

REPORT ON SELECTED FARM BUILDINGS AT

FORTY HALL

LONDON BOROUGH OF ENFIELD

Survey and Historical Description

by

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ENGLISH HERITAGE

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REPORT ON
SELECTED FARM BUILDINGS
at
FORTY HALL FARM
LB Enfield

1. BACKGROUND TO THIS REPORT

1.1 INTRODUCTION

1.1.1 The Historical Research and Analysis Team of English Heritage, London & SE Region was requested by EHLR Conservation Group, to undertake a limited inspection and historical analysis of the extant farm buildings at the above site.

1.1.2 This survey, begun in April 1994, is still continuing, four structures having been examined in some detail to date and described in the following text.

1.2 THE BUILDINGS

1.2.1 Forty Hall Farm is a large, sprawling, multiple-yard complex and typical of nineteenth-century farmstead developments, located just to the north-west of Forty Hall. The complex is divided by an old track, buildings to the north of this track being brought back into use as part of a working farm. However, the majority of standing buildings on this site could be classed as redundant and are suffering from neglect.

1.2.2 The earliest structures and those of most interest, would appear to be the two main buildings in an area enclosed by the remains of the extant brick, former boundary wall, immediately to the north-west and thought to pre-date Forty Hall, described as the 'outer court' containing 'farm buildings' c.1787 (M.R.O., Acc 801/43) and now used in part, as an area for car-parking.

1.2.3 These two buildings (NG Ref: TQ 33580 98590 E) have been described as a weather-boarded barn and a stable block, although there is some doubt as to the original use of the latter. Both structures (and boundary wall) have been included, as one entry, on the statutory list of Buildings of Special Architectural or Historic Interest and given grade II status. The buildings provide valuable material evidence for agricultural history.

1.3 PAST RESEARCH HISTORY

1.3.1 There appears to be little documentary evidence concerning the development of these buildings and few recent surveys have yet been found. No information was supplied with the initial request. One recent survey, undertaken as part of a repairs assessment of the building fabric by **Anthony Hicks** of Orlestone Oak, briefly gives an account of the structural development of the main Barn. An observation report on some test pits, excavated as part of preliminary

underpinning, was undertaken by **Paul Falcini** of MOLAS. The findings of this report, dated March 1995, describe the recording of eighteen test pits excavated in and around the main Barn, the local geology and historic background of the site.

1.4 PURPOSE OF RESEARCH

1.4.1 The purpose of this survey was to make an assessment of the surviving fabric of certain specified structures, establish their historic importance and to assist with evaluation of the proposed redevelopment. The research was required to fulfil three purposes:-

- i) To form a basis on which the acceptability of various proposed alterations and improvements could be assessed
- ii) To aid the decision on the most suitable form of repair
- iii) To assist with the interpretation of the development of the farm estate.

1.5 INFORMATION SOUGHT

1.5.1 The following information was requested:-

- i) Written historical survey and details of the development/alterations of the main Barn
- ii) Written historical survey and information on the development of the Stable block
- iii) Brief written survey and description of other buildings within Farm ranges of historic importance

1.5.2 The information was requested to be used to assist in its refurbishment and development of the farmyard as a 'model farm'.

1.6 ARCHIVE

1.6.1 Copies of this written report, together with a separate photographic record, explanatory sketch drawings and cartographic information, form the archive documentation.

9297
093ha
23

Elsyng Hall (Site of) A.M.

