

# SUMMARY ANALYSIS OF WATERLOGGED ANCIENT WOODWORK FOUND ON SITES OF THE 'EAST LONDON GRAVELS PROJECT':

## Hunts Hill farm and Moor Hall Farm

Site code: UP-HH89, R-MHF79

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FOUND ON SITES OF THE 'EAST LONDON GRAVELS PROJECT' :

Hunts Hill farm (UP-HH89) and Moor Hall Farm (RH-MF79)

Original excavators- Newham Museum Archaeological Service, Passmore Edwards Museum respectively.

POST-EXCAVATION TEAM – MoLAS / MOLSS PM- P Rowsome

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2<sup>nd</sup> draft October 2006

N/B This report principally deals with the woodwork actually lifted from the excavations and examined by this author, but also contains some more general notes.

NB/ This report completely revises summary generalisations and comments made in the initial brief assessment report of January 2004 compiled prior to the recording of some elements.

NB/ This report also contains corrections to some factual errors concerning the woodwork that appeared in the popular summary publication 'From Ice Age to Essex' ( MoLAS 2006) . That text was not seen by this writer before publication.

NB/ Any text blocks marked with an \* are provided here for background information and it is expected that they would be either omitted, or greatly edited down for any publication of material therein.

***NB/ If a tree-ring study of samples taken was carried out some tightening of dating should be possible.***

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BACKGROUND \*

Both the Hunts Hill Farm (UP HH 89) and Moor Hall Farm (RH MF 79) sites, which have yielded meaningful quantities of waterlogged wood, lie a short distance inland of historic marshes at Rainham and Wennington. They are on the eastern limits of London, just north of the Thames estuary. However, as the sites are a few metres higher than the marshes and on a gravel subsoil they are essentially 'dry' sites. The excavated landscapes of late prehistoric to Post-Medieval rural settlements, field boundaries, enclosures, wells, waterholes and droveways is described in the main stratigraphic analysis report. The preservation of waterlogged woodwork was found to be limited to a small number of the deeper wells and similar cut features many other wells or 'waterholes' did not have surviving woodwork in them.

The waterlogged worked roundwood and timber with which this report is principally concerned was excavated between 14 and 22 years ago. It was then dealt with in a variety of ways to different standards than have been acceptable from the mid 1990's onward (see below).

This report provides a summary analysis of the nature, quality, and character of the woodwork found and lifted from the sites set within a London region context. It is based on reviewing the records available and direct examination and recording of items of lifted woodwork from the two sites concerned. Some effort is also made to reconstruct the woodland resources used by the woodworkers.

METHODOLOGY AND THE NATURE OF THE RECORDS \*

Recording of waterlogged woodwork on site by the excavation teams prior to the production of systematic guidelines by English Heritage

Here we are concerned with more detailed recording than that of basic site plans and sections. It is fair to note that the approach to recording waterlogged woodwork used in the various phases of work at sites RH-MF 79 and UP-HH 89 was very ad hoc and often difficult to understand, interpret and compare with evidence from elsewhere. It is also fair to note that much of the recording was only partially completed, with many key details such as the nature of toolmarks, joint types, method of conversion, species and suitability for tree-ring study etc not described. For example the context sheets used for timber elements of the Roman well [525] from UP-HH 89 are virtually blank on the front although some have useful measured sketches on the rear, and in the case of well [5134] from the same site some sheets are missing. However, there are clear reasons for this state of affairs that applied almost nationally outside the Somerset Levels, the London City waterfront. In 1979 little was yet available in print detailing the systematic work carried out in the City with

Roman timber structures for example, although a little later the first and second MoL Archaeological Field Manuals with sections on recording and sampling woodwork were available (Spence ed. 1990). Both the projects, RH-MF 79 and UP-HH89, were also carried out before the compilation of the English Heritage Guidelines and standards document dealing with waterlogged wood on excavations (Bunning 1996).

The lack of training and support also lead to the use of very ad hoc terminology for both the waterlogged wood itself and related traces from decayed timber buildings. For example, thick jointed beams were termed 'planks' and earth-fast, post-based buildings were termed 'post-fast structures'. Despite the provisos cited here much information has been gleaned from lifted timbers, and some of the records eg. detailed measured sketches and photographs made on-site.

