18th century, consisted of temporary shelters at best.

Between 1540 and 1760 the population of England more than doubled to 6 million. To feed this expanding population, new land was colonised (commons, etc), 'permanent tillage' (elimination of the fallow year) introduced with new root crops and grasses, and improvement made in manuring, drainage and stock breeds. The 'agrarian revolution' as it became known, continued with vigour into the 18th century. Large estates were established by 'improving' landlords who applied industrial principles to farming. Land was enclosed, mechanisation introduced and, from the 1740s, new planned or 'model' farms replaced the earlier farmsteads. Typically their layout was symmetrical around a central courtyard, with the barn one side and stock sheds forming perpendicular wings. One side contained stables, the other cattle sheds. Before this, cattle were kept either outside or in temporary shelters. The fourth side was occupied by feed stores, cartlodes and ancillary buildings and was usually positioned along the roadside.

By the end of the Napoleonic wars (1815) farming had slumped following a wartime boom. But, thanks to further improvements in farming methods, by the 1840s the industry was expanding again. In fact the era between 1840 and 1870 witnessed a 'golden age' of farming, when grain prices were at their peak, leading to an acceleration in farm building and improvement. Demand for grain grew alongside the growth in towns and cities. In this period, also referred to as the era of 'high farming' for its debates on farming form and methodology, the courtyard system was adopted to its full potential, aided by mechanisation, artificial fertilisers and new feeds. Mixed farming, combining grain production with rearing meat and dairy cattle and bullocks, was advocated by contemporary writers as a cushion against depression. Such farms created a cycle whereby food and straw was produced for the animals, which in turn provided manure for the fields. Buildings were arranged to maximise the natural flow of materials, with the yard open to the warmer southern side, surrounded by open-fronted shelter sheds on the three sides and stores for feed and bedding.

Although the planned 'model farm' remained an ideal; the expense precluded use by anyone other than the wealthier estates. However, high farming ideas did trickle down to the smaller farmers. Some landowners remodelled their farms, retaining some of the older buildings while constructing new housing for livestock to give emphasis to the new stock-rearing techniques.

After 1870 imports of North American grain and refrigerated meat from New Zealand and Argentina flooded the markets causing prices to slump again, marking the beginning of the 'Great Depression.' In the next twenty years wheat prices halved, leading to arable land being abandoned in favour of meat and dairy cattle and market gardening. It was not until after the Second World War that the agrarian economy recovered.

3.0 OBJECTIVES

3.1 Building Recording

The purpose of the historic building survey as outlined in the brief is to provide a detailed record of the farm buildings before conversion whilst incorporating relevant findings from the Impact Assessment report (ECC HEM 2008). The record is required to consider the following points:

- Plan form, development and phasing of the farm
- Materials and method of construction
- Internal layout, function and any subsequent adaptations to new use
- Fixtures and fittings and machinery
- Design changes brought about by agricultural developments
- Importance of the buildings in a local and regional context

3.2 Archaeological Monitoring

Monitoring was required of groundworks to identify any buried archaeological deposits that may be disturbed or destroyed by the development, with particular emphasis on the following:

- Origins and development of the site
- Identification and interpretation of medieval and later occupation deposits
- Relationship between standing buildings and below-ground evidence

4.0 DESCRIPTION OF WORKS

4.1 Building Recording

The standing buildings were recorded with the assistance of plans, elevations and sections used as part of the earlier planning application and the FAU timber-frame survey, reproduced from the earlier Impact Assessment (Letch 2004). Each standing building (including those of 20th century origins) was assigned a number and referenced to a block plan of the site (fig. 1). Recording was based on English Heritage (2006) standards and differed between the historic structures, which were recorded to Level 3, and the modern buildings, which were recorded to a lower Level 2 standard to complete the survey. In terms of the survey, modern buildings are defined as those of 20th-century origins. In all cases, external and internal architectural descriptions were made and function of each building was assessed, along with its relationships to others in the group. A specialist report on the main structures was provided by timber specialist Adrian Gibson at the time of the impact assessment, which is included at the end of the report as Appendix 1.

A series of photographs (digital and 35mm colour and black and white prints) were taken to record the buildings internally and externally. Specific views were taken of areas of important architectural detail, fixtures and fittings. A representative selection is reproduced at the back of the report as plates 1-36. Most were taken during the recent survey but some are indeed from the earlier work and dated accordingly (2004).

This report is based on the earlier Impact Assessment report (Letch 2004) which was undertaken whilst the buildings were in use and some of the structures, especially parts of Barns 3 and 4, were inaccessible or hidden from view. The building recording phase was undertaken after the buildings were cleared and further recording took place during the monitoring phase, after some of the larger modern structures had been demolished and some modern wall treatments had been removed by contractors in readiness for conversion.

4.2 Archaeological Monitoring

Monitoring works concentrated on ground reduction and service trenches around the former farmyard and inside the older buildings, where possible. The level of the area of new build to the east of the yard was raised, rather than reduced, and was therefore not monitored.

Site visits were made as required to carry out the works and the monitored areas recorded and photographed using standard FAU methodology.

5.0 BUILDING DESCRIPTIONS

5.1 General Description

The present arrangement of farm buildings indicates the evolution of the yard since the 16th century, which is described in this section and discussed later in section 7.0.

The post-medieval buildings (barns and dovecote) have pegged timber frames clad in weatherboarding and resting on brick plinths. All except for the dovecote have been cleared out. The framing to the 19th century structures is rudimentary and in the case of barn 2, in very poor condition. The newer 20th century buildings are larger pre-fabricated farm structures made from reinforced concrete and steel. The former yard has a concrete surface and any visible remains of former yard surfaces or enclosures were removed at the time. Much of the area outside the yard and surrounding the buildings is hardstanding too.

The oldest and most important buildings stand to the north and east of the yard: Dovecote 1 and Barns 3 and 4, dating to the 16th to early 17th century (fig. 2). Barn 3 is linked at its western end to Barn 2 and modern Grain Store 13 to the east. It forms the north range, stood on the northern limit of the farmyard with Dovecote 1 to west. Barn 4 on the east side of the yard is not aligned truly north-south and is the only building set out this way. Its west wall has been knocked through into early 20th century buildings 5 and 6. To the west an amalgam of buildings of different, though late, date adhere to Barn 7, forming various offices, workshops and a vehicle store that occupy much of the former farmyard area. This group is on a true north to south alignment. Another new workshop (12) stands outside the yard on the eastern side belonging to a scaffold/haulage firm.

The observed wall framing was, in general, in very good condition, dry and largely free from rot. Many areas remain weatherboarded, so the frame survey is based on information from an internal survey, except for barn 4 whose remaining external walls were mostly seen. Expert analysis by Adrian Gibson, who visited the site during the survey, is included in the following descriptions and his full report is set out in Appendix 1.

5.2 Dovecote 1

The dovecote is a small structure positioned in the north-west corner of the former farmyard around a 5.5m-wide square plan and constructed in good-quality fully-pegged heavy oak framing with weatherboard cladding. The listing describes it as 16th century in date, but closer analysis of the fabric by Adrian Gibson suggested a more specific early-mid 16th century date. Its main components are jowled posts and external curved tension braces on

the upper register and a clasped purlin roof. In the later 17th century the dovecote was raised on brick piers to become a granary and a first floor added. In the modern period, the roof was re-laid, piers infilled and the granary floor removed to create a secure ground-floored storage area. This was latterly used to store domestic items from the Hall, some of which remained inside during the survey, but did not disrupt the survey. The first floor is now empty, but contains chaff and grain around the inside edges.

External description

The timber frame is clad in elm and pine weatherboarding and raised on 1m high brick piers situated centrally on each side and each corner. The bricks are handmade fairly hard reds resting in lime mortar and laid in English bond with dimensions of around 220 x 105 x 60mm (8¾ x 4¼ x 2½) each, noticeably shorter than Tudor and 16th century bricks (Ryan 1996). The voids between the piers are blocked with utilitarian stretcher bonded bricks of modern origin contemporary with current concrete floor. The roof is hipped to the west and east and clad in 20th century plain tiles.

A doorway has been inserted between two of the piers on the western elevation and provides the only access inside (fig. 9; plate 1). An earlier door, more likely inserted with the granary due to its height, but probably in an original location is found on the south side by a pair of off-centre projecting door pintels (fig. 9), now partly replaced by a fixed two-light modern casement window.

The eastern elevation contains two currently unglazed windows, inserted to light first floor level. The short proximity of Barn 2 to this wall (only 0.5m) meant access was restricted.

The north elevation is largely hidden by ivy, but reveals a hinged wooden shutter best viewed from inside (plate 2). It is likely to be related to the granary rather than the dovecote (fig. 9). Untreated modern weatherboarding is fitted above.

Internal description

Inside, a concrete floor has been laid contemporary with the plinth infilling. The interior (plate 2) is heavily-framed with large jowled corner posts 0.2m wide, and more substantial posts set centrally in each wall, 0.25m wide. Studwork varies between 0.16 and 0.18m in width (7 inches), positioned at 0.40m from centre to centre. Curved tension braces are evident at first floor level crossing from corner post to stud (plate 3).

The sill beam to the north has plain cogged joints that may have held an early floor; although with no corresponding joints on the opposing south wall were observed.

Set at regular intervals up to the eaves are a series of small holes bored into the studwork and corner post faces that carried pegs to hold horizontal nesting boxes, known as 'columbaria' (plate 4). Each is c. 17mm in diameter, with rows rising in 0.28m stages (plate 4). Some were plastered over after removal. Ventilation to the dovecote was provided by narrow apertures in the walls, one of which partially remains on the southern wall, now blocked. It measures 0.25 x 0.45m and is sited above the midrail. A diamond-shaped socket on the underside of the cross-piece that defines the top of the feature shows the position of an iron mullion that provided ventilation for the nesting area (plate 4).

Plastered panels on vertical laths remain below midrail height on the north wall and on parts of the eastern gable (plate 2) an appropriate internal covering for both phases of use, but there is no indication of wattle and daub infill to the walls. A solitary chiselled carpenter's mark by the west door reads VII.

The first floor is secondary, added upon conversion to a granary, and is supported on a heavy bearing joist aligned north to south, spanning the two mid-posts. Common floor joists link to the main joist by diminished haunched tenons with pendant soffits and are lapped onto nailed wooden clamps above the opposing midrails (Appendix 1; plate 2). Laid over are a succession of floors, the first of 12" wide contemporary floorboards, with later 6" boarding and then modern chipboard. Most of the upper walls are boarded. The entire west wall and gable display galvanised plasterer's mesh behind the boarding, indicating these are either replaced or relaid.

Access by ladder is in the south-east corner, which has been enlarged and probably replaced a trapdoor when this served as a granary.

In the roof, a pegged curved and chamfered collar that traps the purlin at either end divides the two equal bays in the roof (fig. 10; plate 3). A chiselled carpenter's mark identifies this as truss IIII. Further sub-divisions are provided by two bird-mouth collars each parallel to the central bay division. These, along with the thin nailed wind braces in each corner (plate 3), are likely to be secondary, as are the cruder-cut, nailed studs that form the re-built hipped gables either end. All are contemporary in the re-styling of the structure from a gable-ended dovecote, with holes in either gable end for bird access, to a half-hipped granary (Appendix 1; plate 1).

The rafters are mainly original, with some re-use. Plasterer's mesh is attached to the upperside of the rafters, some of which are modern replacements, part of a rebuild contemporary with repairs to the western wall. Nail holes are evident for laths for a plastered ceiling to match the walls on the ground floor and therefore perhaps associated with the dovecote rather than the granary, though such a wall finish would have been useful in both cases.

5.3 Barn 2

Building 2 was built onto the west end of the large twin-porched Barn 3 in the early 19th century (figs 5 & 11). Its original function is unknown, perhaps a cow house or feed store attached to the barn. Latterly it was perhaps used as a grain store as the grain conveyor train leads across Barn 3 and into Grain Store 13. More recently, it seems, the western part was used as a workshop/store. The framing is a mixture of quite late machine sawn timbers and reused timbers similar in scantling to those in Barn 2. Much of the external timberwork has suffered from damp.

The barn is two-bayed and raised on a brick plinth made from fairly hard reds laid in English bond, which are smaller at 215 x 100 x 65mm (8½ x 4 x 2½") than those seen at the base of the Dovecote. The internal space is divided along the two bays by an inserted wall that carries the weight of the overhead conveyor. Crude early 20th century Fletton brick noggin has been added between a light, primary-braced timber-frame to strengthen the structure against the weight of the conveyor and other machinery likely to be housed inside. This has encouraged dampness in the timbers.

External description

The long sides are clad in weatherboarding which has largely fallen away or covered in ivy on the north side to expose a primary-braced machine-sawn timber frame with later brick-noggin infill (plate 5). Two small apertures exist midway on the north elevation, one in each bay, perhaps for grain feeds, but now blocked from the inside. Due to the southern elevation being enclosed behind Shed 9 this information was initially missing. However, once shed 9 had been demolished and the boarding stripped back, a similar pattern emerged, although it was clear the timberwork (studs, bracing and wall plate) was more substantial and comparable in size to Barn 3, perhaps being reused timbers (plate 6). A blocked window was discovered along with an original doorway only partly observed before. Perhaps the frame this side was exposed, which would match with the main barn.

In contrast, the end wall, the western gable, has a thick daub coating, applied on laths cracking and falling away at the top but relatively intact below thanks to its close proximity to the Dovecote (plates 5 & 6). It would be surprising if other walls were not treated the same originally.

The roof has a 50° pitch under 20th century pantiles, which in some places are missing, but was probably thatched originally.

Internal description

Internally the floor is concreted, and cement render is applied to the walls (plate 7). This was likely done to keep the walls clean for the grain and is contemporary with the inserted brick partition wall and brick infilling, up to the weatherboarding. The dividing wall, built up to the truss separating the two bays, is brick built and buttressed on both sides to support the end of the grain conveyer (plate 7). Its tie beam is as substantial as those in the barn and its vacant pegholes point to reuse. Although the raking queen strut roof truss mimics that of the more historic Barn 3, it is of lower quality timber and workmanship, with tie beams and rafters occurring in both hard and softwoods (Appendix 1). In the western bay the roof is obscured by an inserted flat corrugated iron roof below the existing one, and was used as a spares/workshop, or simply just left as it was when Barn 2 was converted to stables, etc.

5.4 Barn 3

One of the most important buildings within the farm group is this large eight-bay barn that dates to around 1600 (Appendix 1). It is located at the northern edge of the yard, with buildings 2 and 13 adjoining the gable ends and porches facing onto the yard and timber outshots placed between (fig. 11; plate 8). The barn is linear with dimensions 30.6 x 6.2m and eight-bay plan form with porches extending from the third and sixth.

Construction comprises a stout timber frame, primary-braced on the upper register and stood on a sandy red brick plinth laid in English bond. Brick sizes are variable, but around 9 inches long (c.225 100 x 55mm each), slightly smaller than those found in the dovecote. The frame is clad in a mixture of weatherboard at the front and cement render at the back, and the roof, which has a steep 50° pitch designed for thatch, is clad in modern pantiles.