CA/1032/2

5684
065ha
16

5167
705ha
1-74

5052
1-312ha
3-24

5950
673ha
1-66

7159
421ha
1-04

7252
5-119ha
12-65

8555
146ha
36

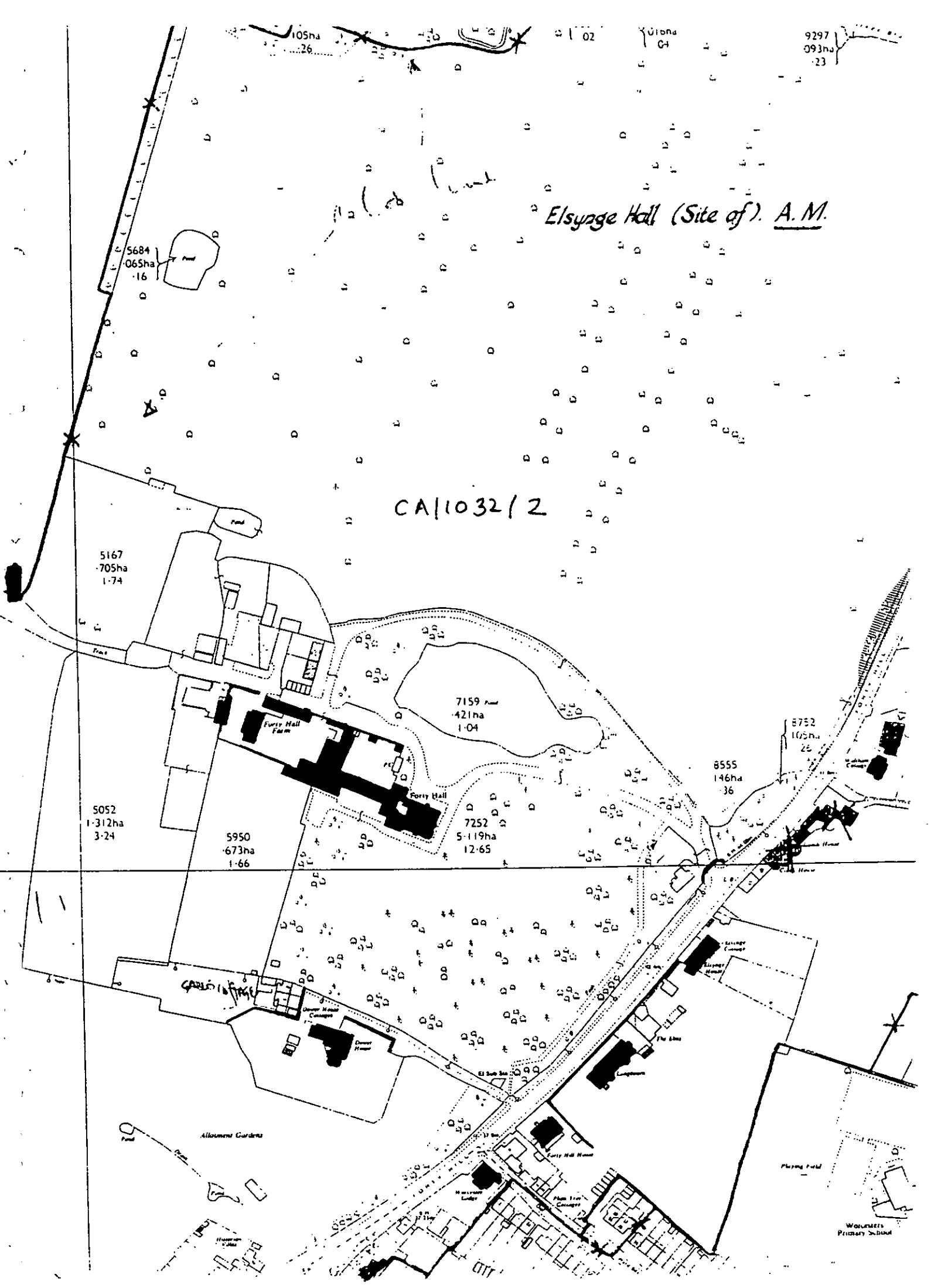
8752
105ha
25

CARLO'S OFFICE

Allotment Gardens

Playing Field

Worlesters Primary School



2 THE REPORT

2.1 INTRODUCTION

2.1.1 The results of the detailed analysis of four structures within the farmyard complex at Forty Hall are presented within this written report which has been divided into four separate sections:-

- 4 THE MAIN BARN
- 5 STABLE BLOCK
- 6 THE GARDEN BUILDING
- 7 THE BULLOCK SHED

2.2 SCOPE

2.2.1 The above sections present the information collected during on-site analysis during 1994 (recently updated March 1996).

3 RECOMMENDATIONS

3.1 The original proposals were to convert these buildings for use as a Historic Farm and Educational/Visitors Centre. The current proposals are very much slimmed-down with limited repairs/reinstatement, details of which have not yet been received. These works are likely to expose a good deal of the structural framing of these buildings which would benefit from further on-site analysis during the building programme. Occasional attendance by a brick specialist would enable closer dating of the fabric with possible sampling of the materials for detailed analysis.

3.2 Important historic fabric likely to be lost during the course of repair, particularly timber-framing, should be recorded.

3.4 A separate programme of historical background archival research needs to be undertaken to provide background information with which to compare present interpretations based on site analysis.

3.5 Monitoring

3.5.1 The proposed works should be monitored during all stages of the project to ensure the maintenance of proper professional standards and to ensure important historic evidence revealed during the repair work is identified.

3.5.2 The appointed monitor should be informed directly of the discovery of any significant and previously unidentified fabric remains.

3.5.3 Any further test pits to be excavated should be monitored to confirm interpretation of the archaeological sequence.

4.1 Introduction

4.2 Structural Interpretation

*Roof**Wall Framing**Carpentry**Aisle**Use*

4.3 Discussion

4.4 Date

4.5 Archaeological Examination

Wall Framing

- 4.2.4 The wall framing of each bay consists of a mid or girth rail morticed, tenoned and pegged into the cross-frame posts, a central stud above and below this rail, again morticed and tenoned, with diagonal bracing from cill to post. Ground cills bear on shallow brick footings. Much repair is evident, generally. No timber wall framing has been used in the lower section of both north and south gable-end walls and their west returns. Here, brickwork has been constructed to an average height of 2.30m (7'6") and thickness of 350mm (1'2"). Typical brick sizes are in the range 225-230 x 110 x 60mm. Remains of some of the original? 'pencil-struck' pointing can be found, protected by a half-bay extension to the aisle, at the northern end of the barn. Much disturbance has occurred to this brickwork making analysis difficult.
- 4.2.5 All framing forming the external walls, has been positioned in such a way as to achieve a flush overall face. This factor together with the absence of stave grooves and other indicators, suggest that the original external covering was, as now, timber weather-boarding. With perhaps the exception of one or two lengths on the west elevation, trapped below the eaves to the south, it is unlikely that the extant boarding is original.
- 4.2.6 The main wall posts, with the exception of those on either side of the main entrance (east), are quite slender. All posts (4No.) to the central three bays on the eastern elevation have stepped jowls. However, only the posts to the central bay on the western elevation have any semblance of jowls, which are flared. Quite why this arrangement was adopted is unclear.

Carpentry

- 4.2.7 Few carpenter's marks have been found. Some large, scribed marks (XI & XIII identified) are visible on the underside of some of the tie-beams but do not offer any logical sequence and would tend to suggest that these members are not in original positions and possibly had a former use. Neatly chiselled marks would appear to reflect the present arrangement for the central three bays, although these are far from complete and rather muddled.
- 4.2.8 The standard of carpentry and quality of construction are generally mediocre with no decoration or flair. Simple half-lap scarf joints have been used throughout the barn to join the wall-plates and, as previously discussed, the purlins. In each observed case the joint is secured with large iron nails.

Aisle

- 4.2.9 The aisle has been constructed on the central three bays on the west side of the barn, with a later half-bay extension to the north, using mainly machined and uniform section timber with few re-used elements. Because of this distinct lack of re-used members, it would seem unlikely that this is a reconstruction of an earlier structure and there is no constructional evidence to suggest that an aisle was

planned with the original build. We must therefore assume that this addition is quite late, possibly nineteenth century.

- 4.2.10 However, it would appear that this structure may have originally been erected as an 'outshot', with limited access to the main building. It was probably comparatively recently that the lower framing to the west wall was removed to incorporate the additional floor area. This may also explain the recently exposed brick floor, which appears to exist only in this area and at a lower level to the floor of the main barn.
- 4.2.11 Apart from additional floor space the aisle offers limited support to the weakened west wall, which is showing obvious signs of distress.

Use

- 4.2.12 The most recent use of this building was for the storage and processing of grain. The extant concrete floor, grain 'sump' and northern wagon entrance all of this period c.1950. The remains of a storage floor laid on and above tie-beam level, are perhaps also associated with this period.

4.3 Discussion

- 4.3.1 It is apparent that this building was originally designed to be of only three bays (B-B to E-E), with a large, wide doorway to both the front (east) and rear (west) of the central bay. Evidence internally, in the form of empty mortices and peg-holes, truncated ground cills and brick footings etc, to cross-frames B-B and E-E and wall frame B-E (west), suggests that the original structural frame was indeed fabricated and assembled in this form. Much of the end gable framing is structurally quite complete on cross-frames B-B and E-E. However, close examination of the surviving framing to these central three bays, has revealed evidence to indicate that this building was not completed and only partially covered and weather-proofed externally. Evidence for nailed 'cladding' exists only below mid or girth rail on exposed members and above this level the framing is quite 'clean'.
- 4.3.2 It would seem unlikely that this framing was intentionally left exposed. Furthermore, the 'honey' colour of the surviving oak framing here and no discernible evidence for its weathering, would tend to suggest that it was not exposed for a long period of time. There is also no evidence to suggest that doors were hung on the rear (west) elevation of the central bay, although there was clearly an intention.
- 4.3.3 A change to the design of this building was therefore apparently made, during construction and a further equal bay added to the north and south. The structural framing to cross-frames B-B and E-E would appear to have remained, as a separate means of access was provided by foot to each of these additional bays, located on the east elevation. The functional use of the building would also appear to have changed with the central bay, whose original use may have been intended

as an area for 'threshing', becoming an area for access and distribution.

