

Archaeological Investigations on the Site of a Medieval and Post-Medieval Watermill at Holywell Ford, Magdalen College, Oxford

By CHRISTOPHER BELL

with contributions by LEIGH ALLEN, PHILIPPA BRADLEY, GILLIAN CAMPBELL, JOHN MOORE, JULIAN MUNBY, NICOLA SCOTT and CATHERINE UNDERWOOD-KEEVILL and illustrations by PAUL HUGHES

SUMMARY

An archaeological evaluation, followed by a small area of excavation and a watching brief, carried out in connection with a development adjacent to Holywell Mill, Oxford, recorded walls belonging to at least four phases of earlier mill buildings, dating from the medieval and post-medieval periods.

A watermill has existed on the site since at least 1200, and the mill remained in use as a working corn mill until shortly before its conversion into a private house at the end of the 19th century. The foundations discovered in the excavation appeared to be remains of ancillary buildings on the north side of the mill, and the earliest of these, which was dated to the 15th century, had ashlar blocks lining the inside face.

The discovery of large backfilled features immediately to the north and east of the mill may suggest the location of the mill pond and the existence of a bypass stream, which ran round the back of the building. A large curving ditch, which had been backfilled in the 17th century, was located some 40 m. further to the east of the mill, and it is suggested that this may have been part of a preliminary Civil War defence, later to be replaced by the bastion which appears on maps of the defences.

A prehistoric soil horizon was also found during the excavation and a small number of worked flints dated to the Neolithic/Bronze Age were retrieved.

INTRODUCTION

In November 1993 Oxford Archaeological Unit (OAU) undertook a small archaeological excavation in the area immediately to the north of Holywell Mill, Oxford (Fig. 1), in advance of a development of new student accommodation blocks. The excavation, and a periodic watching brief of the construction work which followed, arose from a planning agreement made between Magdalen College and Oxford City Council planning authority.

Documentary sources had revealed that a watermill had existed on the site since at least 1200, and the potential for archaeological remains surviving was established by a trial trench evaluation undertaken by the OAU in July of 1993.¹ The aim of the subsequent excavation

¹ C. Bell, 'Holywell Ford, Oxford' (Oxford Archaeological Unit unpubl. evaluation report, 1993).



Fig. 1. Site location; location of excavation and evaluation trenches.

and watching brief was therefore to record any archaeological remains in the areas where they would be disturbed or destroyed by the foundations of the new development.

LOCATION AND TOPOGRAPHY

The site (NGR SP 522065) is situated towards the east edge of the second gravel terrace which is bordered to the east by the river Cherwell. The land to the east of the mill slopes away very gradually towards the river from 57.16 m. OD to 56.46 m. OD.

The modern name Holywell Ford, which appears on the OS plan of 1900, is probably of no antiquity but may refer to a beast ford south of the mill giving access to the meadows. The mill has always stood alone in extensive grounds within the parish of Holywell, which lies to the north-east of the medieval City of Oxford. The present building on the site of Holywell Mill, known as Holywell House, dates from the end of the 19th century, but still retains parts of the old mill and its ancillary buildings. The new student accommodation blocks extend northwards along the mill stream at the back of the house, and eastwards across the island formed between the mill stream and the river Cherwell. The main area of excavation lay immediately north of the east wing of the present house, in the footprint of one of the new buildings, and two other trenches excavated as part of the evaluation were located in the area to the north and to the east of the house, in what was then an orchard garden.

ARCHAEOLOGICAL DESCRIPTION

Comments on the reliability of the results

The small size of the areas excavated does affect both the reliability and level of interpretation of some of the deposits that were found, and this is particularly true of the large features located in the areas to the north and east of the mill. The constantly high level of the water table also meant that deeper areas of excavation flooded continuously, making the excavation and observation of some of the deposits more difficult.

Trench 1 (Figs. 1, 2, 3, 4 and 5)

This was the main area of excavation, consisting of a trench 7 m. long \times 6 m. wide located to the north of the east wing of Holywell House (see Fig. 1). An extension from the south-east corner of the trench, 2 m. long \times 1.50 m. wide, was part of the trial trench which was excavated in this location as part of the original evaluation. The description and plans of this area of excavation incorporate information obtained from the evaluation trench and also from the watching brief of the contractors' ground work which followed later.