The structural timbers are in good condition, though the end west wall against Barn 2 has been largely rebuilt and the front walls between Barn 2 and the east porch completely removed, along well as the porch wall on this side (fig. 11). Despite these alterations, much

of the framing is original and there is little evidence of reuse, though some parts are hidden by cement render, both internally and externally.

In recent years the barn was split into two sides by a concrete block wall (T5 in fig. 11), the west used as storage space by the Hall and 'Villiers Brothers', bespoke engineers, and the east as horse stabling, with three large stalls. Both areas are now clear, though the division remains.

External description

The view of the main south elevation, facing onto the yard, has been impacted upon by buildings 9 and 13, particularly the scale of the former, which is built underneath the end bay and whose diagonal wall protects those areas of walling that are lost (fig. 11). Viewed from the yard, the boarding at the front is looking tired and there is vegetation growing around it. Nothing of the barn itself is apparent apart from the roof and the porches that extend from the third and sixth bays into the yard (plate 8), boarded with modern two-leaf doors and roofs pitched the same as the barn. Between the porches are two lean-to sheds (3a and 3b, described separately) that hide the low barn plinth (0.2m high). Their fronts are weatherboarding with two ledged, braced and boarded doors either side. Two former windows stand either side of 3a but none are evident in 3b. Each of the sheds is shallow-roofed in corrugated tin sheeting (plate 8).

The rear, or north elevation (plate 9), has a 0.80m high red brick plinth containing some reused brick and later Fletton repairs. All the weatherboarding has been removed on this side and cement render applied to the walls, hiding the frame, perhaps part of the 1975 refurbishment of the farm. The east end, which houses the stables, retains few identifiable early features apart from the doorway facing the east porch, remodelled with the insertion of a new frame and door and a blocked loading door above (fig. 10). The 'plywood' hatches on either side are inserted features, relating only to the former stables (Letch 2004), one per stall. The west side retains its porch-facing doorway which is now boarded over and was not constructed with a loading door above. A larger opening has been created in the next bay for vehicle access onto the hardstanding outside, but is now covered over with corrugated iron sheeting (plate 9). Otherwise, the only other features are inserted iron-framed utility windows.

While the western wall is rebuilt and clad in concrete, part of the east wall remains visible inside Grain Store 13 (plate 10) which is built onto it. It would seem that the weatherboarding this end has been replaced by a haphazard series of boards nailed to the frame. About half the studs remain in the gable but it is clear that the collar and other timbers were removed,

probably in two stages, firstly when the conveyor was installed and secondly when it went out of use and the whole gable boarded up. This implies the render was applied when the stables were created.

The west wall partially survives above the midrail where it is not attached to the rear of Barn 2 (plate 11). The outside formed the east wall of Barn 2 and has been lined out in brick and plastered over like the rest of the interior. It is unclear how much, if any, of this wall is original as limited inspection through boarding on the inside of Barn 3 found modern timber and injected concrete fill behind the boarding, viewed as contemporary with the building of Workshop 9.

Internal description

Each bay is around 3.3m wide, except for the middle bays, which are slightly wider. The midstrey/porch bays are 4.0m wide, and these are generally wider in barns to accommodate fully-laden carts at harvest time (fig. 11). The floor is concreted, which continues into Barn 2 and accounts for the rebuilt western wall. The plinth is partly cement rendered and render has been applied to the walls. A date of 7/8/75 is scribed into the cement in the western half. In many cases cement has been applied between the studwork, leaving the frame exposed, though in some cases across the frame, especially in the western side and the eastern gable (plates 11 & 12). More framing seen on east side, but both sides are built the same. Some sections of framing have been completely removed.

Internally the timbers are slightly smaller than those in Dovecote 1, with main framing between 0.20 and 0.25m and studs around 0.12m wide (5 inches). All framing is in oak, pegged and divided into upper and lower registers by midrails. The wall posts are slightly jowled (though more likely due to the line of the grain than design) and tie beams slightly cambered with arched braces in board sections double-pegged to the tie and single to the post (fig. 12). Chiselled carpenter's marks on post and brace on T3 north denote truss number III (fig. 11) which is in the correct place for construction from west to east. The bays are close-studded, commonly 6 per bay and between 0.3 and 0.4m apart, apart from half of the upper register that are primary-braced.

The east end bay was originally partitioned off, probably for storing separate grains or feedstuffs rather than for livestock. Empty pegged mortices exist on the tie beam soffit in T8 for studs and a central post contemporary with the current arched braces (plate 13). The partition did not reach any further than the tie beam and may have held a mid-height lodged floor (Appendix 1), a hay loft perhaps.

Any existing scarf joints connecting the sills are hidden under render but the wall plates are clearly visible in one bay lengths connected by face halved and bladed scarf joints over the bay posts (plate 13).

The two porches appear to be later additions, probably added soon after the main part of the barn was erected (Appendix 1), even though the timbers share equivalent dimensions. In the western porch for example, the primary brace on the surviving east wall connects to a stud adjacent to the barn post, rather than the post itself (plate 12) and the studs are joggled between the registers. The east porch is attached in the same way, even though the studs are not joggled, although the eastern wall plate even overlies the tie beam (plate 14), which is unusual. Both porches have basic collar clasp purlin roofs. The east porch had a doorway on the east side that is rendered on the other side but retains its low door inside Shed 3b (plate 15).

Some alterations to the original fabric have occurred, primarily some limited stud and rafter replacement in new timber. In the lower register of the east end wall are several reused studs containing wattle cuts absent on the original studs, suggesting the barn was weatherboarded from the start or, more likely perhaps, rendered in daub over lath (Appendix 1), like the west end of Barn 2. Many of the new rafters were added when the barn was re-roofed, felted and hard boarded. A few tie beam braces are missing, but only one pair replaced, that in the second truss (T2), which has been notched and nailed in.

The south walls between trusses 1-3 (T1 and T3 in fig. 11) have been completely removed as well as the west wall of the west porch to create room for generators for Workshop 9. Only the bay 1 wall has been rebuilt (in blockwork) and the diagonal timber wall of the workshop now provides the only other protection this side (fig. 11). The tie beam to truss 3 is now supported on a steel girder that continues to the front wall of Workshop 9 (plate 11).

On the north side, much of the framing to bay 4 (T4-5) has been removed to create vehicle access at the back and is now closed off with corrugated iron sheeting (plate 12).

In the roof, raking queen struts are attached by bird-mouthed jointing to purlins either side of the roof, but this detail is obscured by collars nailed to the struts at a later stage, and sawn through to accommodate the overhead grain conveyor that passes between the struts (fig. 12). Most roof trusses contain chiselled carpenter's marks to beam and strut, each strut numbered separately each side, beginning at the east end as II and III (fig. 11), indicating the

roof was constructed from east to west, the opposite direction to the main structure. The positions of all such markings are indicated on the ground plan, figure 11.

The rafters are overlain with hardboard as part of the re-roofing episode and are mainly original timbers, if a little difficult to observe behind the conveyer mechanism. Wind-braces occur at both ends to tie in the outer roof bays

5.5 Sheds 3a and 3b

These are weatherboarded sheds on the south elevation of Barn 3, with 15° pitched corrugated iron roofs raised on low 0.15m tall Fletton brick plinths, and divided internally into three bays with concrete floors. They appear to be built in the early 20th century, possibly as replacements for earlier sheds.

Shed 3a, to the west, has central doors flanked by fixed glazed windows and was used by the Hall for storage in 2004 but is now empty. Inside, the roof frame consists of two crudely-shaped sloping beams lodged onto short nailed cross pieces attached to the barn. The walls show exposed barn and porch timbers but little of the front wall, which is boarded (plate 16). A disused doorway, blocked on the other side was recorded close to the north-east corner (fig. 11) and is a later insertion. Damp had got in beside the porch and caused the midrail and sill to rot.

Shed 3b was last used as a tack room/storage area. It has two entrances and is lit by a single roof light and general light from the main barn itself. Cement render has been removed from the internal walls, exposing the barn/porch framing and a different pattern of primary-bracing on the north wall (barn south) of braces falling either side of the post rather than to the centre. A recent concrete-rendered wall divides the interior along the centre into tackroom and storage area, with access only into the stables from the former. The tie beams here have a better finish than in Shed 3a but are machine-sawn, indicative more of their late date.

5.6 Barn 4

Barn 4 is one of the oldest buildings within the group, contemporary with Barn 3, though with some possibly earlier structural components. It was built as a semi-aisled barn (short 1.4m-wide aisle to the east) c.1600 (Appendix 1). It was probably built the full seven bays long, though there is evidence to suggest it was initially a five-bay barn extended by two bays.

Barn 4 and the workshop area (Buildings 5 & 6) are set on a NNE to SSW alignment at odds with the laying out of the other two historic buildings, Dovecote 1 and Barn 3 (fig. 2). It is suggested by the architect (Peter Newson pers. comm.) that its location along the eastern side of the yard was to catch the prevailing wind for winnowing the grain. This side is now blocked by a screen of substantial evergreens on the east side of the complex, which would appear to support this view.

Much historic fabric has been lost in the barn and it was accepted in the assessment that the building would benefit from closer analysis, but also accepted that perhaps too much of the fabric had already been removed to adequately understand the structure (Appendix 1). However, since the structure was stripped-out, more appears to survive than was first thought. Over the years the aisle and roof were rebuilt and large areas of framing removed on the west side, along with a porch, absent from the cartographic record. The latter is likely to have occurred when Shed 5 was constructed in the early 20th century, opening up this side to form one unit. During the Assessment phase in 2004, Buildings 4-6 were actively used as workshops by Villiers Bros, designers and engineers. A modern first floor had been added, as well as stairs and various modern partitions that obscured much of the frame. As a working unit housed in cramped surroundings clearly not designed for this use, and with machinery, clutter and general storage requirements, the structure was difficult to record and interpret. Since then, the barn was cleared out and, subsequently, during the monitoring works, Building 5 removed, which enabled a better view of the external studwork. The following descriptions use photographic plates drawn from both phases of preparatory work to the barn.

External description

The remaining three walls are timber-framed and clad in weatherboarding above a 0.40-0.75m high brick plinth, rising against the natural slope to the north. The plinth is made of red bricks laid in English bond whose size is conducive to 19th century forms (Ryan 1996), but slightly smaller and possibly earlier at the north end. Gables are sited on the north and south ends, and the roof is rebuilt to a lower pitch of 40° about ten degrees less than original and is now covered in modern pantiles.

The east side elevation (plate 17 & 18) faces away from the yard and comprises a raised and largely-rebuilt aisle, carried out in the modern period. Modern wooden casement windows have been inserted at the south end around the 'plant room' extension (fig. 13) and double loading doors are situated off-centre on the third bay, which originally housed cart doors for wagons (plate 17). Beyond this is a long section of relatively modern boarding that covers

areas of modern studwork as well as an original wall plate and associated timbers in an area boarded up during the assessment. The fire exit close to the northern end occupies an earlier doorway set within the remains of half-boarding/lime plaster that suggests the exterior was treated this way throughout (plate 18).

There is the suggestion of a small blocked pitching hatch in the north gable (plate 18) but otherwise no other features of note and none of the earlier covering visible on the east side beneath the weatherboard.

Modern doors have been inserted into the frame on the southern elevation and the boarding appears more recent (plate 17). No other historic features are apparent.

Access to the western elevation was severely hampered during the assessment phase by the workshop (Buildings 5 & 6). The only weatherboarding to survive on this side is above Building 5 and the inserted roofline can be seen in plate 19 as a wooden plate attached to the frame. The exposed upper register remains *in situ* except for the two northern bays this side that are largely rebuilt with modern timbers (plate 19, left). The pattern is clear, and more consistent than Barn 3, of fairly stout studs and primary bracing falling to the centre of each bay. Unfortunately, all the framing on the lower register is lost, but empty pegholes clearly show the locations of studs in line with those above. More is described in the internal description. The third bay from the south is the midstrey and part of the plinth wall to its porch was found in preliminary works (fig. 13, plate 27), which was probably an original feature.

Internal Description

Inside (plates 20 & 21), the main structure comprises five 4.2m bays, relatively wide given the size of the barn. The midstrey, which is usually wider than the other bays to admit harvest carts is only 3.9m-wide (fig. 12). The two northern bays, although not consistent in size, are noticeably shorter than the rest at 2.6 and 3.1m, suggesting this part was added in a separate phase, though there is little evidence to support this. Part of a studwork partition wall remains along the line of truss T 3 in figure 13 and plate 22. The lower register is absent but contains sockets for a central stud, arch bracing and studwork. Much of the upper register is rebuilt with thinner studs, which extend into the aisle, providing the only evidence of the original roof slope (plate 21, fig. 14). A fair-face mark is scored across the southern face of the tie beam (plate 23). The top face and soffit of the T7 tie beam have sockets for removed timbers, but none are present on the wall posts either side to suggest there was a partition here, indicating another reused timber.

The floor slopes downwards towards the north and is formed in concrete, as are the pads on which the bay posts stand. This will have disturbed the threshing floor and internal features.

Much of the main framing remains for the barn and although the aisle to the east is largely rebuilt, there is enough surviving of to replicate its original form in figure 14. There are a higher percentage of reused timbers than in Barn 3.

The main framing has c.18cm-wide bay posts with gradually-swelling jowls and slightly-curved braces double-pegged to the tie beams that are strapped to the wall plates (plates 20 & 22). To the north of the midstrey, the bracing has been removed and in T2 (fig. 13) replaced with cruder hedgerow-derived versions (plate 24, Appendix 1).

Wall plates either side are connected by face halved and bladed scarf joints, typical of post-medieval structures, resting on each of the bay posts (plate 21, left), as in Barn 3. The only exception is just on the east side around truss T4 where the wall plate is connected by an edged-halved and bridle-butted scarf joint, more common in the medieval period (plate 25). The intriguing combination of these two joints suggests the building was constructed c.1600 (Appendix 1).

Well preserved, good quality arcading remains along the entire length of the building and is marked from 1 to 14 (on the inside of the aisle) arguing for construction from north to south, and consistent with the directions of the scarf joints. This strongly suggests the barn was built in one episode. An empty mortice for a large central stud, recorded on the eastern (aisle-side) wall plate soffit between trusses T2 and T3 is reused from another structure, as is the tie beam in trusses T4 and T7.

Within the aisle space, all except one of the aisle ties (T4) remain, most of which serve no structural purpose in the rebuild. The only ones still properly connected to wall plates are at the north end, T1-T3, which are slightly lodged over the plate (fig. 13, plate 21). A possible aisle sole plate is embedded in the concrete floor around the T7 post (plate 21) and elsewhere slots occur in the aisle wall plate where they are missing (plate 21).

Only the three northern bays along the eastern aisle wall are original (plate 21); the other bays were rebuilt when the aisle was raised by 0.7m with the addition of machine-sawn studs during the roof replacement phase. The remaining wall plate at the north end is crudely connected using an un-pegged lap joint (plate 21) rather than properly scarfed, which is unusual given the good quality joinery to the arcade plates.