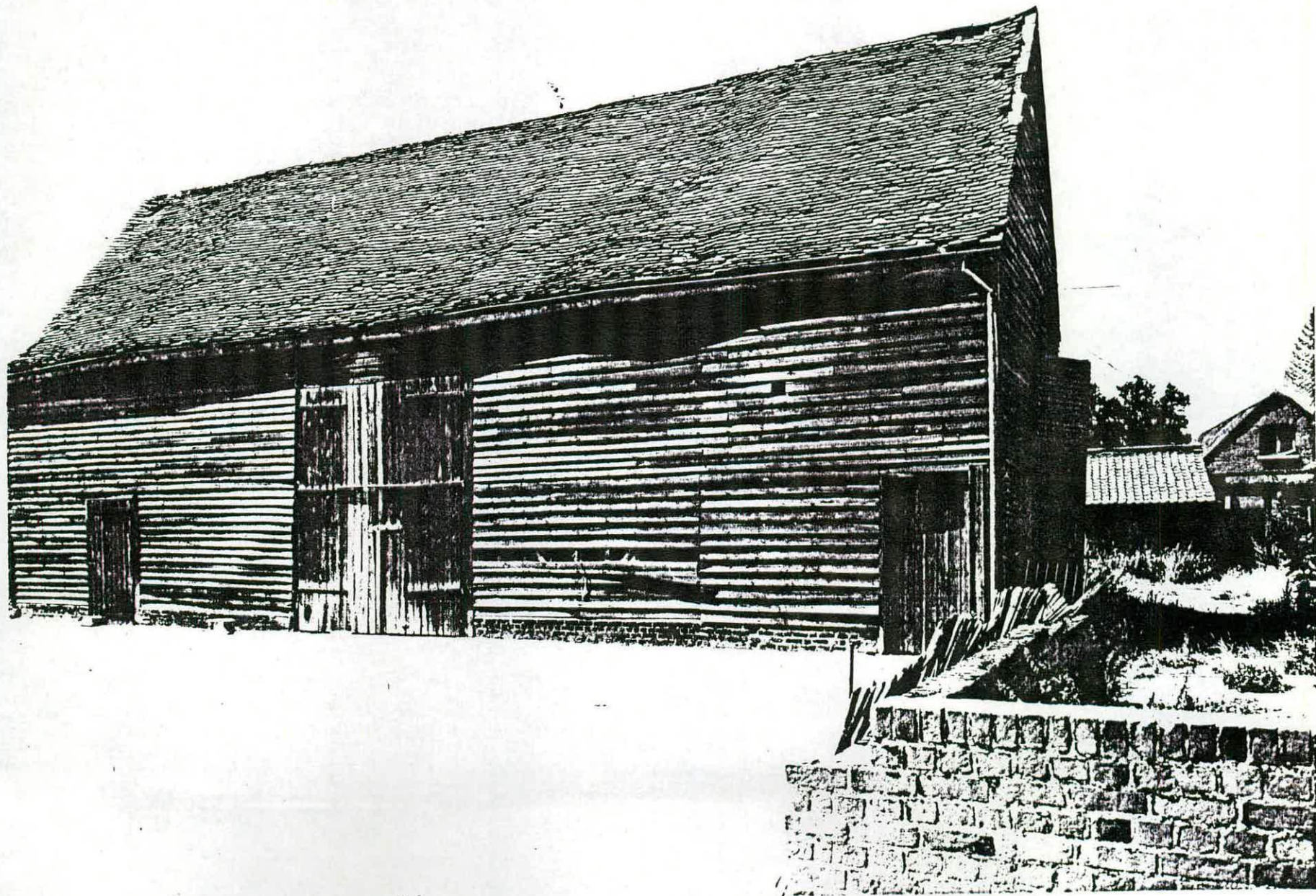
4.4 Date

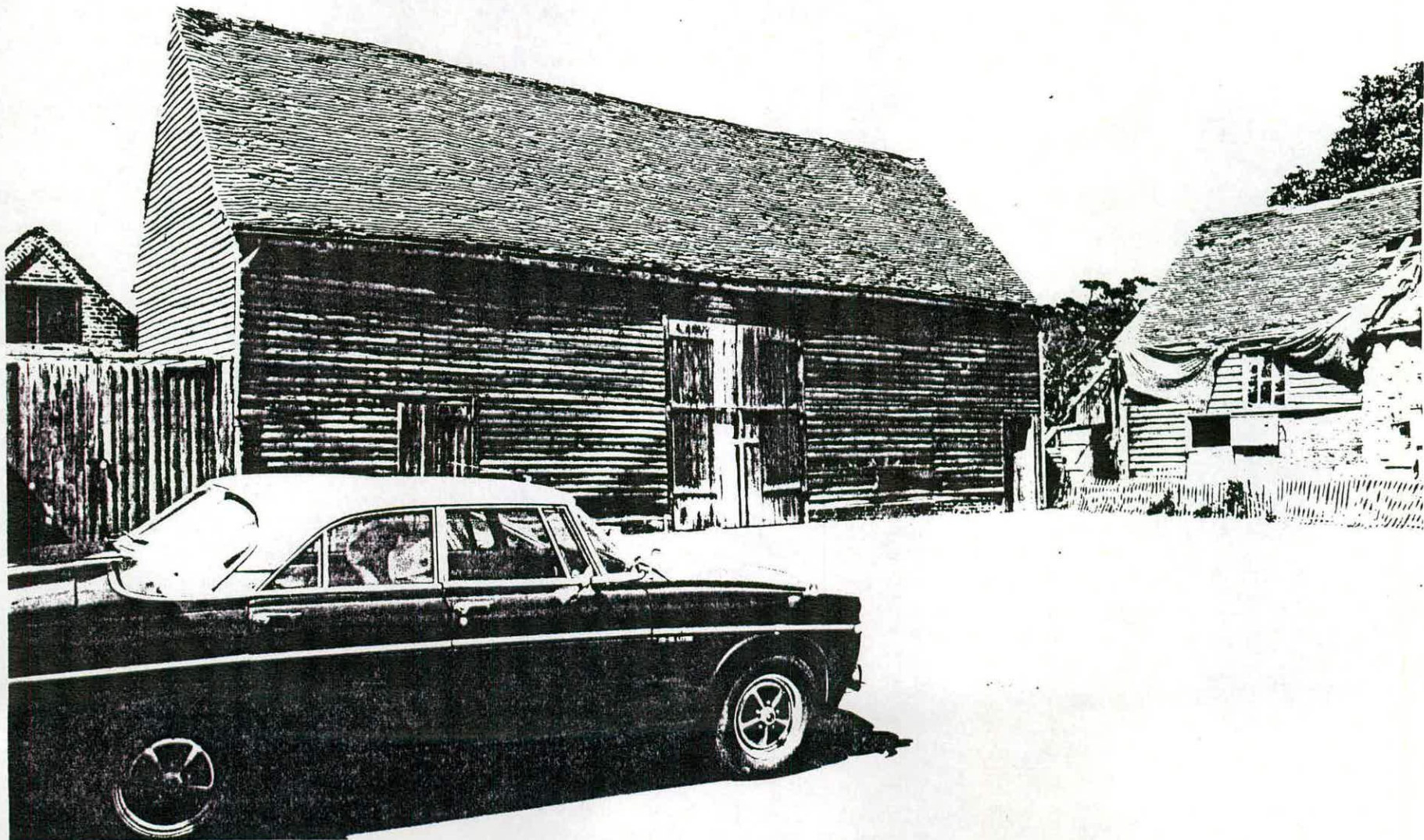
- 4.4.1 As with most buildings of this nature, little documentary evidence can be found relating to its construction. If we examine available cartographic evidence, it would appear that a building has existed on this site since the middle of the eighteenth century (1785 Forty Hall estate map). It is not until the late nineteenth century that an addition to the west is recorded (aisle/outshot).
- 4.4.2 Examination of the constructional techniques used, building form and the quality of craftsmanship, as outlined above, would broadly suggest a date for construction no earlier than the eighteenth century.
- 4.4.3 Comparable examples are that of the two three-bay barns at Bower Farm LB Havering c.1740 and the main barn at the Manor of Envilles, Essex c.1730.