Methodology for the initial study of the ancient woodwork from the project sites \*

The huge size of the overall project and known disparate nature of the site archives prevented the usual practice of scanning the records in toto for initial information about wooden structures and individual items of worked roundwood and timber. Instead the principal assessors of the overall stratigraphic record for each of the sites were consulted and they focussed the initial attention of this writer on key records referring to wooden remains other than small isolated fragments (P Rowsome, D. Swift, J. Hill, and A. Telfer Pers Com. Dec. 2003). Additionally D. Swift was able to provide a provisional listing of all contexts which were noted as 'wood' or 'timber' work related from the Hunts Hill Farm archive (the undated well [5867] may need adding to it). These last were scanned for diagnostic information. J. Hill was also able to retrieve a very useful sequence of post-excavation axonometric drawings of timber well lining [265] from Moor Hall Farm. Although those drawings lack some details most of the surviving unlabelled timbers of the well can be identified using it.

Notes and sketches made in 1996 by this writer of some material from the Hunts Hill Farm site \*

Although this writer was not able to examine any of the woodwork found in-situ for either of the sites some of the lifted wrapped material from Hunts Hill Farm was briefly examined, at the request of the excavators in 1996. Advice was given verbally and in a short report on; the identification of the material, evidence for reuse of some elements, tool mark survival, species and further recording and sampling. Informal notes and sketches were also made then which have proved useful when looking at those timber surfaces which had suffered much decay since 1996.

The interim post-excavation summary of the Hunts Hill Farm project provided by P. Greenwood in 2002 has also been referred to together with the MOLAS UPD report of Nov 2002.

## Examination of surviving lifted woodwork 2004 – 2005 \*

Approximately 132 pieces of surviving worked timber or roundwood (many in several separate, bagged fragments) had been moved to Mortimer Wheeler House as part of the finds archive for the project. About 1/3<sup>rd</sup> are from Moor Hall Farm and the rest Hunts Hill Farm. Those from Moor Hall Farm all appear to have been conserved with PEG and are thus, now moderately stable but will need improved wrapping and labelling for long term storage. They now total 12 substantial plank elements, after the discarding of 25 small unlabelled oak fragments that could not be refitted to larger timbers. The Hunts Hill Farm material was stored in polythene, mostly double wrapped and survived in varying states of preservation. None has been selected for conservation due to its broken condition and ancient and post-excavation decay.

## Potential for reconstruction and display of well lining RH-MF 79 [265] following its conservation soon after lifting \*

The timbers are generally sound although they have some drying cracks, toolmarks survive in a number of places as does sapwood. The existing axonometric has been slightly amended to make a more technically reliable graphic reconstruction see (below). The original timbers could also be reassembled for display with some gap filling and light support. The reconstructed lining would occupy a space c. 1.5 x 1.2 metres by 0.75m high and would be quite visually arresting. Due to the modest size of the timber used an authentic reconstruction using the same materials, methods and tools as the original could be also made at moderate cost. This reconstruction could be touched by visitors etc. Scale models could also be made for children etc to assemble and reassemble, following a graphic guide, for a hands-on learning activity.

## SUMMARY OF THE SPECIALIST WORK CARRIED OUT TO COMPLETE THE RECORDING AND SAMPLING OF THE LIFTED WOODWORK

### Recording

Although the lifted woodwork from both sites and the associated woodwork had been briefly scanned in 2005 as the funding permitted. It was not until summer 2005 that the recording and sampling could be completed. This work was carried out in accordance with the guidelines set out in both the MoL Archaeological excavation manual 2<sup>nd</sup> edition and the English Heritage Guidelines on Waterlogged Wood (Spence ed 1990, Brunning 1996), except where there was excessive repetition or items were very decayed. In total over 300 separate wrapped items were unwrapped and washed followed by full recording with scale drawing and timber sheet, or summary recording on an annotated 'Timbers List'. A total of 27 fairly well preserved items were drawn from Hunts Hill Farm and a representative sample of two planks of the Moor Hall Farm well redrawn showing diagnostic features not

initially recorded for the axonometric drawings. Following the final completion of the basic recording some draft figures were prepared for this report to aid clarity.