Prehistoric: The top of the natural gravel was found some 1.2 m. below the present ground surface, sloping gradually from west to east. A thin layer of reddish silt (562), which overlay the gravel in patches throughout the trench, also appeared to be a natural subsoil. A thick deposit (0.30 m.) of greyish silty clay (549) overlay the natural gravel and silt throughout the trench, and several worked flints, including a scraper (Fig. 8) were retrieved from this layer. This deposit, which also contained small fragments of charcoal, appeared to be a buried soil horizon.

Medieval: The earliest of the medieval deposits located were a shallow scoop (543), which was cut into the top of layer 549, and a series of dump layers (527, 541, 501, 528 and 538) which overlay it. The pottery retrieved from these deposits ranged from the 13th to the 14th century in date.

An east-west aligned wall (521) ran along the south edge of the area of excavation and partially truncated the dump layers (Fig. 2). Only the north face of the wall was within the excavation area, and the western end of the wall had been robbed, where a regular trench was visible, continuing westwards on the same line (547). The date of this robbing is uncertain, as the only find to come from the backfill of the robber trench was a residual sherd of 13th-century pottery. At 2.5 m. from the west edge of excavation the wall had an invert, then continued for another

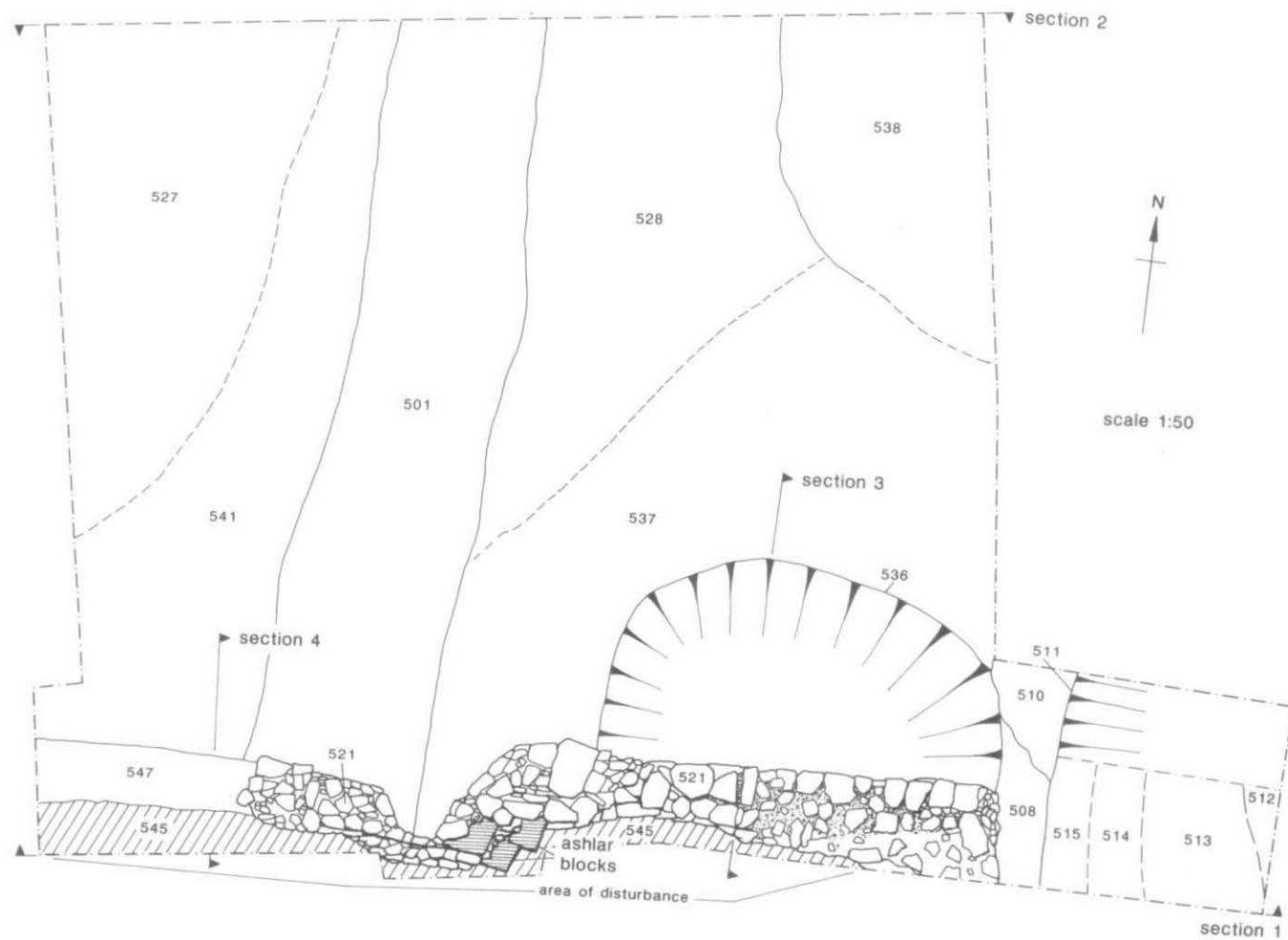


Fig. 2. Plan of Trench 1 and first phase of wall.