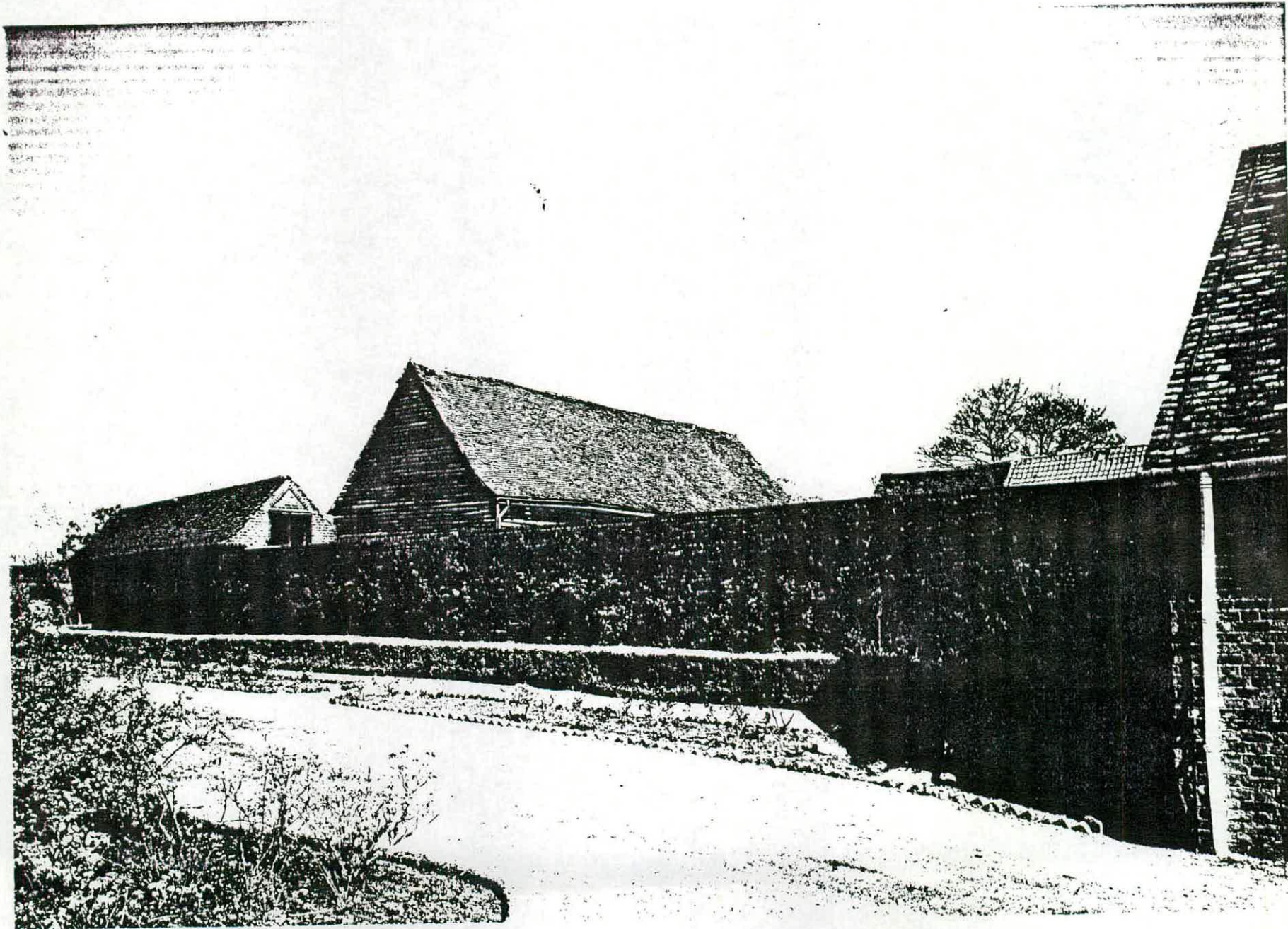
4.5 Archaeological Examination

- 4.5.1 Recently, a series of trial pits have been excavated within the curtilage of this building to examine the sub-structure, exposing quite extensive brick footings. There is little evidence to suggest that these footings, some measuring over 1000mm (3'3") in width, relate to the existing standing structure. However, sections of the west wall framing to both the barn and aisle, would appear to have been erected with some knowledge of their existence as to a certain extent, they have been re-used. Further examination in this area is needed before any conclusions can be made about what appears to be a former structure on this site.
- 4.5.2 Of those bricks excavated, a sample of about thirty were randomly selected and examined from each pit in some detail and their dimensions and characteristics recorded.
- 4.5.3 Bricks observed typically measured 225-230 x 105 with a thickness of 63-65mm (9"x4"x2.5") and were regular in shape and appearance. They were dark red in colour with some vitrification suggesting that they had been well fired. Shallow concavities (frogs) were observed in the base of these bricks although these were crude and rudimentary. No mortar samples were taken.
- 4.5.4 Dimensional and textural comparisons with the exposed surfaces of the bricks used in the construction of the main house and other dated structures on this site, would suggest that these exposed footings were probably of the same period as Forty Hall itself c.1629.