### Sampling

Most of the lifted material was of oak which is easily identified by eye to the same degree as it can be by botanical methods i.e. one of our two native oaks or their hybrid. However, other species not showing clear diagnostic features have been sampled for species identification, the number of samples totals 6. Oak with over 45 rings is potentially suitable for tree-ring dating and sound material with such characteristics was sampled with a view to tightening construction dates for timbers structures found. A total of 12 tree-ring samples were taken. Finally one c14 sample was taken from timber [2867] which was associated with the Saxo-Norman dugout well at Hunts Hill Farm. The timber was not suitable for tree-ring dating.

## KEY FEATURES OF THE ANCIENT WOODWORK EVIDENCE AND RELATED SUBJECTS BY PERIOD

The periodization laid out in the Update Research Design for the project is followed here for ease of cross referencing. For the production of wider research results, concerning regional themes such as landscape ('treeland') change in east London and developments in woodworking technology and buildings etc, the corpus of evidence from waterlogged urban sites and the Lea Valley just to the west and near by east London estuary flood plain sites must also be consulted.

The east London gravel sites are acknowledged as relatively poor in waterlogged wood remains compared to; the relatively near areas of central London the estuary flood plain and also the foreshore zones of greater London and south Essex. Familiarity with closely dated, systematically recorded and sampled woodwork from those areas and elsewhere in the region allows more to be read into the limited evidence from this project than if it were considered in a narrowly local context alone.

### Woodland terminology

Oliver Rackham's term 'treeland' is used here to refer to all types of tree growth including wildwood, managed coppice, hedges wood pasture etc. Woodland is really too bland a term in our context. At many periods non-woodland trees such as hedges or trees along watercourses and in pastures would most likely have been substantial landscape features in the east London Gravels region, with managed woodland of varying types and possibly wildwood lying at a distance from settlements and arable land. On form of intensive woodland management evidence in the archaeology of the region is coppicing, where tree stems are cut producing multiple, fast re-growth that is harvested every few years for firewood, fencing and light construction. This is known archaeologically from the London region from the Bronze Age (Not Neolithic as in popular book, which is known from SW England). In fact the clearest evidence

comes from Bronze Age contexts along the A13 corridor quite close to the East London Gravels project area (Goodburn 2003 Un Pub).

***Hunts Hill Farm is noted as having a large amount of charcoal in Iron Age contexts, a systematic study of this material could throw some light on treeland in the area from a period where we have no more than half a wheel barrow load of recorded dated woodwork from the London region as a whole.***

## PREHISTORIC WOODWORK

The potential of the traditionally used indicators of vegetation change such as pollen, plant macro fossils, charcoal, snail and insect remains are dealt with in other contributions, principally that by John Giorgi and A Pipe (Above?). The key consideration here will be to consider the evidence along side contemporaneous evidence from the flood plain sites close by for local tree-land (***need more data?***). By such a comparison it may be possible to distinguish what are broad regional indicators and what are local and special to the gravel sites above the wetlands. Essentially the full study of the relevant samples is a very important chance to balance the picture of landscape change gained from the more recently excavated wetland-flood plain sites.

Very little waterlogged woodwork appears to have been found of prehistoric date apart from a small Iron Age oak stake from the fill of a waterhole. This is now on display in the new MoL Prehistoric Gallery where it is difficult to see clearly (J. Cotton pers com.). Iron Age woodwork is very rare both nationally and regionally thus, this item could be examined more closely for tool mark evidence etc, and should be illustrated in any final report (if the dating holds). Waterlogged woodwork from other sites close by such as that found on the A13 project (Goodburn 2003) or Swalecliffe on the N Kent coast (Goodburn in Masefield et al 2003), can provide a fuller picture of what the water holes at the East London Gravel sites may have looked like in use (Draft Fig 1).

## THE ROMAN PERIOD WOODWORK

The changing character of the London region corpus of archaeological evidence for Roman period woodworking

Before considering the evidence from Hunts Hill Farm and Moor Hall Farm it is essential to briefly review the broadening character of the comparative material from the region. Initially views of Roman woodworking styles were based on studies of structural remains in the core areas of the City of London and the N Southwark suburb. The sources of evidence were principally timber foreshore structures and well linings (Milne 1982, Wilmott 1982, and Weeks 1982). Later studies of waterlogged timber framed building remains expanded the view and added technical details (Goodburn 1991, Goodburn in Brigham et al 1995). A suite of tools and

techniques could be seen as ‘typically Roman’ and not known from pre-Roman native contexts or the following period such as; the use of cross-cut and planing saws, accurate measurement and standardisation, timber frame prefabrication, complex joints and the widespread use of iron nails.