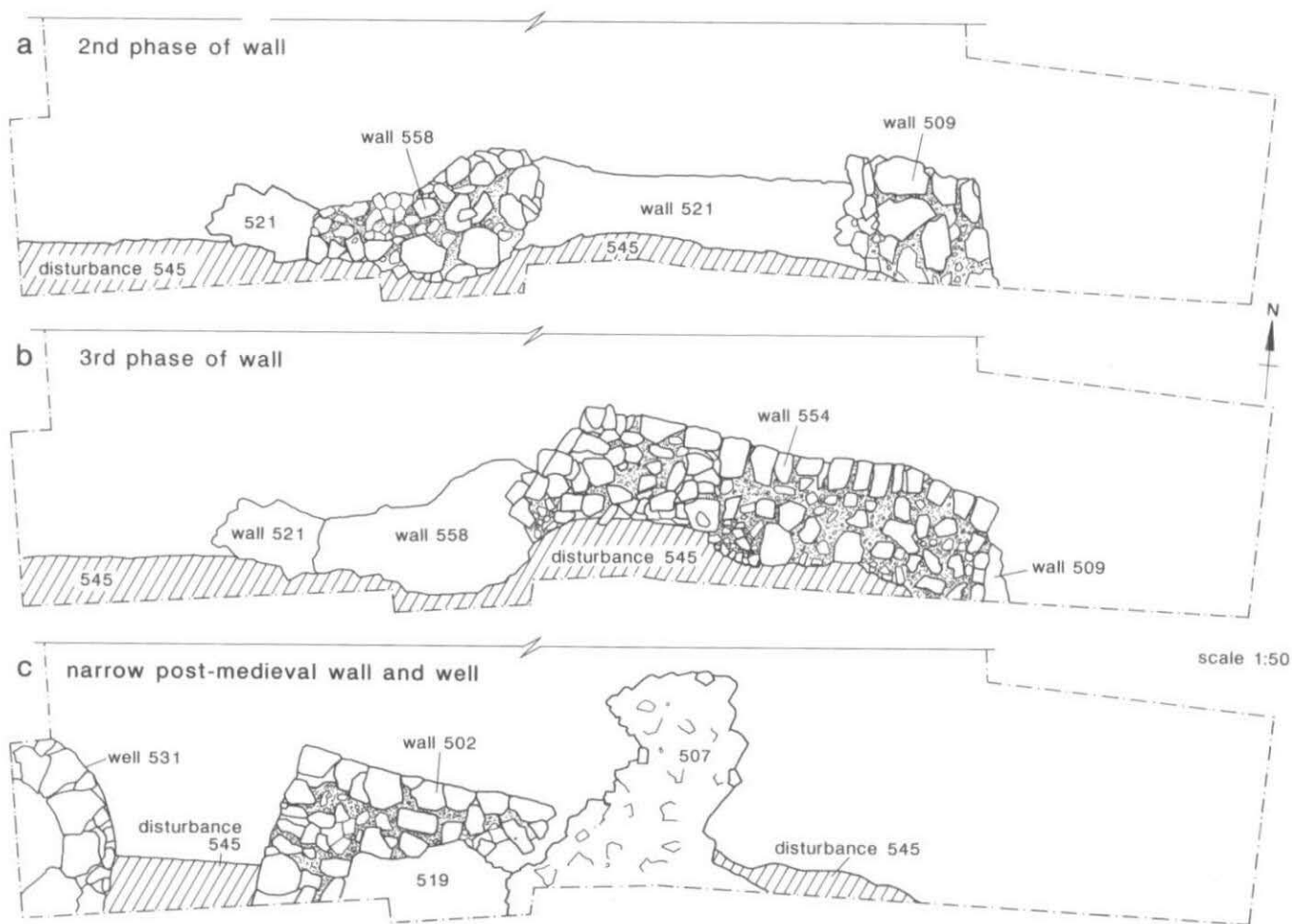
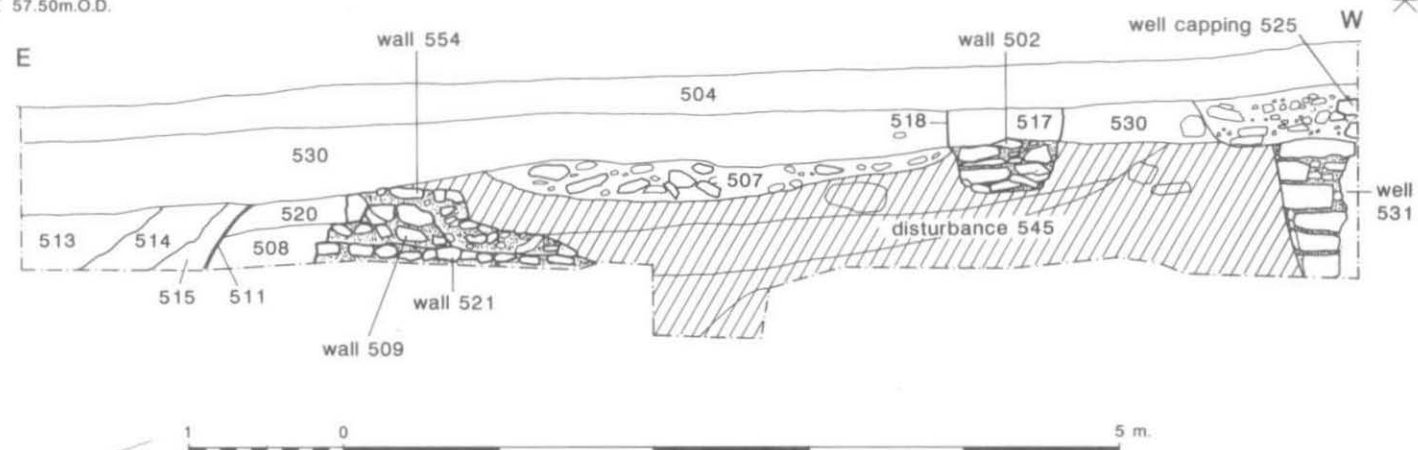