Original framing was primary-braced, falling to the centre in each bay, but rarely surviving in the lower registers. Despite being perceived as similar in date, the studwork in Barn 4 is to a lower standard than in Barn 3, with a higher level of reused and replaced timbers. As a guide, stud dimensions vary from a fairly stout c.14 x 10cm to around 10cm for the thinner later timbers.

The entire lower register has been removed on the western side but there is plenty of evidence for primary-bracing, though the pegging is not as prevalent as Barn 3. The two northern bays on this side have been rebuilt by inserting a second midrail above the first and shorter, often machine sawn studs (plate 19, far left). Large mortice holes on the earlier mid-rails indicate re-use and there are a few chiselled carpenter's marks that may be associated with this or an earlier structure, but do not provide a recognisable sequence. The other bays provide a great deal more information, despite the removal of the lower register. Stout studwork is arranged alongside primary bracing with few replacement timbers. Some remnants of weatherboarding survive at the top of the southern two bays, exposed during the assessment phase, with only a few carpenter's marks (Letch 2004). Cut marks for wattles shows the use of wattle and daub on the building this side (at least).

Lack of studwork on the fifth bay, between trusses 5 & 6, indicated a former western porch, built facing into the yard and built with the barn. A small mechanical excavator was used by the contractors to find the line of the porch beneath the concrete floor of Shed 5 next door. A plinth wall was found to extend 3.3m in front of the barn (fig. 12).

The southern gable was partly-rebuilt in the 20th century when the doors were inserted (plate 19) and the existing primary timbers cut back and retained. The northern end has been less affected, but has some fairly poor studwork, stabilised by some modern timbers added when the lower part of the interior was plastered this end. There are remains of daub in between the studs (plate 26).

The roof has been completely rebuilt in pine above the tie beams using modern rafters, purlins and collars. Empty pegged mortice holes on the tie beams indicate a raking queen strut roof like that seen in Barn 3, but on a smaller scale (fig. 14).

5.7 Building 5

This structure was probably built in the 20th century (post-1915, fig. 8) as in-fill between Barn 4 and Building 6, to which it is also attached. In recent times it formed part of the Villiers

workshops, but during the current survey was vacant and cleared of machinery seen in the assessment.

The only exposed ends are those to the south and north, comprising machine-sawn pre-formed timber 'shed-type' frames. The former is clad in weatherboarding, the latter finished in cement render (plate 18). Both ends have double dispatching doors. The roof is modern, has a corrugated iron covering and slopes at 20° up from west to east. The plinth is built in stretcher-bonded Fletton bricks.

5.8 Building 6

This was probably built in the early 20th century after the large cattle shed on the east side of the yard was taken down. Similar to other site structures, it has a weatherboarded exterior and gabled pantile roof, set on a 30° pitch. The plinth is built from red brick in a mixture of Flemish and stretcher bond. Double dispatching doors are positioned either end, those to the north enclosed by cement render (plate 18).

The eastern elevation, located within Building 5, is weatherboarded and is clearly earlier in date than the lean-to (plate 27). The western elevation (plate 28) has central dispatching doors and several blocked windows that appear to have once had vertically-sliding shutters, possibly for ventilation (for a cow shed?). Where cladding has fallen at the north end, the frame is exposed, showing thin studs 50mm wide and machine-sawn primary bracing, consistent with its later date. A sequence of chiselled carpenter's marks was recorded from the north-west end, beginning on the corner post at 11 and including both studs and bracing up to 15 (Letch 2004). Further to the south the sequence 25-37 was recorded. Voids in between are filled with a brick and cement infilling, similar to Barn 3, acting as a form of insulation.

Internally there are eleven short bays represented by quite complicated double A-framed roof trusses sat upon short ties and stabilised by long straight braces, with king post and cross-brace (plate 18). Its construction and size suggests this may have been designed as a milking shed.

5.9 Shed 7

Building 7 was constructed in the early 19th century as a gabled semi-open-sided linear range facing pasture land to the west, beside the river (fig 5). Open-side structures are commonly associated with livestock or farm carts. There was a porch or lean-to towards the north and another structure, perhaps another open shed, built on the northern gable to

enclose the yard on this side (figs 5-8). Building 7 was extended in the late 19th century with the addition of Building 8, part of the current farm offices.

The structure stands on the western side of the farmyard and was used during the assessment stage as part of the farm offices and the main part as a function room, with murals on the walls, seating and various fixtures and fittings.

External Description

No sign of the earlier porch/lean-to may be seen on the western elevation as the front has been infilled in blockwork and rendered-over in cement and painted (plate 30). Modern iron-framed casement windows have been inserted along with a plywood door, approached by concrete steps.

The eastern elevation is accessed by a corridor flanked by Workshop 10 that completely encloses this side. The elevation retains pine and elm weatherboarding over a primary-braced sawn elm frame apart from the final two bays to the north have been rebuilt in concrete blockwork and have iron-framed windows (plate 31), contemporary with those on the other side. Positioned off-centre are two doors into the shed, one a large glazed carriage door and the other a simple ledged braced and battened door (fig. 15; plate 30, left), which are unlikely to be original features. A more likely original door stands towards the north end, next to the rebuilt part (plate 31). Between the doors are window apertures that suggest a likely pattern of one window per bay (plate 31).

The north elevation is mainly weatherboarded but the east side has been rebuilt in blockwork that supports a protruding metal flue (plate 30). The south end was lost when new partitions were built for kitchens, toilets, etc but appears to survive above ceiling level.

Internal Description

Internally there are six tie beams, corresponding to five bays, within the main 'Hall' area (plates 32 & 33), labelled in figure 15 as T1-T6. The layout of the south end has been partitioned to provide cooking, ?meeting and toilet facilities and a false ceiling inserted that obscures the other tie beams and evidence of any earlier partitions at this end. Although the south end wall is gone, a boxed beam at this end indicates the extent of the original building (fig. 15), making a further three bays and bringing the original length to eight

The trusses are light and thin, composed of waney-edged elm (Appendix 1), with the members nailed into slight recesses. Truss 6 displays the original roof construction: queen

posts linked by twin central vee struts (fig. 16). The side-lapped nailed board braces to the bay posts/tie beams are secondary, added to the trusses when the roof was tiled. Trusses 3 and 4 have small soffit mortices (70mm wide) for stud partitions with space for a central doorway leading from the likely location of the porch (fig. 15). Chiselled carpenter's marks on the trusses show the structure was erected from north to south, but the fact they begin at truss 3 suggests the two northern bays were added afterwards (fig. 15).

Timber framing is consistently primary-braced in quite thin timbers, the same throughout. The wall plates are connected by face halved and bladed scarf joints positioned mid-way between the trusses. Studwork is occasionally pegged to the plates. Much of the west side that has been infilled was probably built open-sided, with the two north bays boarded-out (plate 33) as a loose box. The roof purlins are clasped by the purlins on each truss.

5.10 Farm Offices 8

This brick-built structure was added onto the south end of Barn 7 in the late 19th century and essentially forms the southern end to Building 7 (plate 34). It blends in well, in fact the join between the two is difficult to see. Its last use was as farm offices, alongside part of building 11, which is attached to the east, around the former yard. The interior has been modernised and there are no original fixtures or fittings.

5.11 Modern Structures 9-14

These are late in date and only briefly described to complete the record.

Workshops 9 and 10

One large post-war industrial workshop occupies much of the former farmyard, split into two and most recently used by 'Colourcraft' to the south and a car workshop to the north (plate 28, left).

The structure is constructed entirely in modern materials: blockwork and corrugated iron walls and corrugated asbestos sheeting to the roof, supported on angled iron roof trusses. However, the southern wall of Building 10 incorporates the remnants of the mid 19th century cattle shed seen in figure 6 and other historic maps, whose other side can be seen inside Vehicle Store 11 (plate 34).

At the north end, Workshop 9 is built up against Barn 2 and their proximity has caused damp to be trapped within the older barn wall.

Farm Offices/Vehicle Store 11

This building comprises a semi-industrial building of post-1960s construction partly used as the farm office and partly for private use by the Hall. Externally it is gable both ends with a cement rendered exterior and metal casement windows matching the appearance of buildings 7 and 8 (plate 35). Inside, an angle-iron frame supports the corrugated iron roof and the southern end of an earlier shed can be seen.

Workshop 12

A modern, square double-pile large agricultural building latterly used by Johnstrutt (sic) to design and build pre-fabricated buildings, built from concrete, weatherboard and corrugated iron sheeting (plate 36).

Grain Store 13

This comprises two structures, a long Dutch barn constructed from corrugated iron on a steel frame containing the conveyor that fed grain through from Barn 3 to grain silos inside. An adjacent weatherboarded building transferred grain onto lorries by a grain hopper at the front (plate 36). Inside are components for grain storage, processing and movement. The most important area is the partly-exposed timbers to the east end wall of Barn 3, onto which the store is built onto (plate 10)

Grain Store 14

An extensive modern grain store built from corrugated asbestos on a pre-fabricated steel frame (plate 36).

6.0 ARCHAEOLOGICAL MONITORING

Two areas were excavated under archaeological supervision after the more modern structures had been demolished and the historic barns stripped back to their timber frames. These consisted of foul water trenches around the perimeter of the yard (T1) and a large area of removed contaminated ground behind Barn 3 (T2), both shown in figure 17. No archaeological deposits or features were present and no finds recovered.

Trench 1 was excavated to a depth of 2.4m below existing ground level at the higher south end and 1.3m at the lower north end. Trench width also varied (fig. 17). Underneath the concrete yard was a thick layer of disturbed and contaminated (diesel, etc) gravel to a depth of 0.7m, with clean natural gravel/sand below. Further down the slope this deposit increased

to 1m along the side of Barn 3, with a lot of modern debris (brick, tarmac, etc) from former buildings/surfaces, as well as timbers and remains of posts. These probably represent remains of the late Victorian enclosed cattle yard mixed in with other modern materials as bedding for the concrete yard.

Trench 2 formed a large area between Barn 3 and the river (fig. 17) dug to 0.6m to clear contaminated ground. The only natural soil was found along the southern edge, where it is clay, the change in subsoils occurring beneath the barn. The rest of the area had been built-up in a mixture of modern dumped materials (concrete, rubble, etc) as a basis for the trackway and elevate the ground level beside the river. The exact depth is unknown at this end.

The building contractor reported that the ground was disturbed to a depth of 0.60m inside Barn 4, associated with the modern concrete floor.

No monitoring works were carried out to the east of the yard, where the ground level is to be raised for the new houses.

7.0 PHASING AND DISCUSSION

From analysis of cartographic sources and of the built fabric, eight phases of farm development have been broadly interpreted at Fyfield Hall (fig. 2) that are broadly consistent with prevailing fortunes and trends in agriculture. Whilst every effort has been made, the lack of functional fixtures and fittings means it is difficult to interpret the functions of some of the 19th-century buildings. For the earlier structures, phasing is largely based on the timber and joinery detailing highlighted in Appendix 1. Later structures are phased from cartographic information.

Phase 1: Early-mid 16th century

The first phase belongs solely to Dovecote 1, built in the early-mid 16th century, with heavy timbers, jowled posts and tension braces, the latter of which are not found on any of the other farm buildings. The interior was open with plastered walls, and the roof gabled on either end with apertures to allow the birds to fly in and out. Pigeons and doves were reared for their eggs and meat, and their dung used as a fertiliser. The dovecote was also a sign of status in feudal society, although the environment into which this building belonged is unknown without contemporary buildings or maps.

Phase 2: c.1600

Barns 3 and 4 were built around 1600, based on their joinery and constructional features, at the beginning of the agrarian revolution. On a basic level, they have common characteristics; both have primary-braced framing, curved braces and queen-strut roof frames. However, although the barns are stylistically similar there are conflicting differences in their joinery and build quality that makes it difficult to properly understand their phasing to one another.

Barn 3 is a large well-built twin-porched structure built during a period of prosperity. It was originally finished with half-panelled weatherboard and lath and daub walls that would have been an impressive sight in the contemporary landscape, reflective of the status of an important building in clear view of the Hall. The porches were added in a separate episode soon after construction but the large cartdoors at the front were not copied at the back, meaning carts could only enter through the yard. Internally, the east end bay was partitioned off and probably held a hayloft. It is likely therefore the barn had mixed use, for both livestock and crop storage, perhaps with the emphasis on animals.

Barn 4 has a less cohesive character that makes it a more complex and in some ways compelling building. It is also incomplete, having lost its roof and large areas of walling. The barn was built with a single aisle on the eastern side and an external treatment of wattle and daub. It had a porch facing the yard with cartdoors at the back, useful for bringing harvest carts through for storage and winter threshing. Indeed, its location against the prevailing wind made the barn ideal for threshing, though the threshing floor does not survive. One anomaly is that the two northern bays (partitioned off from the rest of the barn) were built shorter than the other five, which would suggest they were added later. This is borne out by the location of the midstrey and former porch, usually positioned centrally, whose position is more suited to a five-bayed rather than seven-bay structure, i.e. built onto the fourth rather than the third bay (fig. 13). However, the consistent carpenter's marks along the aisle show the barn was built in one phase, and there is no evidence at all for the aisle being added separately.

Exactly when the barn was erected remains unclear, for although it contains a single medieval scarf joint, the timbers used in its construction are generally thinner, cruder and often reused from other buildings which would argue for a later date. As a structure it lacks the grand proportions and quality of the main barn and on balance it is likely that Barn 3 is the earlier of the two, and both more likely to be on the later side of c.1600, with the main barn built in contemporary style as a major part of the farm and Barn 4 assembled using throw-backs to the previous style and re-used timbers.

Phase 3: 17th century

The 17th century 'pre-improvement' farm was well laid out with the two barns forming a slightly acutely-angled L-shape around the stock yard. Both barns had storage areas for hay, grains and straw and probably animals. The sheer size of Barn 3 reflects the scale of the farming estate and importance of the Hall at this time.

In the later 17th century, the dovecote was converted into a granary. The move away from keeping pigeons was not part of any farming trend, although as farming developed and diet improved, they started to be viewed more as a pest (Harvey 1997). The open gables at either end, which the birds used as exit and entry points, were blocked to create a hipped design. A first floor was inserted (the jointing for which provides dating evidence) and the ground floor raised on brick piers, to deter vermin.

Phase 4: Early 19th century (1798-1842)

The first half of the 19th century marks a period of growth (figs. 4 and 5). Several buildings were added to create a clearly-defined yard, open to the south. Whether these were built at the pre-depression height of the Napoleonic boom, at the beginning of the 'golden age,' or at various occasions between is not known. Of these new buildings, discussed more fully in section 5, only Buildings 2 and 7 remain. Barn 2 was added as an extension to the existing barn, while Building 7 was built open-sided, either as a cattle or wagon shed.

Phase 5: Mid-late 19th century (1842-72)

Improvement came in two stages during the latter part of the 19th century. The yard was given over to cattle rearing as part of a mixed farm. This can be seen from the division of the yard and the construction of a central cow shed with access to stock yards either side, part of which remains between Buildings 10 and 11 (fig. 6).