5

STABLE BLOCK

5.1 Introduction -

5.2 Structural Interpretation

Roof Structure

Carpentry

Wall Construction

Use

5.3 Discussion

5.4 Date

5 STABLE BLOCK

5.1 Introduction

5.1.1 The stable block is a part brick, part timber-framed structure of eight bays with the remains of seven original roof trusses and associated roof framing. Sections of the building are covered with timber weather-boarding and clay peg-tiles remain on some areas of the roof. Built on to the north-west gable end is a timber-framed outshot. Historically, this building is of greater interest and structurally more complete than the Barn.

5.1.2 The two end bays to the east, have been completely re-built using modern materials, although it would appear the original bay-widths and height have been generally maintained, and now form a small domestic cottage on two floors. The adjacent two bays immediately to the west at ground level, have been converted for use as accommodation and possibly as a mess room for farm hands. An opening, now sealed, formerly linked the two areas.

5.1.3 The building has fallen into disuse and is generally in a poor state of repair and consequently threatened by a gradually worsening state of dereliction.

5.1.4 The stable block is aligned approximately on a north-west south-east axis and perpendicular to the previously discussed Barn, with overall dimensions 24.8 (27.55 including outshot) x 6.3 m (81'3" x 20'8"). Bay widths are constant and measure approximately 3.05 m (10'0").

5.1.5 For identification purposes the eight structural bays have been assigned letters A-A, B-B and so on, A-A being the north-west gable end wall offering support for the timber-framed outshot, with I-I the south-east gable end (see Key Plan).

5.2 Structural Interpretation

Roof Structure

5.2.1 The extant timber trusses and roof frames which support the roof covering, date from the construction of this building. The timberwork appears to be in a fairly sound condition, with decay in areas of current exposure. Much of the original roof structure is intact and has only been altered slightly by the addition of furring pieces to the backs of the rafters and the crude addition of wind-bracing and strutting to improve a weakened original design. The quality of the timber used to construct the roof assembly varies considerably, however, few timbers show definite signs of having been re-used.

5.2.2 The roof framing is of staggered butt-purlin construction, the joints between the principal rafters and purlins are double pegged. In bays A-A to C-C and E-E to G-G there are six pairs of common rafters to each bay. The rafters are approximately of equal length and are tenoned on either side into the purlin and occasionally pegged. No wind-bracing was originally incorporated into this roof structure. The

roof framing between bays C-C to E-E is entirely modern. Original purlin mortices survive on the eastern face of the truss on G-G with impressions of removed timbers and a sequence of carpenter's marks, suggesting missing elements here. This together with the original surviving brickwork below to the north flank elevation, provide evidence for the continuation of this structure by at least two further bays.

- 5.2.3 Support for the roof framing is given by a series of seven tie-beam trusses extending from bay A-A to G-G (the remaining bays G-G to I-I have been completely reconstructed using modern materials). Only the original tie-beam on truss D-D survives. The trusses are of a simple form with a collar positioned slightly above the purlins. Originally the principal rafters were not braced except where enclosed by studwork. The extant strapping and bracing to this roof structure are modern alterations.
- 5.2.4 Face-halved and bladed scarf joints with thick central halvings have been used to join the wall plates. In each case the joints are secured with four edge-pegs (two pegs passing through each tenon).
- 5.2.5 Early photographic evidence shows the mid section of this building (bays C-C to G-G) to have been covered with clay pan-tiles, a small amount of which survive, stored in the stable area below.

Carpentry

- 5.2.6 The pattern of carpenter's marks found throughout this building were noted. The joints between the principal rafters and the purlins, the principal rafters and the wall plate and at the apex are numbered and follow in correct sequence from bay A-A to G-G, along both sides of the roof, indicating no alteration to the original design. All of these marks have been neatly chiselled.

Wall Construction

- 5.2.7 A regular pattern of assembly peg holes with truncated pegs, visible empty mortices on the underside and a (previously described) sequential set of carpenter's marks are evident all along the timber wallplate above the brickwork of the main southern flank wall (bays C-C to G-G). This evidence almost certainly suggests that this elevation was originally timber-framed. The only surviving timber wall-framing exists between bay A-A to B-B, with the ground cill positioned on a shallow brick footing. As no disturbance is evident and with the structural integration of the roof structure here, we must assume that this is the original construction.
- 5.2.8 The main northern flank wall of this building, is constructed of brick. A clear, roughly horizontal, construction line together with differences in mortar type, indicate that this wall was substantially raised on the earlier brick enclosure wall surrounding these buildings as support for the extant roof structure.

- 5.2.9 Evidence for two former structural openings in the brickwork exist here. An original pedestrian entrance through the enclosure wall on F-F, now blocked with a mixture of brick and a larger opening on D-D, forced through the original enclosure wall, now blocked with a stock brick similar to that used for the works to the north wall.
- 5.2.10 Possibly during the early 18th century the original timber wall framing between bays C-C to G-G was removed and the roof framing underbuilt with a soft friable brick in lime mortar, on a shallow footing. During this period of reconstruction the present, structurally integrated, upper floor to these bays was introduced, forming the present 'hay-loft'. This brickwork, mainly re-used with a mixture of cut and broken bricks, is of poor quality with no recognisable bond. Cross walls have been bonded horizontally with large re-used timbers and have been built against the earlier north flank wall with no structural integration.
- 5.2.11 Externally, evidence exists to suggest at least two re-pointing phases, black ash mortar still surviving in small areas (C.19th) and the current hard, dense material which is detrimental to the soft brick fabric and should be replaced as a large amount of face decay has already occurred.
- 5.2.12 The southern flank brick wall has suffered many alterations and its original elevational form is unclear. The present fenestration is mainly late 19th century with later joinery. A large area, neatly rebuilt in flemish bond with a yellow stock brick, between bays C-C to E-E, may indicate a former waggon/coach entrance. A stable door opening formerly existed between bays E-E to F-F but was sealed and converted to a window when the extant accommodation was formed. The window to the bathroom was also reduced in size during this period.
- 5.2.13 The western end gable wall (A-A) has been constructed in brick, 345mm (13.5") in thickness, in flemish bond and up to the underside of the original tie-beam. This appears to be a replacement of an original timber wall frame as similar-constructural evidence exists to that previously described on the wall plate of the southern flank wall. Bond timbers have been incorporated on both faces of the brickwork and provision made for the incorporation of the structural members of the extant out-shot roof which would therefore appear contemporary. Remains of 'pencil-struck' pointing survive here.