Fig. 3. (a) Trench 1, plan of 2nd phase of wall; (b) Trench 1, plan of 3rd phase of wall; (c) Trench 1, plan of narrow post-medieval wall and well.

section 1

57.50m.O.D. 

section 2

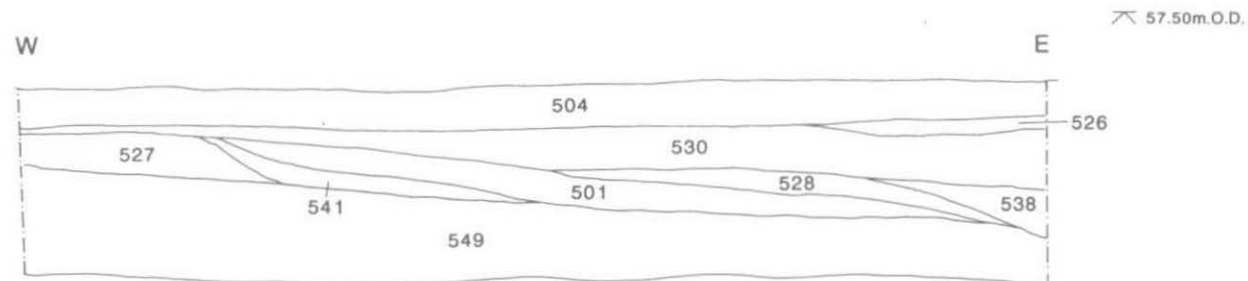
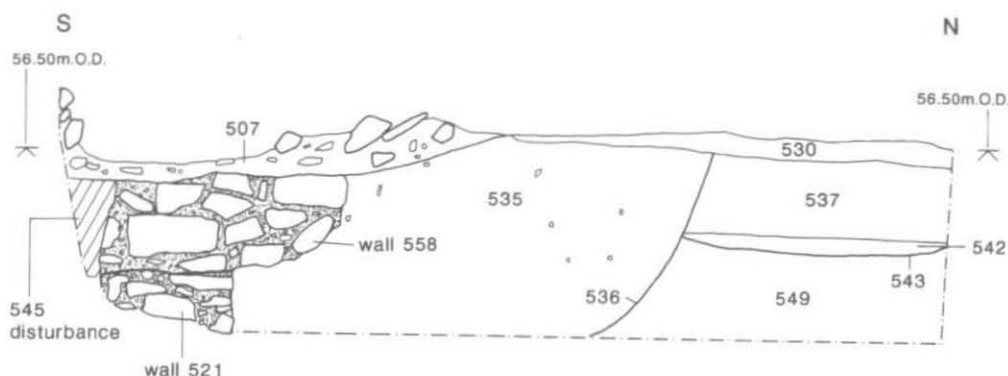
57.50m.O.D. 