Phase 6: Late 19th century (1872-95)

Between 1872 and 1895, during the depression years when grain prices slumped, the farm concentrated on livestock with the addition of two large covered yards, essentially big cattle sheds for intensive rearing (fig. 7). During the 19th century there was much debate over whether a better animal was produced from an open or covered yard, and it is possible that Barn 4 was incorporated into the yard by opening up the western side to create further accommodation. The southern addition to Barn 7, now Offices 8, was built at this time. Its location and built fabric of brick may suggest it functioned as a milking parlour or for making cheese.

Phase 7: Early 20th century (1895-1915)

The large sheds did not become a permanent feature. In the early part of the 20th century the farm reverted to the open yard system (fig. 8). The western yard was re-created with new divisions and the east yard was partly infilled by Buildings 5 and 6, perhaps forming a large milking parlour (Building 6) and cow house (Barn 4 and Building 5). From the 1915 map (fig. 8) it appears that Sheds 3a and 3b were built at the time between the porches of Barn 3. These replaced earlier less regular outshots dating back to phase 4 (see figs. 4 and 5).

Phase 8: 20th century

During this time, the farm concentrated on grain production rather than livestock rearing, guided by the grain boom after the war and subsidies from the EEC. Large sheds were built to house new and larger machinery (Buildings 8, 9 and 11, possibly 12) and Barns 2 and 3 used to store and process grain, aided by an overhead conveyer that fed between these and the modern Store 13. Recently farming activities have shifted to one of the other estate farms, with the buildings rented out as business units, converted to stables, or used for other purposes by the Hall.

8.0 CONCLUSION

The farm complex at Fyfield Hall has evolved over the past 500 years and contains historic structures of significant architectural and group value, somewhat overshadowed by modern industrial-sized farm buildings that detract from the traditional farming core and view from the Hall. Large parts of wall-framing have been lost in the barns in the process of these later developments, although the adaptation of these structures in recent years has secured their upkeep and survival when they may have otherwise been neglected or even demolished.

Benefiting from its location away from the main area of activity, the Grade II listed dovecote has survived remarkably well and retains original features from its early phase of use. The completeness of the building makes it relatively easy to interpret its development over the past four hundred or so years and it is perhaps the most interesting and important of the historic buildings studied. Barn 3 is an impressive building in its own right and although it has lost some of its structure, remains largely intact. On the other hand, Barn 4 has physically suffered over the years, making the true origins and development of this complex building difficult to understand. Of all the buildings studied this will benefit the most from repair in the appropriate manner. Of the later structures, Building 7 has also been impacted upon by modern developments and its true function within the 19th-century farmyard remains unclear.

Three phases of work have now been carried out and completed. The current works have been able to re-evaluate the structures in their recently redundant state and with more of the historic fabric exposed, able to provide a fuller record that still supports the main conclusions of the earlier work (Letch 2004). In the final stage, monitoring of groundworks around the yard proved negative, showing that any below-ground archaeological deposits within the area have almost certainly been disturbed.

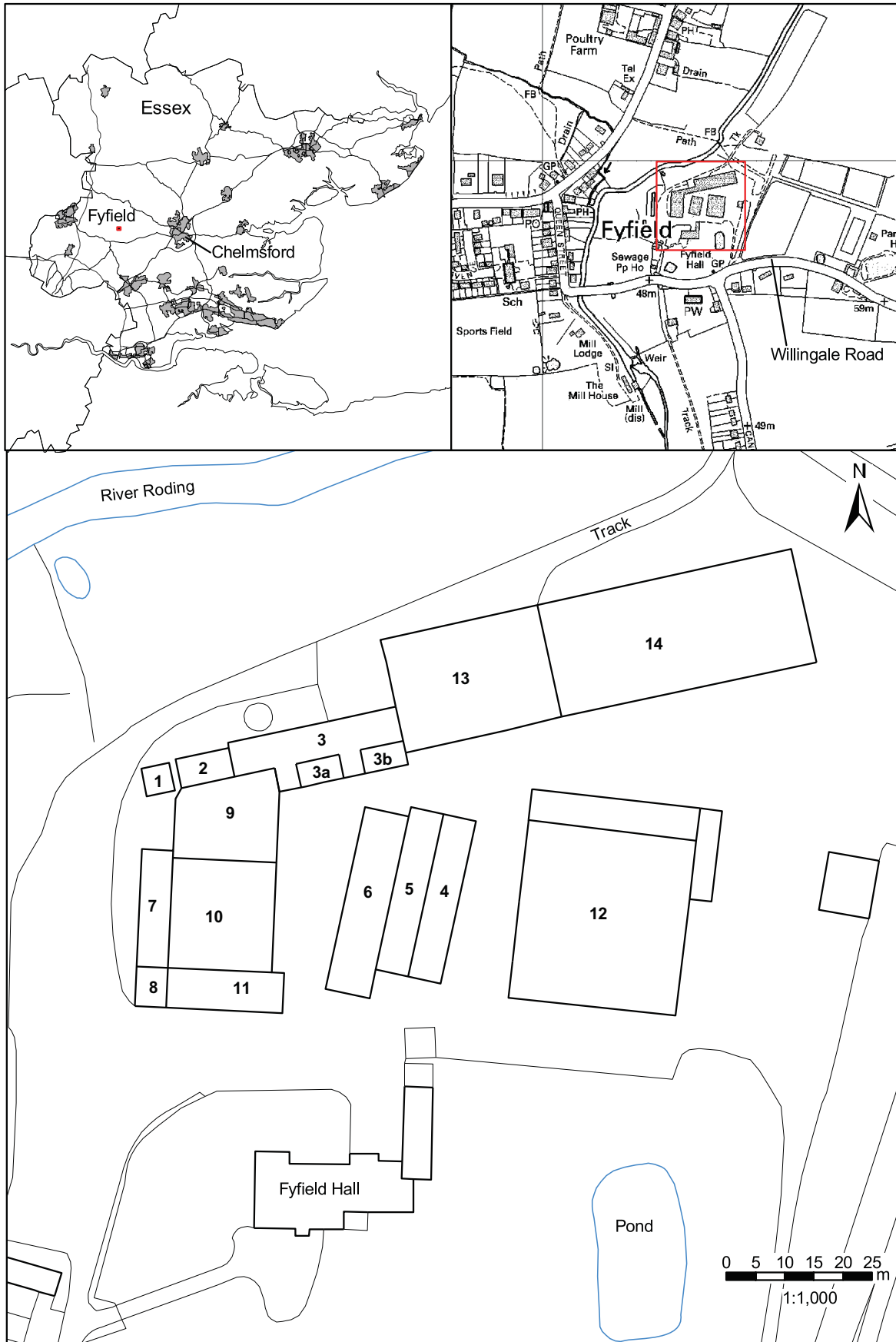
In all this has been a productive investigation into the development of an important post-medieval farmstead that reflects the changes to the farming economy from the beginnings of the agrarian revolution in the 16th century through the Victorian Golden Age up to the modern day, from arable to livestock/dairy, back to arable and then their ultimate incorporation into a vibrant industrial/business setting. Overall, the main buildings form a unique and diverse assembly of interesting and high-status historic structures from the 16th and 17th century farmyard layout, whose presence can once again be appreciated within the setting of Fyfield Hall.

ACKNOWLEDGEMENTS

Site visits, recording and photography were undertaken by the author. Illustrations used in the report were created and redeveloped from existing drawings by the author, Frances Van Keulen and Andrew Lewsey of ECC FAU. The site was monitored on behalf of ECC HEM and the LPA by Pat Connell AND Adam Garwood. Thanks are due to David Cohen of Integra Group for his assistance during the project.

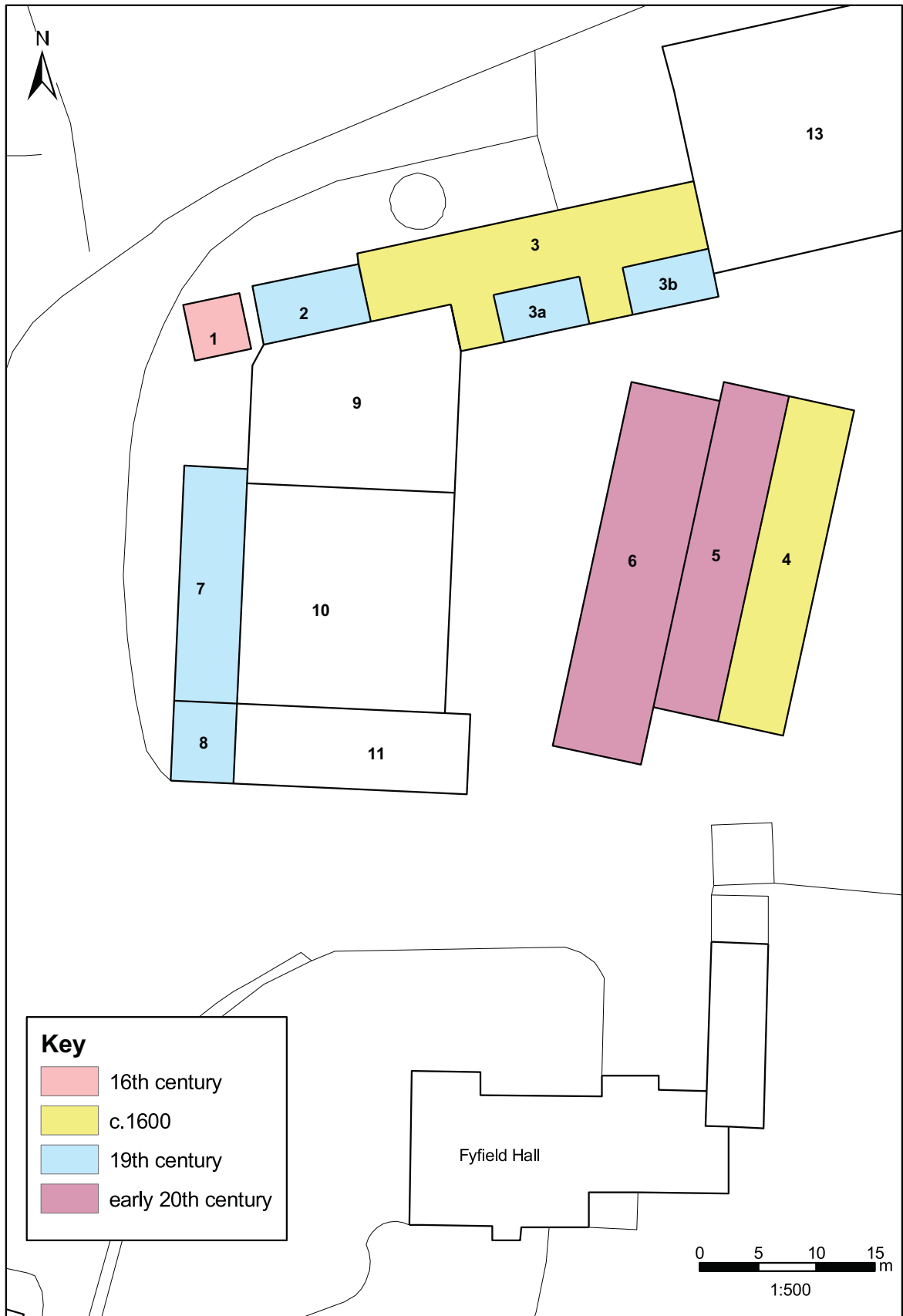
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Fig.1. Site location and block plan



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Fig.2. Phase plan

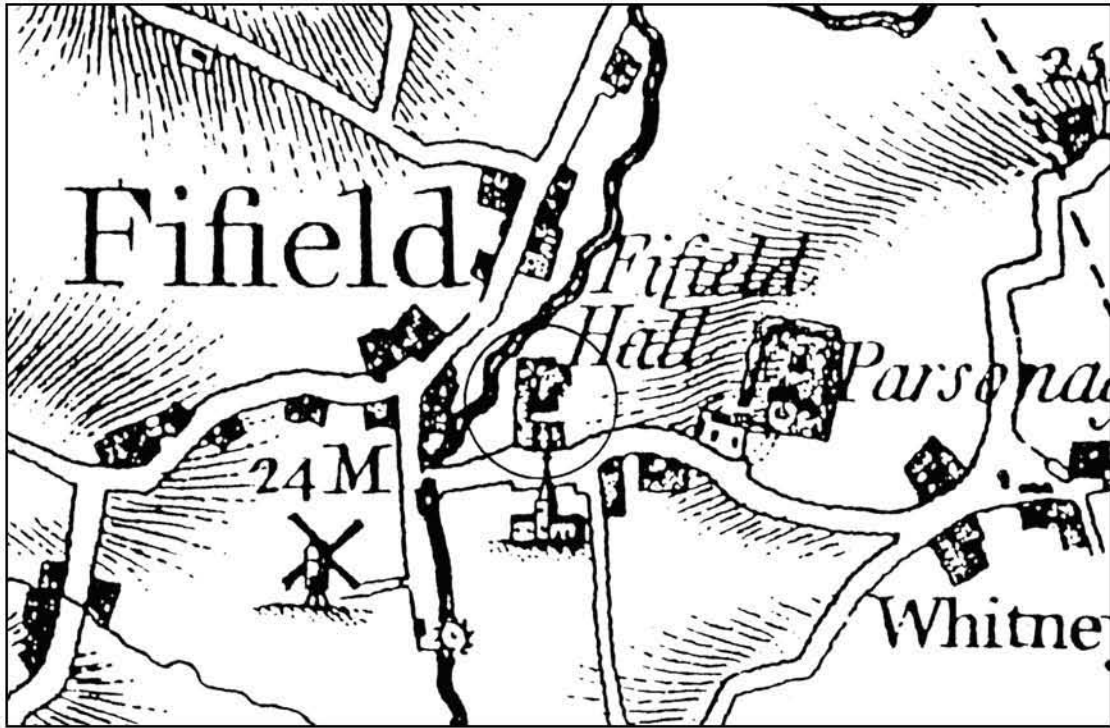


Fig. 3 Chapman and Andre, 1777 (plate XII)



Fig. 4 Map of Fyfield (15.2" to the mile), 1798 (T/M 134/1)