However, over the last six years or so it has become clear, from excavated evidence from several sites on the outer suburbs of London, very early City contexts and hinterland sites that there were other traditions of structural woodwork used in parallel with formal Roman methods ( Hill and Woodger 1999, Goodburn in Leary et al in prep, and Hill et al One 94 - In Prep) . Whilst we can document these different styles of working, using round or cleft timbers, cross cutting without saws etc. it is uncertain to what factors we can attribute their existence. They may represent a continuation of aspects of native practice in rural settings, and or reflect class distinctions in the users of the woodwork. The distinctions might even result from the settling of retired mercenary troops from outside the empire who built as they did at home. The assemblage of structural woodwork from Hunts Hill Farm and Moor Hall Farm illustrate many features of this less formal Roman period work (see below) distinct from what we would expect in the ‘civilised’ core areas such as the City.

Here we are very largely concerned with woodwork from three wells including the timber linings and material preserved in the fills. Isolated and decayed fragments have been ignored.

#### THE WELL PRESERVED TIMBER WELL LINING [265] FROM MOOR HALL FARM (RH-MF 79)

This well is dated by pottery in the fills to the late Roman period. The lifted and conserved timbers from this well were the lower part of the lining. Three tiers of planks set on edge were lifted and recorded (Draft Fig 2). They are all of oak. The planks were jointed at the corner with what at first site seemed like a laft joint (quarter depth notch cut in the edge of a timber common in Saxon work). However, the joint was cut more deeply, the full half width of the planks so that each course lay more or less flush and was not joined to the one below or above. During the building backfill must have been rammed in evenly behind each course to hold it in place. With the overlapping ends, the well lining was rectangular in plan about 1.5 x 1.3m (Draft Fig 3 -photo in situ-). Internally the dimensions were c. 0.77m by 0.92m, all these dimensions do not follow any Roman standard.

The planks made by cleaving and axe trimming, in the pre or post- Roman style

The planks of the lower two courses were made by cleaving medium sized oak logs c. 0.45m diameter in half followed by trimming with axes to form rather rough, slightly twisted planks of varied width and thickness up to c. 360mm wide by 90mm thick. The planks of the well became thinner and narrower higher up and the 3<sup>rd</sup> course included some planking radially cleft from a larger straighter parent log (Draft Fig 4). The ends of the planks were all axe cross-cut rather than sawn. This type and method of conversion of planks is not known from Roman London where planks found to date



and recorded in detail have always found to have been prepared by sawing methods from hewn baulks. The conversion methods and axe cross-cutting does again look more native or Anglo-Saxon than Roman compared with the formal work found in Roman cities such as London or York.

The tool mark survival is remarkably good even post conservation and it is clear that much of the work was carried out with a narrow bladed (c. 70mm width of blade) general purpose woodman's axe (Wheeler 1927). However, close examination of some of the very deep and straight halving notches has revealed traces of the use of a typically Roman tool, a cross-cut saw or 'serata'. Thus, although the structure presents a very rustic appearance one of the classic Roman woodworking tool types was used in its making, the cross cut saw. The Anglo-Saxons used axes and adzes for this type of work as in the rather similar lafted well lining recorded recently from Barking Abbey for example (Goodburn 2004).

#### Parent tree types

The parent tree(s) for the plank logs were of medium growth rate and only moderately straight and fairly knotty for the lower courses. They would have been c. 0.45 m diameter at chest height and were not high quality for cleaving. A straighter, less knotty log from a larger girth tree was used for the radially cleft 3<sup>rd</sup> course boards which must have been around 0.7m in diameter but was fairly fast grown. This range of timber can be found in the London region in managed ancient woodland to day; it does not derive from wildwood.

#### *Possible tree-ring dating?*

Tree-ring dating post-conservation has been successful in a number of cases and it may be worth attempting in this case. Several of the planks appear to have around 70 rings and full sapwood occurs on some. Any slices removed could be replaced and glued back in position. Dating would not have been easy in 1979 but now a positive result is much more likely with the chronologies now available for the region.