Fig. 4. Trench 1, sections 1 and 2.

section 3



section 4

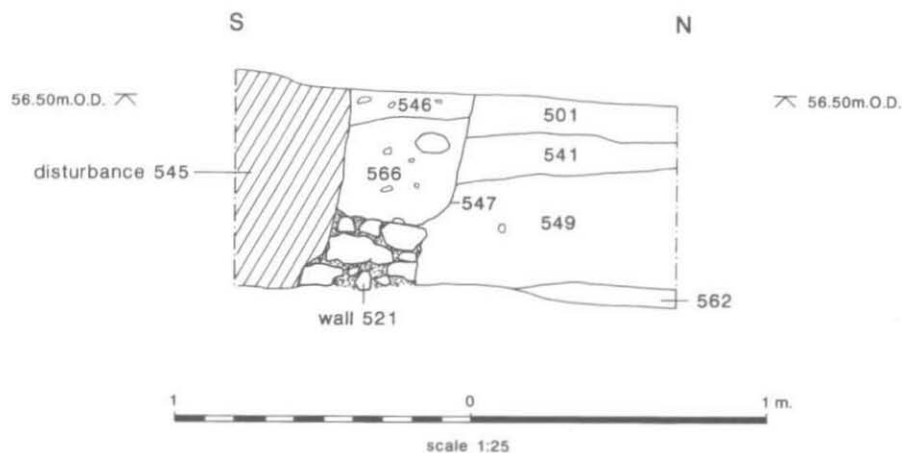
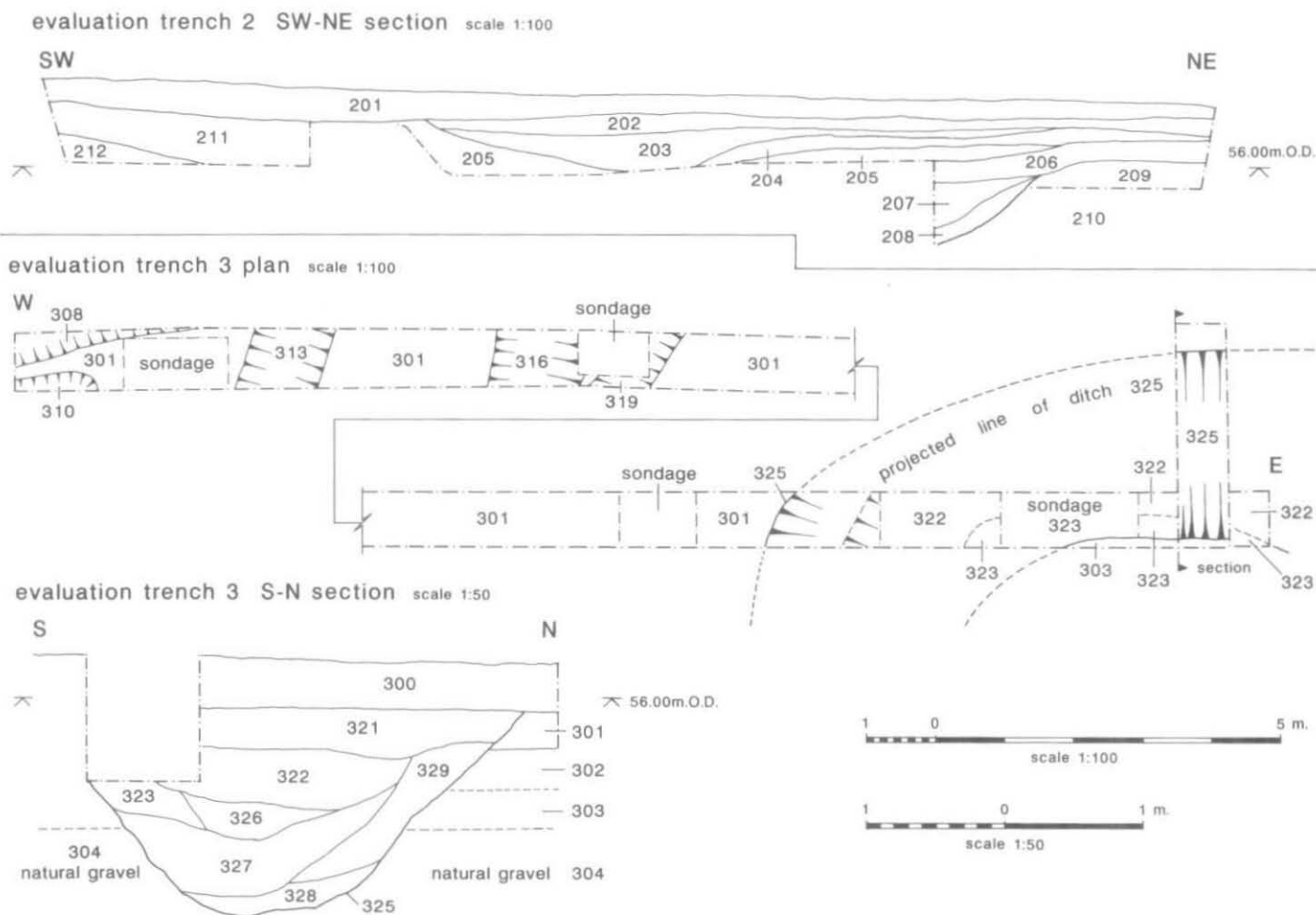