Use

- 5.2.14 There originally appears to have been at least six stalls for the accommodation of horses (cowhouses had smaller stalls), one stall to each bay between A-A to G-G. Only two complete stalls remain (bays A-A to C-C) with mainly 19th century fittings and screens. The other two surviving stalls (bays C-C to E-E) have evidence for their troughs and racks remaining in the surviving cross-walls. The screen division, although adapted, is possibly original (C18th.). With the exception of the paved floor, lime wash remains on all surfaces.
- 5.2.15 The hay-loft over (bays C-C to G-G), accessed by a vertical ladder, provided

valuable storage to the stables and had some insulation value. The floor is constructed with a range of new and re-used timbers and has been doubled-boarded. A number of the re-used elements are of interest as they appear to have been part of an earlier floor construction with at least one member displaying heavy roll-moulded profiles. A number of timbers here are in an advanced state of decay and need urgent attention.

5.3 Discussion

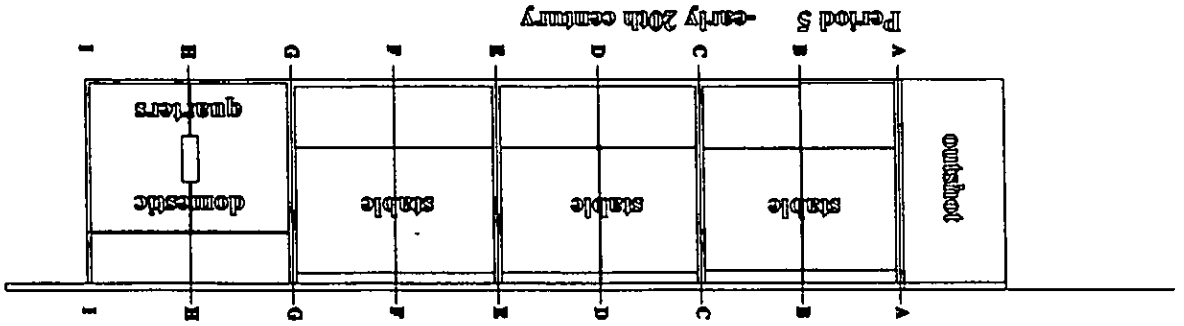
- 5.3.1 It is unclear whether this structure was originally intended for use as stabling. constructionally it pre-dates the Barn (previously described) and may have been associated with the range of buildings of which only the large brick footings (recently excavated and now covered) remain. With the reconstruction of the central bays and the incorporation of an upper floor it would appear that their current use was established. With an increasing need for horse-drawn power as a result of the considerable alterations in farming methods during the latter 18th & 19th centuries, this building may have been adapted to suit. Waggon horses for agricultural work were often accommodated in separate stables and it is those that were probably housed here. With minor alterations, this building has been in use as stabling probably since the early 18th century.

5.4 Date

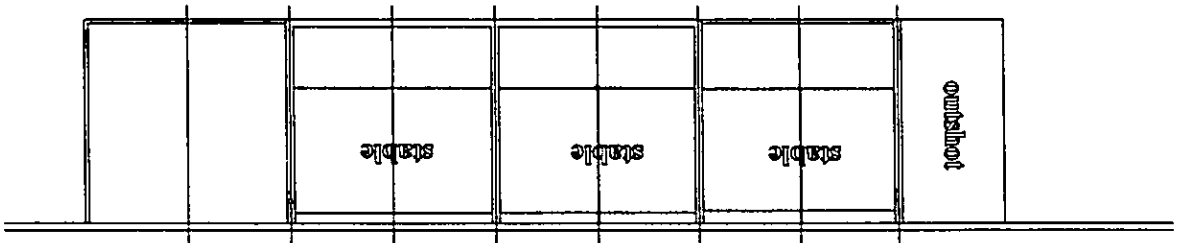
- 5.4.1 As with the Barn, little documentary evidence exists. Both the 1773 and 1785 Forty Hall Estate sale catalogues locate a building here.
- 5.4.2 If we examine constructional techniques used in the earliest surviving sections of this building, namely the roof structure, this would broadly suggest a date for construction from the mid to late 17th century. The scarf-joint found in the wall plates being the main point of reference.
- 5.4.3 Tenoned purlin roofs have been used, within the London area, in barn construction since the late fifteenth century. Perhaps the earliest known example is that of Harmondsworth in LB Hillingdon c.1427. A similar roof construction, although of larger scale, exists at Warren Farm LB Havering c.1700 and another example recorded at Berwick Manor in Rainham c.1700.

STABLE BLOCK
 DIAGRAMMATIC PHASED GROUND PLANS (not to scale)

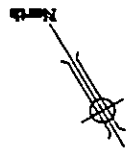
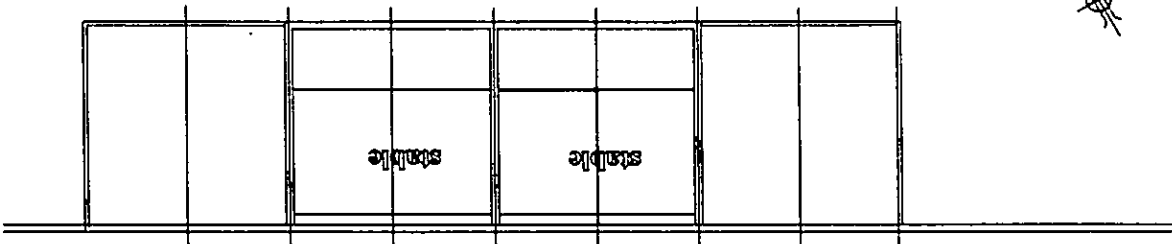
alterations to south brick elevation to incorporate present
 remembrance/access: 2 bays at west end converted for accommodation