#### WELL [525] HUNTS HILL FARM (UP-HH 89)

The well is dated by associated pottery to the Roman period. In this case some of the timbers which formed a well lining were a little more 'Roman' in aspect ( see Wilmott 1982 etc) with more regular but still varied oak planks, set on edge, forming a box lining. This survived four tiers high and measured internally c. 0.6m or two Roman feet or 'pes' a common size for a box well (Draft Fig 5 photo in situ). The corners were jointed with either bridle joints or single dovetails both of which are well known from other Roman London wells. But they were not nailed or pegged, being supported further at the corner with stakes, and diagonal corner struts which also seem to have been used as built-in ladders in some cases in London examples. The pattern of jointing was not as regular as those of typical City of London examples. One of the

lining planks had a female bridle joint and on one end and a male part at the other , timber [595] (Draft Fig 6). Each box was laid and probably back filled as a unit.

The conversion of the planking, a mix of Roman and pre-Roman methods

The surfaces of the timbers had suffered some ancient and post-excavation damage by the time some of the material was seen by this writer in 1996 when the method of conversion could not be seen from the tool marks. Most of the timber were tangentially faced and may have been sawn out, but others were radially faced and may even have been cleft and hewn out ? Some of the sawn examples were probably cut out in threes or fours from small hewn baulks. The variation in the planking was considerable with widths varying between 280mm and 190mm with the narrower planks being thicker at up to 70mm whilst the wider were only c. 30-50mm thick.

Saving money with second hand timbers (*in this well rather than that discussed below as suggested in the popular book*)

At least some of the planking was reused as it had relict peg holes and in one case the plank had two free tenons set in its edges. Joints like this are known from Roman classical style boats and ships (Marsden 1994) and it is possible that such a plank could have derived from a vessel as the site would lain relatively near navigable water to the south. But an origin in large furniture may also be possible.

Collapsed wattlework?

A number of broadly similar, small roundwood stake tips eg. [554], [556] etc , were also found in this well (c. 20 were lifted) which may have been part of a well head fence or part of wattle shoring for inserting the well? The points of the stake tips. were cut to two faceted or pencil type points and they varied in diameter from c. 30mm to 50mm..

Wood Sp id/ age samples were taken. Such analysis can be very useful for reconstructing early woodmanship practices such as coppicing on a short rotation or salvaging mixed branch wood or hedge prunings. Occasionally even orchard prunings have been found used for wattle work in Roman London containing exotic species such as Stone Pine (Goodburn in Wroe-Brown et all in prep) .

Parent tree types

The tangentially faced planking so far closely examined clearly derives from very fast grown young oaks with less than 40 rings. These must have derived from fairly open managed woodland or possibly hedgerow locations where trees typically grow fast in girth. The radially faced planking derives from larger, slower grown trees that may have grown in less managed conditions possibly a pocket of wildwood.

It is likely that the roundwood will be found to have derived from a form of managed woodland possibly growing along side lager timber trees or 'standards' as was common in later medieval times in the region and has been reconstructed from some Roman period assemblages (Goodburn 1991, 2001).

### *Possible tree-ring dating*

*Suitable samples from the radially faced planking were taken which could possibly provide a date. Two were apparently taken in the late 1990's and may still be in viable condition (from planks [540] and [571]).*

### WELL BASE FRAME [5413] (UP-HH 89)

The associated pottery for this well has provided dating to the 2-3<sup>rd</sup> centuries AD. This well was disturbed in antiquity when the corner posts and lining appear to have been extracted. Here we are concerned with; a rectangular base frame of small beams [5355], [5356], [5411], and [5579] that were found in situ, part of the slightly dislodged oak plank lining [5410] and worked wood debris.

The base frame beams were jointed at the corners with cross-halving joints and pierced by square through mortices for the corner posts (Draft Fig 7). This type of construction is very well known in urban Roman carpentry in framed structures, such as wells, tanks, cisterns and buildings (Goodburn 1991, Goodburn in Hill et al In Prep One 94). The shoulders of the halvings were cut out in the typical Roman way using a cross-cut saw (Draft Fig.8) as shown by the tool marks, but the ends of the beams were cross cut with axes in a more 'rustic' or native style. The beams were hewn to a rectangular cross section, leaving much sapwood and wane, from small half oak logs (Draft Fig. 8). The torn grain on the heartwood surfaces of the beams suggests that they had been cleft out rather than sawn which is again rare in urban Roman work. The clear matching grain pattern shows that beams [5355] and beam [5411] were clearly part of the same parent log. The cleft half logs were hewn to rectangular sections and in 1996 axe stop marks at 45 degrees and c. 80mm wide survived on beam [5353].