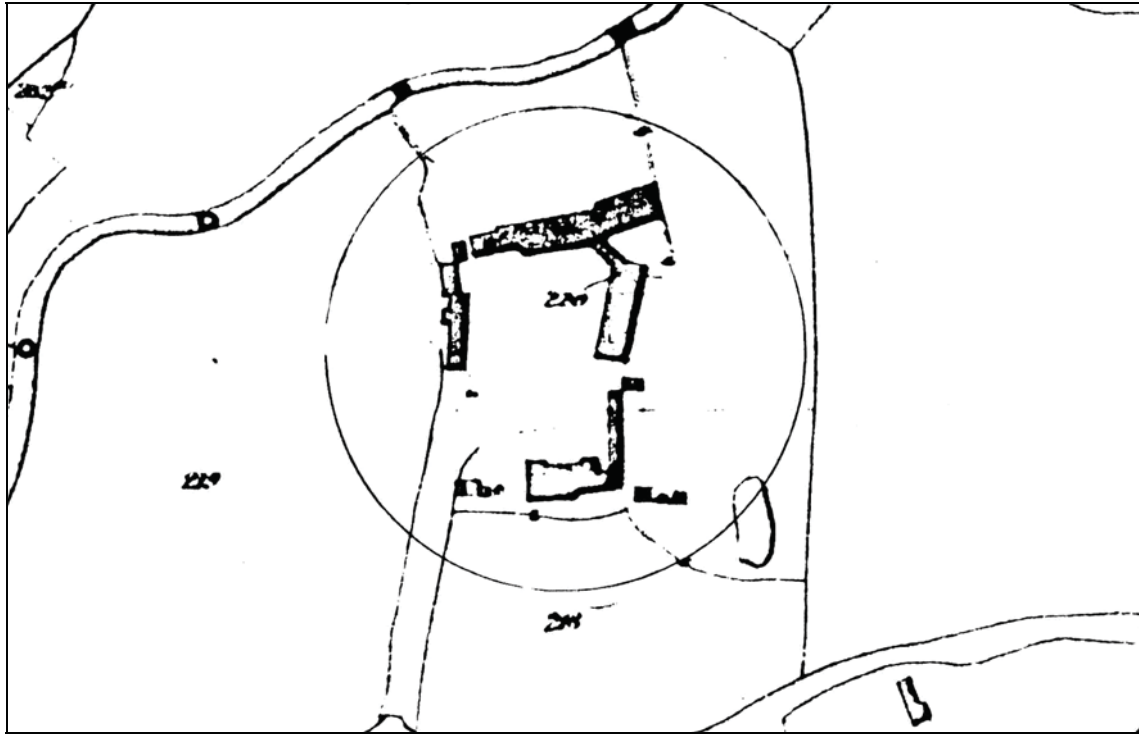


Fig. 5 Tithe map of Fyfield, 1842 (D/CT 148)

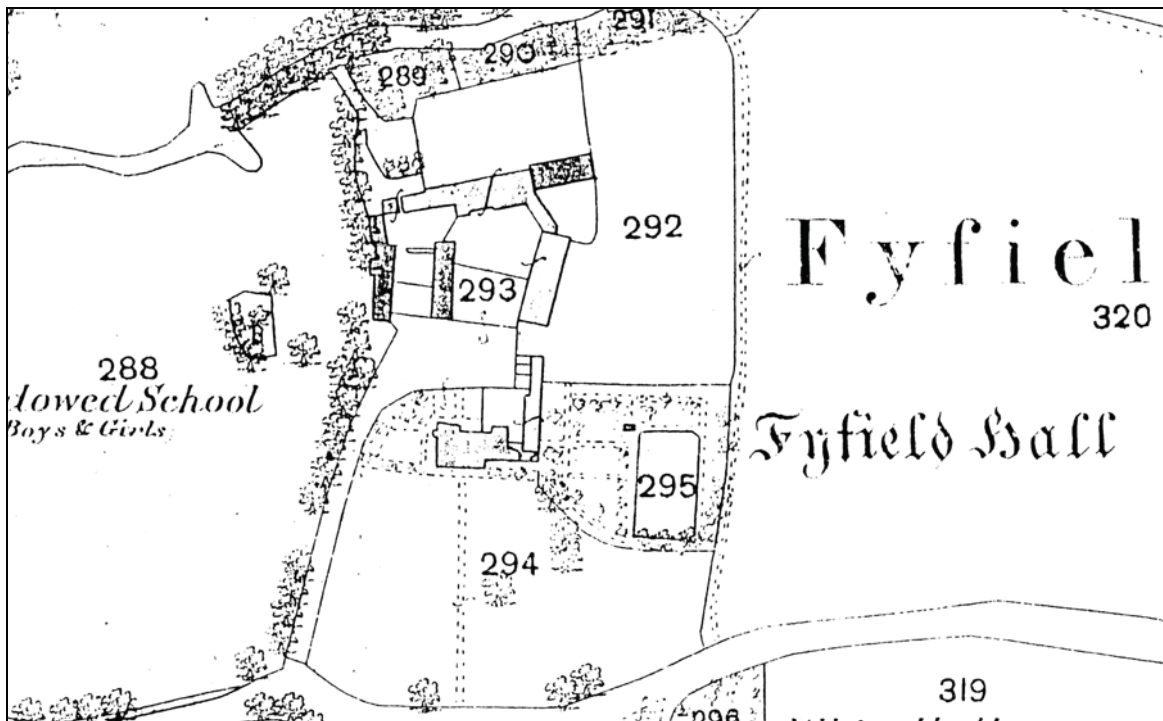


Fig. 6 First Edition 6" OS map, 1878 (surveyed 1872) sheets 51-52

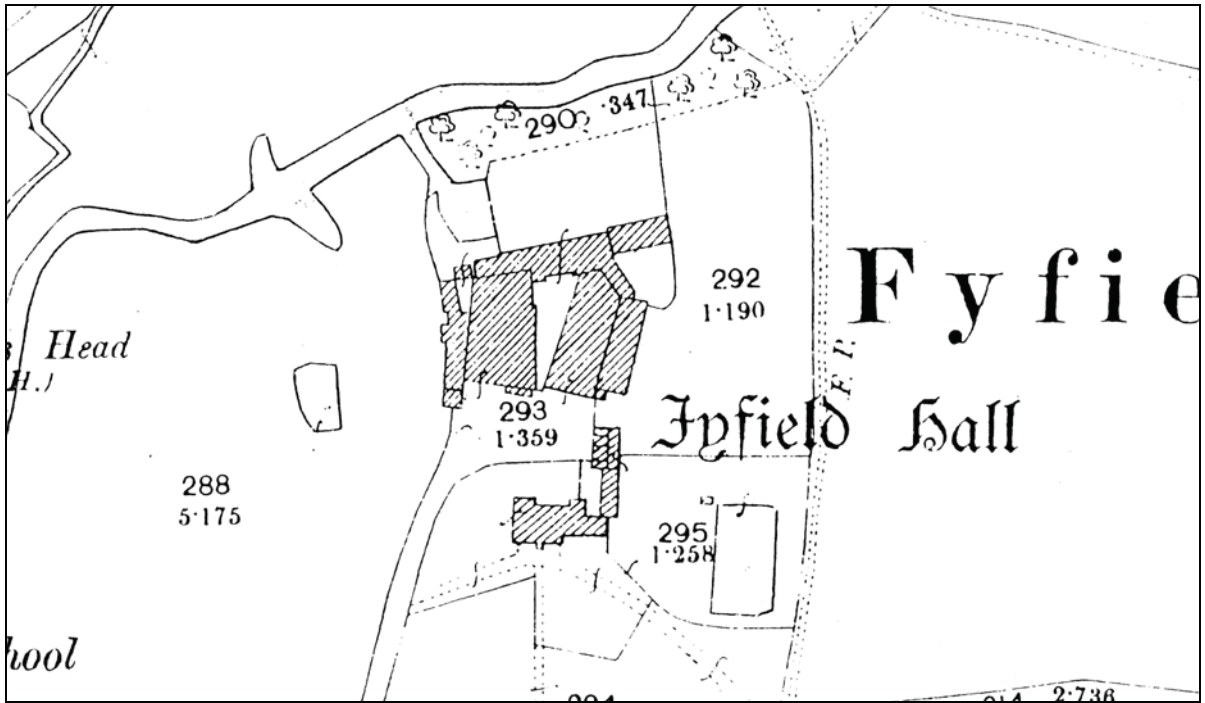


Fig. 7 Second Edition 25" OS map, 1897 (surveyed 1895) sheets 51-52

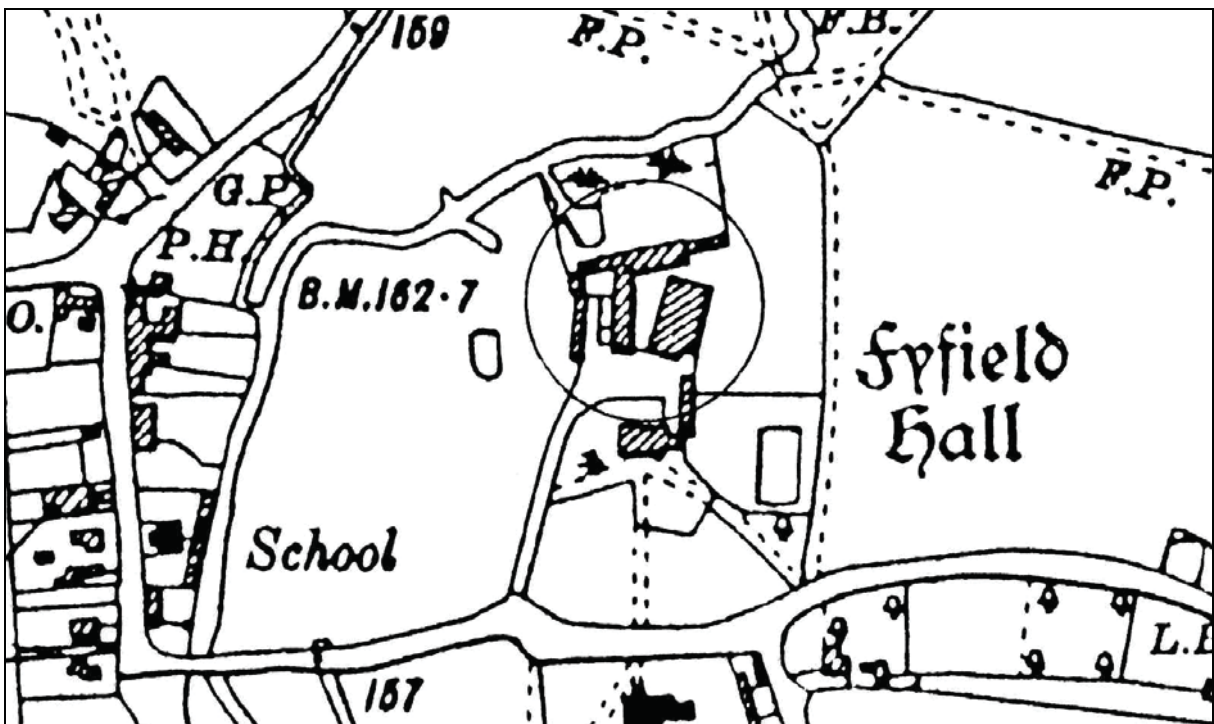


Fig. 8 OS 6" New series, 1915, sheet 53 SW

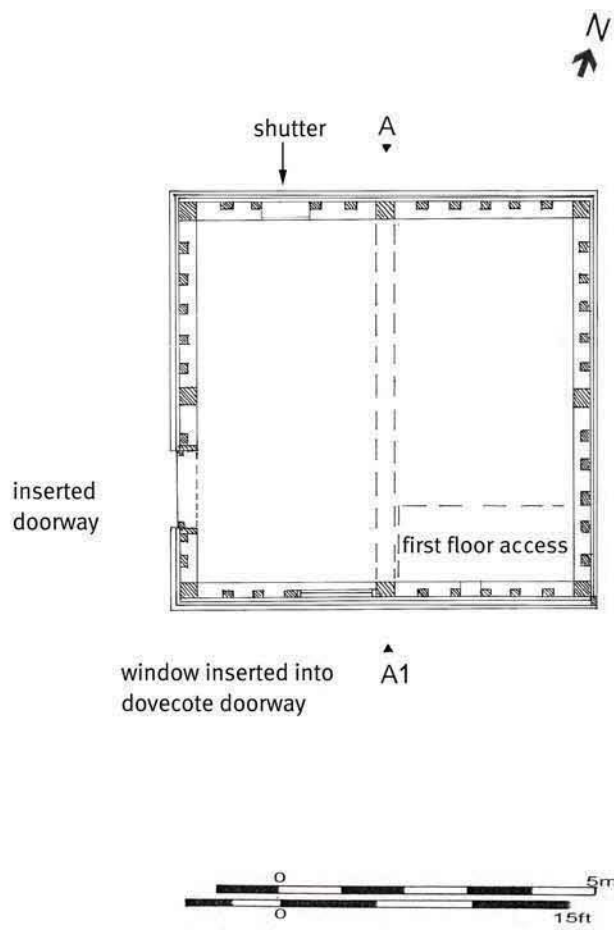
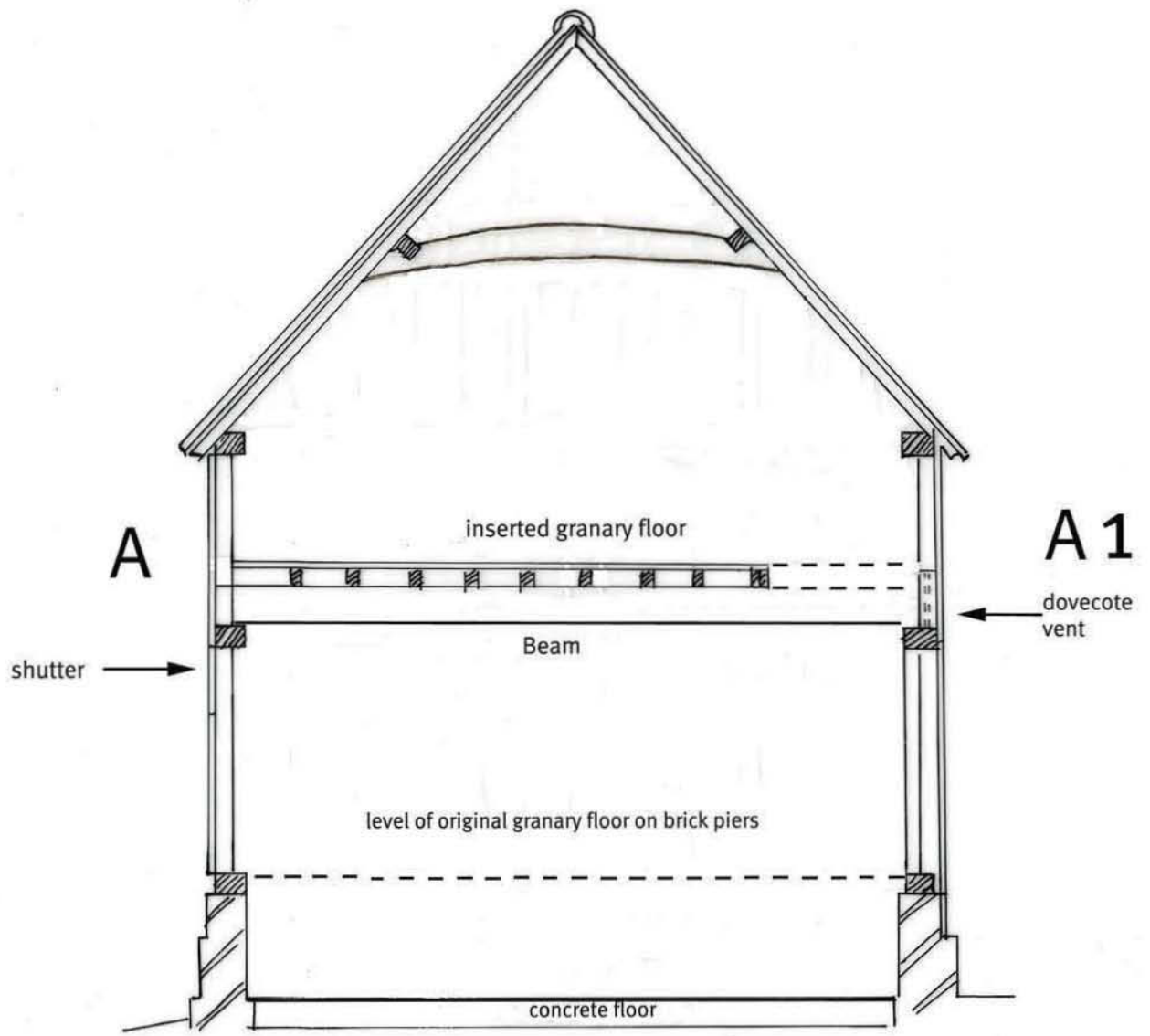