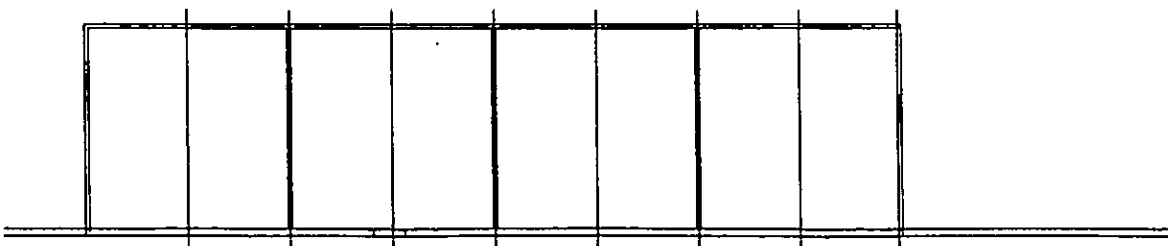
Period 4 - 19th century
 removal of east gable wall and under-building of roof structure
 with brick: introduction of 'outhouse': additional stabling in
 eastern bays



Period 3 - early 18th century
 timber-framing to central bays removed and roof structure
 under-built in brick: introduction of timber upper-floor with new
 'stable' use

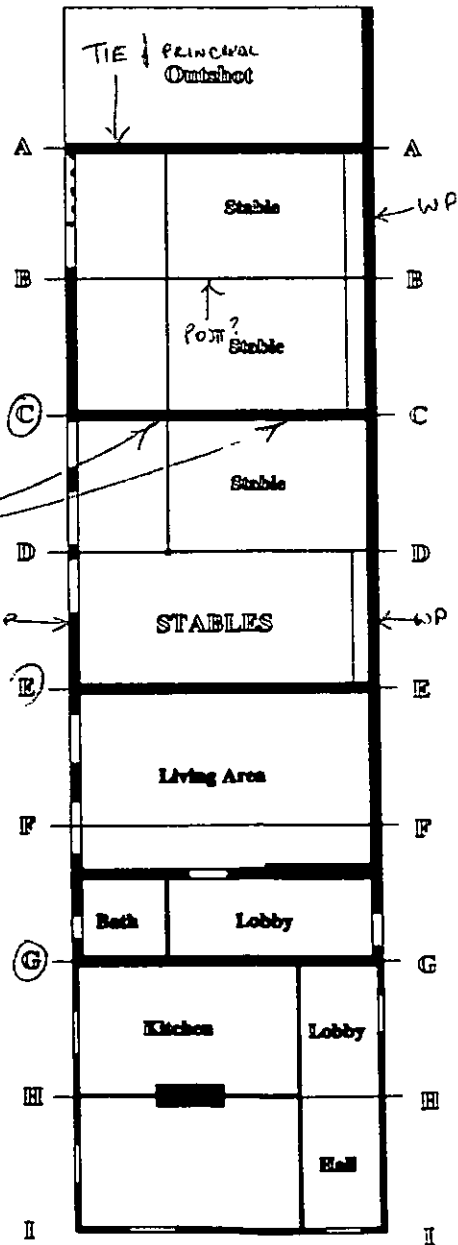
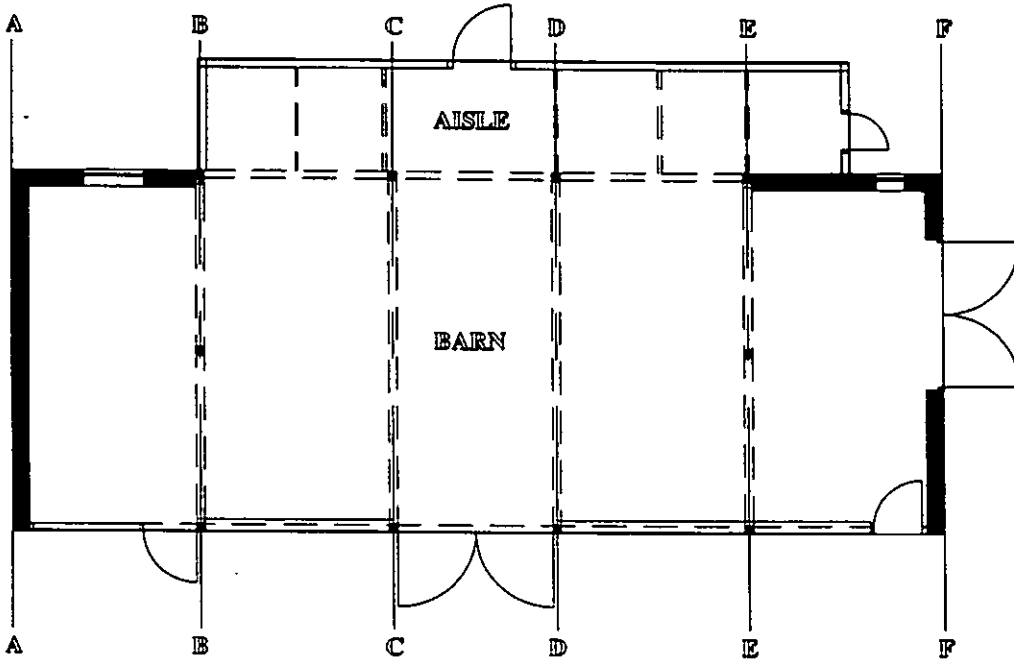
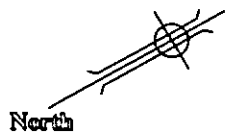


Period 2 - late 17th century
 Boundary wall raised to support roof structure of new
 3-bay timber-framed agricultural building



Period 1 - early 17th century
 Brick boundary wall with pedestrian access





TIE - 1465-1499 → (C)
(OAK)

PRINCIPAL'S
BOTH CONIFERS

TIE - 1488-1503 → (E)
(OAK)

TIE - 1476-1503 → (G)
(OAK)

Yard

KEY PLAN

6

GARDEN BUILDING

6.1 Introduction

6.2 Structural Interpretation

6.3 Discussion

6 THE GARDEN BUILDING

6.1 Introduction

6.1.1 Located to the west of the main Barn and in the south-west corner of the enclosed yard is the remains of a small brick structure of special interest in this group. It currently forms part of the Forty Hall Estate gardener's workshop and is accessed from the estate gardens to the south (formerly the Walled Kitchen Garden). Only limited access was possible and the following brief description is based mainly on an external examination.

6.2 Structural Interpretation

6.2.1 It is a single cell structure on two floors with a pitched roof of plain clay tiles. The structure has been raised on a brick plinth and has a three-brick belt course midway around two of the surviving elevations. It has been extended towards the barn in recent years. Part of this structure would appear to be contemporary with the construction of the brick enclosure wall with which it is structurally integrated.

6.2.2 On two elevations openings for windows are spanned by flat or cambered brick arches with gauged voussoirs with cross joints. On the northern elevation this construction would appear at least partly, to be contemporary with the earliest brickwork and suggests an early date (c1620). This high quality brickwork, not found elsewhere on this site, is unusual on a building of this status.