Small pieces of cut roundwood and off cuts had been used as leveling chocks under the basal beams and as duckboards. Fragments of oak tenons survived in the mortices showing that the posts had been oak.

In the fill of the disused well there were several pieces of worked roundwood, a short radially cleft oak stake, and some narrow barrel-stave-like elements (or possible fence pales?). Some of this material may have been parts of upper works around the well head such as fencing. Of most interest was a slightly crooked piece of what appears to be an elm branch with a small through mortice cut in it [5695] (Draft Fig 9). The function of this item is unclear and it is the only piece of elm wood of Roman date currently known to this writer from the London region. As timber of the elm family was much recommended by various classical scholars and is documented archaeologically in use in the Roman northern Mediterranean (Meiggs 1982, Guibal

1998) it may be the case that there had been a serious elm disease episode during the Roman period in the region. Later the elms were to be very common trees of the flood plain edge woodlands either side of the Thames and much used in medieval and post-medieval structures in south Essex, such as Hornchurch Chaplaincy (Goodburn 2005, *we could really do with checking the Sp Id as it is only roundwood atypical ash might just be a possibility?*).

Possible tree-ring dating

As all the timber from this well was cut from trees under 45 years old tree ring samples were not taken.

A rare find of Roman period holly

From well [272] at Hunts Hill Farm holly wood was retrieved, this may have been a fragment of well head wattle work as it makes strong roundwood stakes that last fairly well but its depositional context is not clear.

## ANGLO-SAXON AND NORMAN WOODWORK

Earlier in this project some dry evidence in the form of post holes and slots were examined with a view to reconstructing what the implied buildings may have looked like but no coherent plan groups were found.

## THE UNDATED DUGOUT WELL LINING COMPLEX [2709] ETC UP-HH 89

This well had a partially surviving timber lining quite different to any of those described above but was not found to have dateable finds associated with it. The lifted timber well lining elements were all rather decayed but appear to have comprised a hollowed oak log lining [2900], with some earth fast staves of oak set on end in a partial arc around the dugout shaft. A small oak roundwood stake was also found in the well fill.

The least decayed dugout section was of oak about 60mm thick, it appeared to have been carved from a log split into at least two sections and then hollowed. As has been found in a Late-Saxon examples from London and a very large example of 1115 from Tonbridge (Goodburn in Birch et al One 94 Medieval, and Goodburn 2004). An example of probable Bronze Age date was found recently by a John Samuels Archaeological team working in a near by Rainham gravel pit. Thus, an earlier date may be possible but unlikely? The staves surrounding the truncated dugout lining were all of cleft oak either tangentially or radially faced. They survived up to 0.37m long and a maximum of 160mm wide and varied between 25 and 30mm thick. These timbers may either have been shuttering during the insertion of the dugout well lining or the base of a well head fence?

### Possible tree-ring dating

Three tree-ring samples were taken from this group and may date, it would appear to be worthwhile to try to match them

If tree-ring datable material from this group has not survived a C14 date would be very useful of suitable material from the well.

### FURTHER WORK

Apart from some editing, possibly involving the attribution of closer phasing, a selection of draft figures should ideally be redraw for publication and the remaining species id and tree-ring samples examined.

### ACKNOWLEDGEMENTS

D. Swift, J. Hill and P. Rowsome are thanked for directing this writer to the key site archives.

## DRAFT FIGURES LIST

Fig. 1 A reconstruction drawing of a revetted Late bronze Age 'waterhole' from Swalecliffe, Kent, were the ELG waterholes of similar appearance?

Fig.2 A modified draft axonometric of Roman period 'barbarian looking' timber well lining [265] RH-MF 79.

Fig. 3 A photo of well lining RH-MF 79 [265] in situ .

Fig. 4 . Two cleft planks from [265] , one tangential one radial.

Fig. 5. Photo of UP-HH 89 Roman well [525] in situ .

Fig. 6. Three planks from well lining [525].

Fig. 7 A reconstructed plan view of Roman well base frame [5413],

Fig. 8 Two beams from well base frame [5413], and saw cut shoulders to the having joints.

Fig. 9 Elm branch with rough through mortice from well [ 5423].

Fig. 10 Timbers from the dugout well [2709] and some surrounding oak staves.

***Below to be completed in 2 days***

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