Fig. 9. Ground floor plan of Dovecote 1



Section A-A1



Fig. 10. Section through Dovecote 1

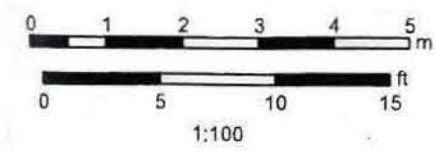
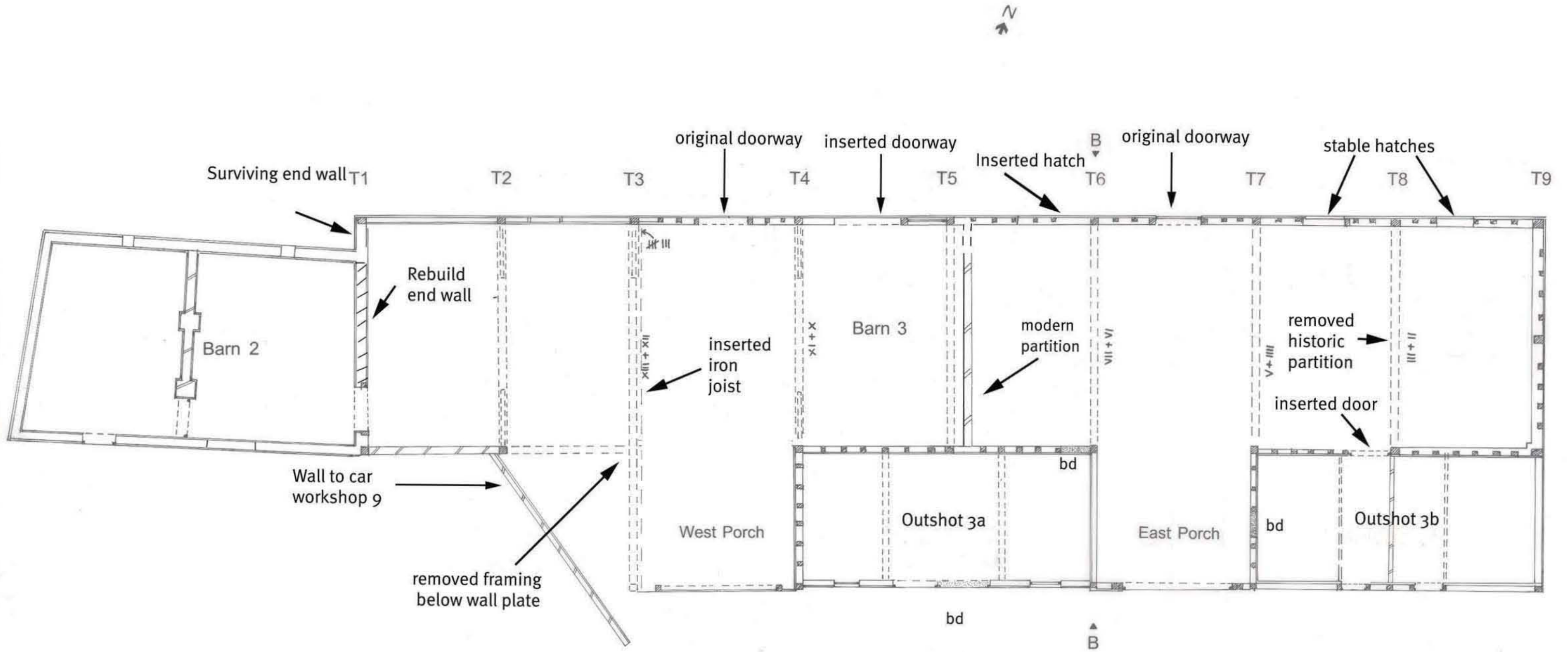