6.2.3 Two elevational brickwork bonding patterns are evident which, together with different mortar types identified, almost certainly indicate different constructional periods. It appears the west gable-end elevation was raised on the earlier brick enclosure wall mainly in Flemish bond in a coarse sand/lime mortar with its architectural style suggesting an early eighteenth century date. There is no evidence to suggest that the large window opening (1450mm wide x 1080mm high) here is not contemporary with this period. An horizontal construction joint 5 courses below the projecting belt course and packed level with clay tiles, distinguishes the two construction phases.

6.2.4 This brickwork construction and style returns along the north elevation from just below the belt course. Here the brickwork has been closed with queen closers at each end indicating its original form and size. Below the belt course the brickwork, constructed mainly in English bond in a fine sand/lime mortar, is structurally integrated with the enclosure wall. Clearly a door or access point from the yard formerly existed east of the extant window here and has been comparatively recently blocked. The impression of a flat or cambered brick arch remains above this blocked opening with the surrounding brickwork in stretcher bond, suggesting reconstruction.

6.2.5 The remains of a timber, ovolo-moulded window frame fill the opening (940mm wide x 840mm high) on this north elevation, although disturbance to the brickwork around the opening would suggest its insertion. It has been constructed as a

structural unit with the unusually stout upper frame member (truncated to fit within its existing situation) originally serving as a lintol and similar to those that survive in-situ at high level in the principal range, adjacent to the house. The current glazing is modern and crudely applied.

- 6.2.6 With the exception of the northern purlin the roof construction is modern and probably dates to the extension of this building to the east c.1900.

6.3 Discussion

- 6.3.1 It would appear that a small single storey building, part of which still survives, was constructed in brick in the south-west corner of this enclosed yard as part of the original layout c.1620, its purpose unclear. During the late seventeenth or early eighteenth century the structure was raised to its present height, incorporating an upper floor and pitched roof and the present fenestration, again its purpose unclear. However, the large window on the upper floor of the west elevation, overlooking the former Warren, may suggest some connection with this activity - possibly a keeper's cottage?

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7. BULLOCK SHED

7.1 Introduction

7.2 Structural Interpretation

7.3 Use

7.4 Date

7. BULLOCK SHED

7.1 Introduction

- 7.1.1 The bullock shed forms part of the Grade 2 group listing covering the outbuildings at Forty Hall Farm. It is located to the north of the previously described buildings, across the farm track and within the farm complex currently in use.
- 7.1.2 At the time of the EH survey the building stood empty, apart from a timber trough extending along the west side wall at its northern end. The roof of the building was dismantled prior to the EH survey; however, from a single principal rafter and common rafter couple remaining in situ, it was possible to partially reconstruct its original form on paper. With the exception of the roof members, the timber frame of the building has been little altered since originally constructed, perhaps during the early 18th century.
- 7.1.3 The building is timber-framed, with overall dimensions of c.12.5m x c.4.2m. Strictly defined, the building was a 1 1/2-storey structure, since it incorporated a fully-framed timber floor at the level of the eaves. The building is aligned approximately N-S.

7.2 Structural Interpretation

- 7.2.1 The timber frame is divided into four bays of equal size by cross frames comprising wall posts, tie beams and braces.
- 7.2.2 The building had a brick pavement floor, of which only part is exposed at present. It has been constructed in piecemeal fashion, presumably as a result of ongoing repairs. Three distinct areas of brick pavement are discernable:
- a) An area of mixed brick types, laid on edge. Includes 55mm-deep bricks, of red-pink colour; some 67-70mm x 230mm.
 - b) An area of dark red/purple coloured brick, which includes some yellow stock bricks. Brick sizes 60-65mm x 225-230mm.
 - c) An area of yellow stock brick. Brick sizes 65-67mm x 230mm.
- 7.2.3 Except where underbuilt, or replaced by a brick pier, the wall posts stand upon rectangular-shaped padstones, some of which overlie one or two courses of brick. The padstones appear to have been of equal size, with dimensions c.550mm x c.360mm x c.180mm deep. Mortices on the upper face of the padstones originally received tenons projecting from the base of the wall posts.
- 7.2.4 Along the north, west and south sides, the wall posts were arch-braced to the wall plate / end tie beams. The braces employed mortice and tenon joints and thus were an integral feature of the timber frame. Along the east wall, where the building fronted onto the farmyard, the use of arch-braces would have presented an obstruction to farm vehicles. Instead of wall bracing, the front wall featured a series of angle ties linking the tie beams to the wall plate. These were morticed and pegged to the tie beams and were lap-halved and nailed to the top face of the

wall plate.

- 7.2.5 The tie beams also served as floor beams, and were thus morticed to receive the ends of the intersecting floor joists. There were five floor joists over each bay. The outer floor joists were positioned directly over the wall plates, so that their outer sides were flush. The type of joint used between the tie beams and floor joists had a soffit shoulder and diminished haunch. It was noted that some of these joints were not pegged.

Roof

- 7.2.6 The roof of the building appears to have been of clasped purlin construction. As such, it would have featured an intermediate roof truss at each bay division, and a terminal truss at each gable end. The roof trusses in this building comprised a pair of principal rafters and a collar beam. The principal rafters were joined at the apex using a pegged bridle tenon joint. The collar beam was simply halved over the sides of the principal rafters and was pegged through twice at each end. Between adjacent roof trusses there stood a series of seven or eight common rafter couples. Along each side of the roof the common rafters were supported by a single side purlin, and the purlins were themselves trapped between the principal rafters and collar beam of the roof trusses. In this building, the roof trusses were not aligned precisely with the cross frames, but were instead placed at the sides of the tie beams. Each rafter was notched over the wall plate, whereupon it was secured with a single large nail; the feet of the rafters projected well beyond the wall plate to form an overhanging eaves.

7.3 Use

The building was evidently designed as a shelter shed, with extra room for storage in the roof space. The timber frame of the building was open on all sides. With the later addition of weatherboarding as an external wall cladding, the building became a fully enclosed structure. Thereafter, it would seem likely that it was used exclusively to house livestock. Presumably, the extant timber-framed trough was inserted into the building at this time. Also associated with this change in use was the addition of short, straight braces along the front wall. These were much shorter than the early arch braces, and were simply attached to the frame using nailed lap joints.

7.4 Date

The building itself has no precisely datable features. However, from its structural details alone it would seem unlikely that it was constructed before the middle of the 17th century. For example, the type of joint used between the tie beams and floor joists was very common in the London region during the 17th and 18th centuries. The type of roof construction would certainly be consistent with such a late date.

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