Fig. 11 Plan of Barns 2 and 3

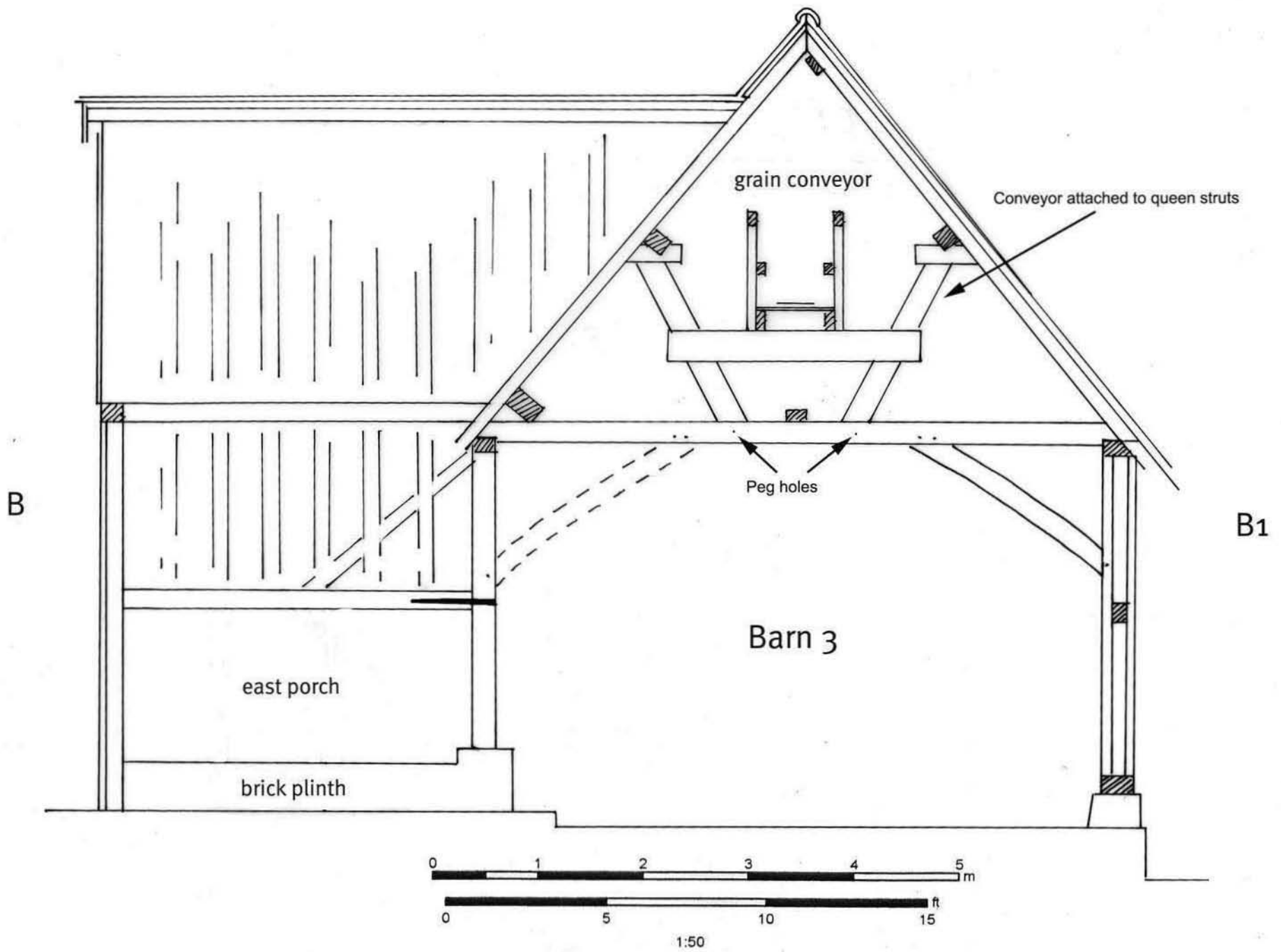


Fig. 12 Section through Barn 3

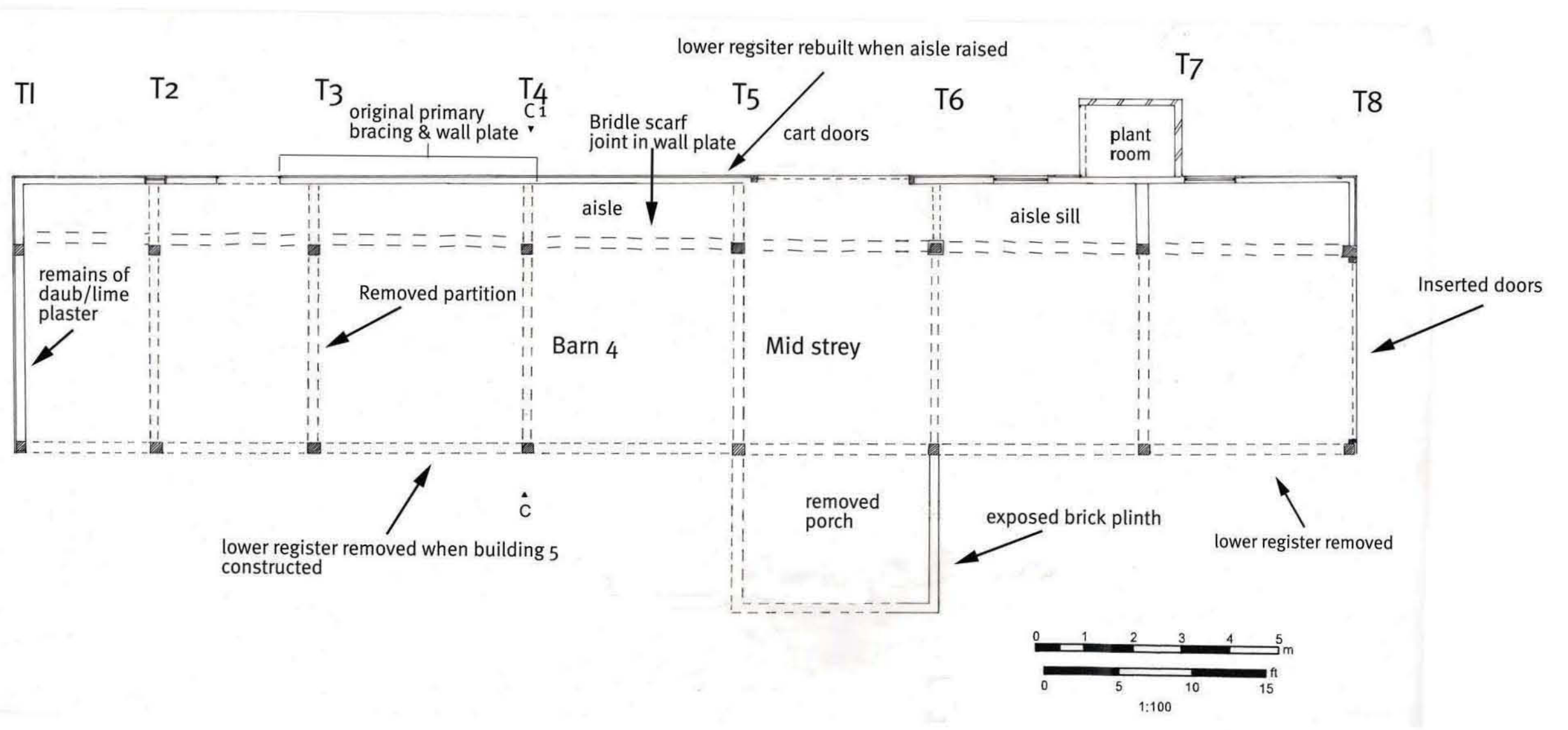


Fig.13 Plan of Barn 4

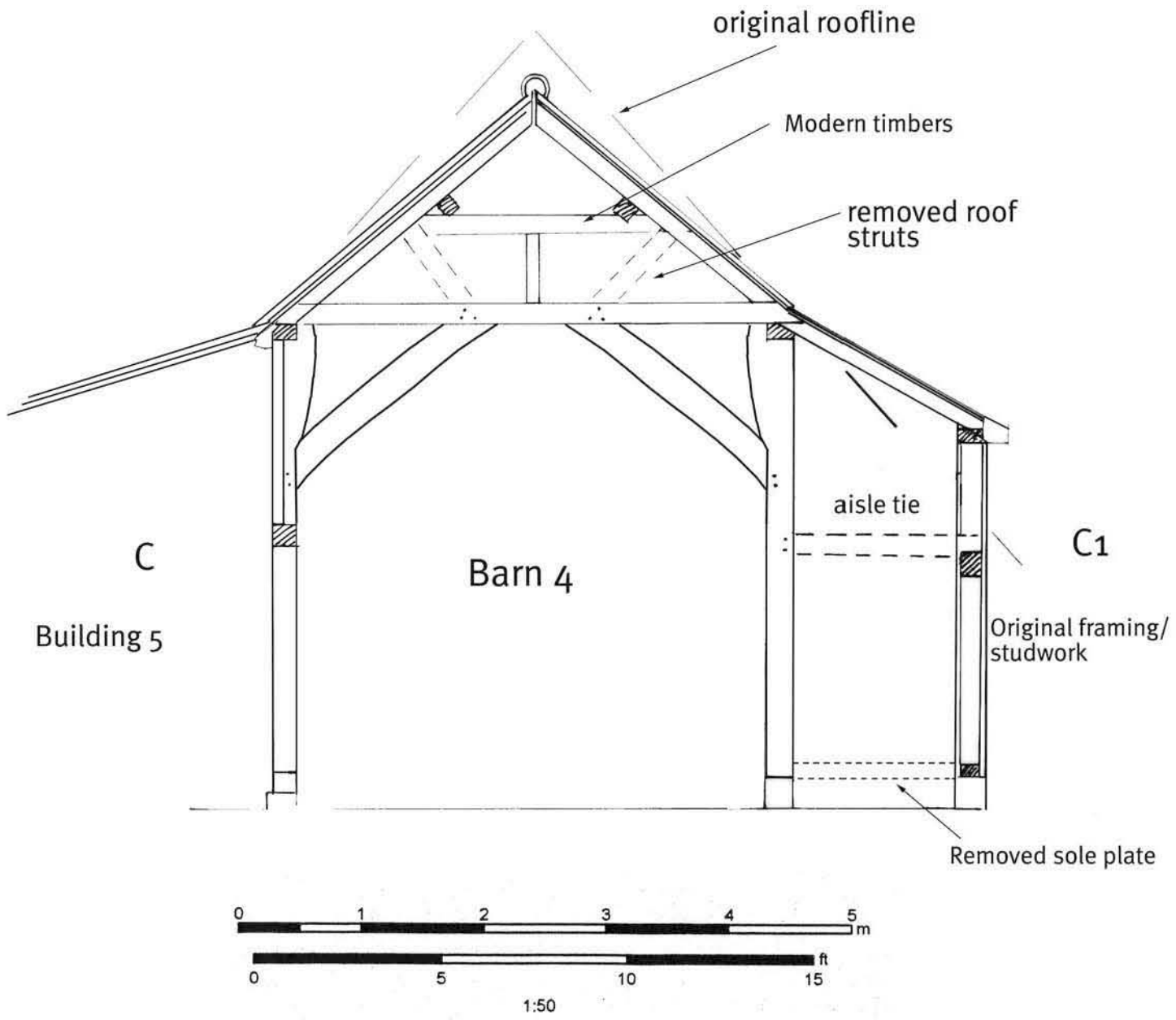


Fig. 14 Section through Barn 4

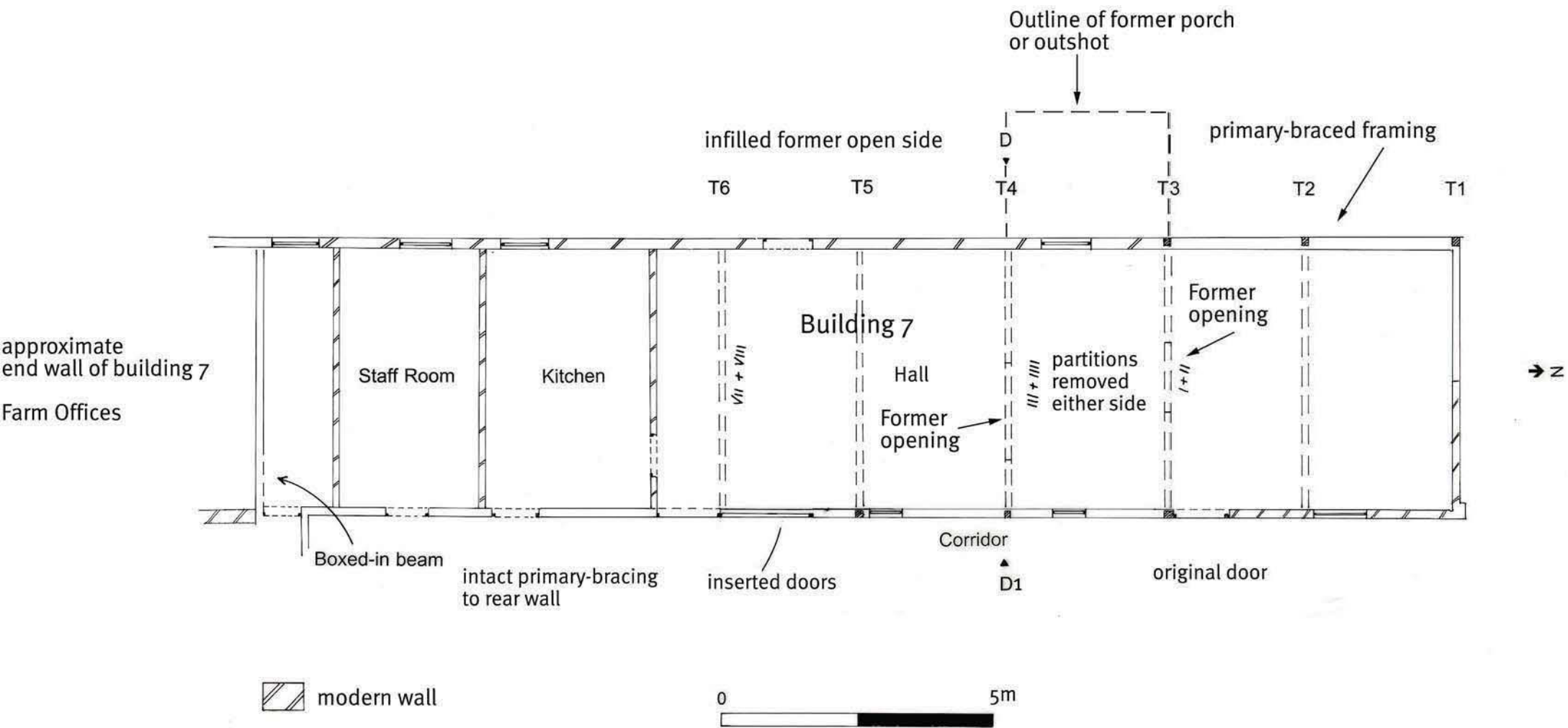


Fig. 15 Floor plan of Building 7

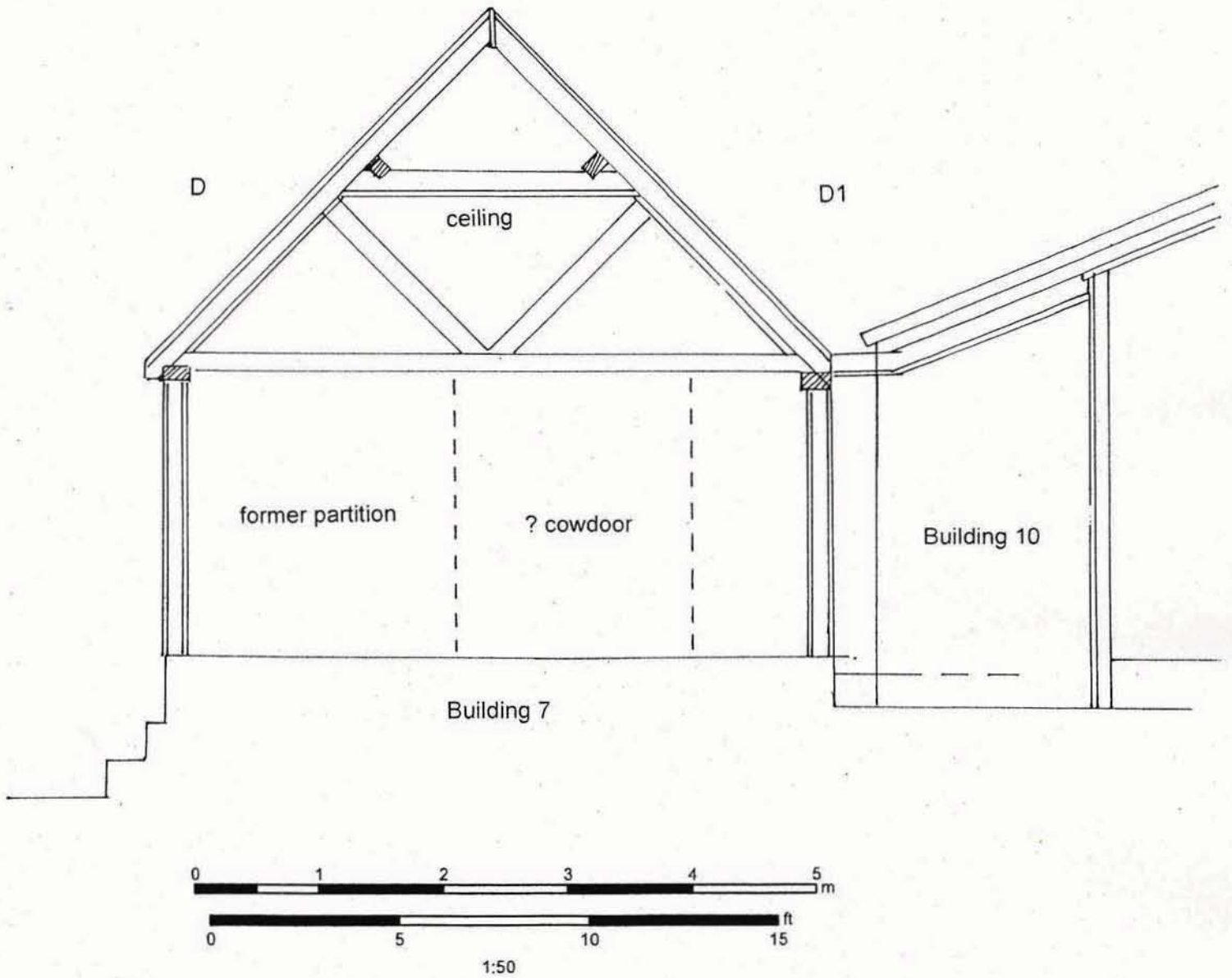
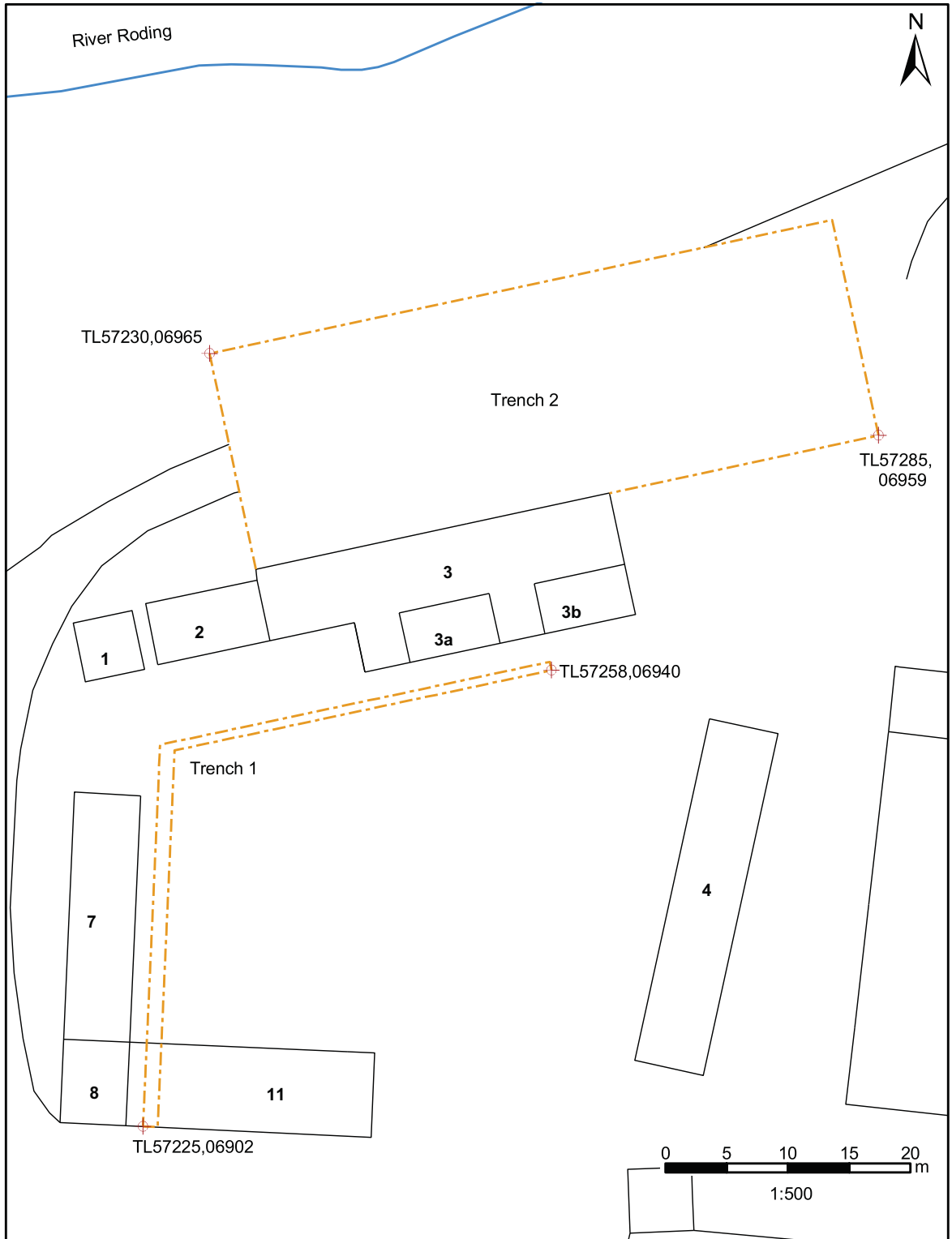


Fig. 16 Section through Building 7



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Fig.17. Areas of archaeological monitoring



Plate 1 Dovecote 1 viewed to north-east

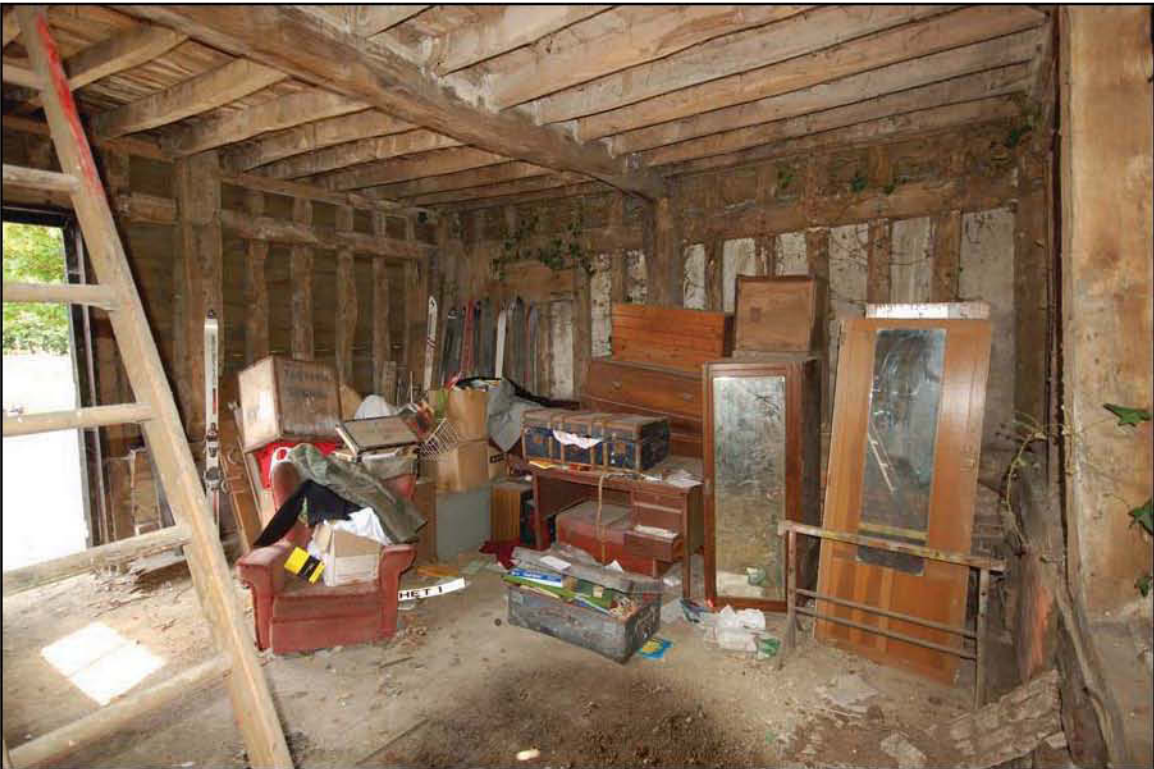


Plate 2 Interior of Dovecote 1 viewed to north



Plate 3 Inserted first floor of Dovecote 1 viewed to north-east



Plate 4 Original Dovecote 1 features: air vent and columbaria pegs



Plate 5 Barn 2 viewed to south east with Dovecote 1 and Barn 3 either side



Plate 6 Barn 2 viewed to north-east after removal of Workshop 9



Plate 7 Interior of Barn 2, viewed to west



Plate 8 Main elevation of Barn 3, viewed from yard



Plate 9 North elevation of Barn 3



Plate 10 East wall of Barn 3 enclosed within Grain Store 13



Plate 11 West side of Barn 3 viewed to west end



Plate 12 West side of Barn 2 viewed to east



Plate 13 East side of Barn 3 viewed to west



Plate 14 East side of Barn 3 viewed to east end



Plate 15 Side entrance to east porch viewed from inside Shed 3b



Plate 16 Interior of Shed 3a viewed toward west porch



Plate 17 Barn 4 viewed to north-west



Plate 18 Barn 4 viewed to south-west



Plate 19 West side of Barn 4 after removal of Building 5



Plate 20 Interior of Barn 4 viewed to north end



Plate 21 Partition and original aisle wall viewed to south in Barn 4



Plate 22 Removed lower register on west side of Barn 4



Plate 23 'Fair face' mark on midrail of north partition



Plate 24 Crude bracing in northern bays



Plate 25 Bridge-scarf joint beside truss 4 viewed towards rebuilt aisle



Plate 26 North wall of Barn 4



Plate 27 Plinth to Barn 4 porch viewed inside Building 5



Plate 28 West elevation of Building 6 (to right) opposite Workshops 9 & 10



Plate 29 Interior of Building 6 viewed to north



Plate 30 Cow shed 7 viewed to south-east



Plate 31 East wall of Shed 7 viewed inside Workshop 10



Plate 32 Interior of Shed 7 viewed to south-east



Plate 33 Interior of Shed 7 viewed to north end



Plate 34 South wall of former cattle shed incorporated in south wall of Workshop 10



Plate 35 Farm Offices and Vehicle Store 8 and 11



Plate 36 View of yard from east

FYFIELD HALL, HISTORIC BUILDINGS IN YARD TO NORTH.

The buildings round the original yard are integrated into a multi-use complex including horse stabling, several engineering workshops, building materials store and general repository. Consequently examination of the historic structures is not easy and the descriptions given are of what was seen in one day.

The buildings comprise Barn 3, essentially aligned E-W and set to the N, Barn 4 sited SE of Barn 3 and approximately aligned N-S, a parallel building, 7, to the W and a separate small structure, 1, (dovecote) in line with 3 at the W end.

BUILDING 1, DOVECOTE

Early - mid C16. Square plan with brick plinth c.1m high. Older brickwork slightly projecting as piers at corners and middle of each side. Original voids now infilled as continuous walling with early C20 bricks stamped MOIE SOLID. Above, timber framed and weather boarded in elm and pine. C20 clay tiled half-hipped roof aligned E-W.

Simple doorway on W side at ground level and robust pintels projecting through weatherboarding on S side for a former doorway set above the plinth. Adjacent, a fixed 2-light casement window.

Interior. Heavy framing, studs set at 40cm centre to centre. Major posts at corners and middle of each side. Exterior upper curved tension braces in each wall from the large jowled corner posts.

The roof is of 2 bays and has an elegant curved and chamfered collar trapping a purlin in each pitch. The truss has a carpenter's chiselled mark IIII. Also there are intermediate collars bird-mouthed to the purlins, possibly secondary insertions together with the light thin-sectioned wind braces set at each corner.

Over the whole interior is a regular rectangular pattern of holes c.17mm diameter set vertically c.28cm centre to centre. This clearly shows the use of the building for doves with the pegs supporting the nest boxes. The roof is now fully closed but the gable ends, now half hipped have a rough reworking of the studs at their tops at collar height where also the apex framing is crudely built. Probably the gables were fully upright with holes at the apex for the birds to enter. There are still areas of lath and daub especially in the E gable where there is now a fixed light and remains of a C20 iron side-hung casement window.

Set down within the framing about 1m from the top of the wall is a floor supported by a N-S heavy bearing joist. Above this the walls are partly horizontally boarded and chaff remains in the boarding and framing interstices. Clearly the building has been used more recently as a granary. The floor bearer is apparently secondary as it has been slid sideways into position within a housing on mid-wall posts. The common floor joists are jointed by diminished haunched tenons with pendant soffits and their outer ends are lodged on a 'clamp' attached to the wall framing. Below, the N sill of the timber frame has a series of regular coggled joints as though there was formerly a lower floor. The other sills though are plain.

From the inside, just below the floor level on the S side there is a small window opening with a short horizontal head bearing a diamond shaped mortice for a stanchion bar. Also, the same wall has clear evidence of the door frame implied by the exterior hinge pintels.

The sequence of construction and alteration is not completely clear but

1. The early-mid C16 dovecote came first, followed by
2. Conversion to granary probably in the later C17 (floor jointing). The dovecote may not have been elaborately raised on brick piers but they were required for the granary function. The gables were closed and a floor inserted and possibly a lower floor constructed which is now gone.
3. Early C20, the lower floor dispensed with and the voids between the piers bricked in to create a larger storage room and part of the upper granary floor cut away for the ladder access.

BARN 3

c.1600 - 9 trusses enclosing 8 bays with 2 S facing gabled midstrey wagon porches at the third bay from each end. Trusses in this report numbered 1 - 9 from W end.

Front, S elevation - weather boarded interlocking shaped clay tiled roof with a slight break towards the W. Between porches and at E end lean-to shallow roofed in corrugated iron, plastic sheet and asbestos cement. Barn doors both C20 2-leaf, boarded.

Rear N elevation, C19 -C20 red brick plinth rendered above and pierced by simple C20 shuttered horse windows. To W end, concrete ramp to small midstrey doorway. Also, area of corrugated iron sheeting with adjacent 2-light side hung iron casement window and upper fixed window now blocked. E end obscured by later building, W end has lath and daub over timber framing.

Interior divided centrally at truss 5 by block walling. W porch, W wall altered and splayed to W to one bay width with original barn walling removed below wall plate. Roof now carried by transverse ironwork.

Construction of barn unitary except for 2 additional bays at W end. Oak framing, very slightly cambered tie-beams with raking struts to single purlins in each roof pitch, collars bird mouthed to purlin arrises and rafters essentially original. Trusses have jowled posts and curved board section braces to tie-beams set off centre and flush towards porches. Face halved and bladed scarfs in each wall plate set at bay intervals over each wall post. Modern longitudinal timber gantry set above collars.

Walling comprises mid-rails with stout studs and primary braced framing in the upper register. Truss 3 N has chiselled carpenter's assembly marks III correctly numbered for construction from W end. Truss 2 tie-beam braces are replacements, notched in and nailed at their tops. W porch E side appears to be added to the barn, similar framing but studs joggled upper and lower and a primary brace runs from the stud adjacent to the barn post - not correctly from the post. Much modern boarding obscures detail at the W.

E end stable area. More visible and like W section. Porch now blocked and although lower studs either missing or rendered over, peg holes imply a joggled system here also. Both porches have simple roofs, purlins to a collar at S gable ends. Opposite the E porch, small doorway on N with loading doorway above blocked. Truss 8 once carried a partition with large central post matching one in the E end wall plus arched braces therefore E bay may have once have had a mid-height lodged floor. E end wall although well built has several used timbers in the lower register - upper section rendered. Re-used timber used sparsely elsewhere in the barn. Occasional slots and holes for wattle and daub visible on studs but not consistent so re-used timber. Was the barn weather-boarded from the start or, more likely, had exterior lath and daub originally. The floor throughout is now concrete and the dwarf walling about 1m high is in sandy red brick, possibly contemporary. It is mostly rendered over but occasionally repaired in Fletton type bricks.

C19 extension at W end, clear roof break with original work, 2 bays, walls rendered but exterior of N not accessible but seen to have a brick plinth c2m high with regularly sawn primary braced timber framing and now with a rudimentary brick nogging infill. Roof, tie-beams of sawn softwood boards, hardwood and softwood rafters and simple raking queen struts over central truss. Rafters in both hard and softwood. Central partition wall in brick with opposed strengthening pilaster buttresses on E and W faces. Simple doorway in S end wall.

Barn 3 lean-tos on S side. C19 -C20 weather boarded as barn. Central lean-to interior - main barn wall seen, at W end, boarded, at E end exposed, mid rail with regular upper and lower studding. 2 simple sloping lean-to tie beams propped on barn middle rail, single purlin to carry corrugated iron roof. S wall boarded with ledged, braced and boarded door, concrete floor. E end lean-to rudimentary construction in mixed timber. Sloping tie-beams with 4 slender purlins on cleats. Door ledged, braced and boarded. N, E and W walls rendered, Fletton bricks in plinth.

BARN 4

c.1600. The remains are fragmentary and enveloped in workshop framing, storage areas and machinery.

What survives is part of the W wall and the arcade of a semi-aisled barn (one aisle only) plus some of the roof construction linking the two. The aisle appears to have completely gone plus most of the N half of the standing W wall. Wall framing viewed from the W exterior face comprises 2 bays with 3 principal posts, middle rails and stout studs with 2 primary braces of similar scantling within the upper register. The lower studding has gone but peg holes imply setting out in line with those above - the space now is infilled with old doors and boarding. The extant studs show a regular sequence of slots that show that the structure was originally infilled with wattle and daub.

The arcade originally set between the main body and side aisles can be seen from one to end within the present attic storage space and it appears complete and of 7 bays. All posts have gradually swelling jowls and the tie-beams and many of the arched braces to ties and arcade plate remain.

Empty mortices within the tie-beams show the former presence of raking queen struts. However, the upper roof has gone and is replaced by a simple pine structure with collars cradling the purlins. The first internal tie beam from the S has empty mortices for a partition below. The S 3 bays of the arcade plate and parallel wall plate have face halve and bladed scarfs set over each wall post and arcade post, as seen in barn 3. To the N though, the arcade plate has an edge-halved and bridle-butted scarf set between posts, an earlier technique. These variants can be found together c.1600 but there may be a junction of 2 builds as yet not seen.

The N penultimate truss has a clearly replaced brace between arcade post and tie-beam as it is essentially a hedgerow misshapen member. More investigation might reveal further evidence in the barn but it is likely to have been severely reduced. The S end gable is all rebuilt in the C20 with a full-height 2-leaved door cut into the end wall.

BUILDING 7

Early - mid C19. This structure is clearly of a late build. It is framed in sawn elm but rendered over.

W face, N - S, has iron framed 2-light casement window, simple C20 ply-wood door with concrete approach steps below, 2 windows as the first, a 2x3 paned similar window and a simple small fixed window. S end plain except for two 4x3 paned iron windows as the rest. N end gable weather boarded in pine and elm, below, N half in breeze block, S half weather boarded - some now missing revealing the framing which is primary braced.

Roof of bright red interlocking clay tiles, much as the other farm buildings.

Interior.

N end intact - S end runs into C20 work. 6 tie-beams are seen, of rudimentary form, ties 3,4 and 6 from N most complete with chiselled carpenter's assembly marks. Truss 6 retains the original roof construction of 2 queen posts plus touching vee struts between. The timber is slender and of waney edged elm, the members being simply nailed together. Above, not seen as boarded in, as are the walls. The wall plates though are visible with a single face-halved and bladed scarf at approximately mid length in each. No wall post/tie-beam braces were apparently originally constructed but subsequently some trusses, 2-5, have side lapped nailed board braces added. What the building was is not clear but trusses 3,4 and 6 show soffit mortices for partitions below, each with a gap - for doorways? The S end probably went on further for at least 2 bays (from spacing of later work).

On the original outer E face, now a long internal corridor elm weatherboarding remains with gaps showing primary braced framing at the N end. To the S is a large carriage/garage door once glazed 5x3 panes, lower 2 now boarded - no glass. Adjacent to S is a C20 boarded door.

Adrian Gibson
15.7.04

Appendix 2: Contents of Archive

Site name: Farm Buildings at Fyfield Hall, Essex

Project no. 1889

The archive contains material from both phases of work

Index to the Archive

Document wallet containing:

1. Research Archive

- 1.1 ECC HEM design briefs (2004 & 2008)
- 1.2 ECC FAU written schemes of investigation (2004 & 2008)
- 1.3 Two copies of each client report (one unbound)
- 1.4 CD containing digital images & pdf-formatted report from second stage of work
- 1.5 Specialist report by Adrian Gibson, MBE

2. Site Archive

- 2.1 Photographic registers
- 2.2 Photographic record (35mm monochrome & colour prints, plus colour digital prints)
- 2.3 R. A. Blick survey drawings (2002)
- 2.4 Site notes & annotated survey plans (2004 & 2008)

Appendix 3: EHER Summary Sheet

Site Name/Address: Fyfield Hall, Willingdale Road, Fyfield, Essex	
Parish: Fyfield	District: Epping Forest
NGR: TL 572 069	Site Code: FYFH 04
Type of Work: Building recording & watching brief	Site Director/Group: Andrew Letch ECC FAU
Dates of Work: May 2008-February 2009	Size of Area Investigated: N/A
Curating Museum: Epping	Funding Source: Integra
Further Work Anticipated? None	Related EHCR Nos.: EHCR 4159 & 32982
Final Report: Summary in EAH	
Periods Represented: Post-medieval & modern	
<p>SUMMARY OF FIELDWORK RESULTS:</p> <p>An Impact Assessment was carried out in 2004 on agricultural and industrial buildings in the vicinity of Fyfield Hall, a Grade I listed property, in response to plans to redevelop to the traditional farm centre. The survey was undertaken when the site was in full working use by several companies engaged in a variety of businesses. More recent work in 2008 was carried out after the site was empty and the buildings largely cleared out, providing an opportunity to fully understand and appreciate the structures. As the earlier work was extensive, the earlier conclusions were supported in the second stage.</p> <p>The findings found that the character of the farm has evolved over nearly 500 years. The earliest buildings are a Grade II listed early-mid 16th century dovecote that was converted to a granary in the 17th century and two barns, built c.1600. One of these is a large twin-porched structure while the second was constructed as a semi-aisled building, perhaps in two phases. The aisle and lower studwork have since been removed. Two other 19th century structures were recorded associated with the era of Victorian 'high farming'. Brief descriptions were made of 20th century farm and light industrial buildings to complete record before demolition. Service trenches were monitored in the former yard and found negative results as the ground level has been reduced for surfacing in the modern period.</p> <p>Despite continual and sometimes potentially destructive uses over time, the main buildings, the dovecote/granary and the two barns retain important structural and architectural features. In particular the dovecote several features relating to its primary function and later adaptation, the traditional farm buildings in the main, display few original fixtures and fittings through conversion to other uses. However historic features such as daubed exteriors, wattle marks, carpenter's marks and high quality timber-work and jointing (much of it original and in good order) are present, giving a strong indication of their character.</p>	
Previous Summaries/Reports None	
Author of Summary: A. R. Letch	Date of Summary: 14th May 2009