Fig. 5. Trench 1, sections 3 and 4.

4 m. before returning to the south. A small extension made to the south edge of the area of the excavation revealed the wall to have ashlar blocks lining its inside face, though only a few of these survived, the majority having been robbed away. A large, reused, architectural fragment which was built into this wall was retrieved for dating evidence (Fig. 7); this has been identified by Julian Munby as dating from the late 13th or early 14th century.

Post-medieval: Two thick deposits of gravelly clay (510 and 537), which lay to the north of the wall were truncated by a large pit (536). The earlier of the two layers (510) was undated, but the later deposit (537) contained pottery from the 16th century. The pit (536) appeared to have been cut up against the north face of the wall, suggesting that the building was still standing at this time (see Fig. 5, section 3).

Overlying the wall with the ashlar blocks, and also partially overlying the pit, were two separate stretches of a



later wall (509 and 558) (see Fig. 3a). Although these wall fragments were not continuous, they were very similar in character, and were both bonded with a distinctive pale-coloured mortar, suggesting they were part of the same wall, heavily robbed and much disturbed by later building phases. The eastern stretch of this walling (509) returned to the south at the same point as its predecessor (521), and although it appeared to be using the earlier wall as a foundation, its northern face projected out slightly further to the north.

Directly above the second phase of walling was a third, more substantially built wall (554), on the same alignment but still further to the north (Fig. 3b). A 3.5-m. stretch of this wall survived to a maximum of three courses and it returned to the south at the same point as the earlier walls. All along the length of this wall the stones were stained black and red by burning.

Two layers of clay (508 and 520) which butted up against the south return of the walls were undated (Fig. 2 and Fig. 4, section 1). The eastern limit of these deposits was defined by the west edge of a large feature (511) running north-south, 0.50 m. to the east of the walls. Only a small part of this feature was within the area of excavation and it could only be excavated to a depth of 1.30 m.; however, its near-vertical edge clearly continued down below this level. The feature was filled with layers of clay silts and gravel, tipping in steeply from the west (512, 513, 514, 515 and 516).

An area of deep, irregular disturbance (545), which truncated the walls along the south edge of the area of excavation, only extended along the inside face of wall 521, suggesting that it may have been related to the robbing of the ashlar blocks which lined this face. The layers of backfill within the disturbance (544, 552 and 553) contained 17th- and 18th-century pottery and clay pipes.

A stone-lined well (531), which was discovered in the south-west corner of the trench, was cut through the backfilled disturbance (Fig. 3c and Fig. 4, section 1). The remains of the north-west corner of a stone-built structure (502), consisting of a narrow north-south wall and part of the east return, was also cut into the top of the backfilled disturbance (Fig. 3c). A layer of clay and limestone (519) and a deposit of limestone rubble (507) which were also located at this level appeared to be related to the destruction of the narrow-walled structure.

Above this level was a layer of clay loam (530), which extended throughout the trench. A feature containing large blocks of limestone (525) was cut through the loam in the area above the well and this appeared to be a deliberate capping off of the well. A robber trench above wall 502, and an animal burial (534) located in the centre of the trench, were also cut through the loam. These features were directly overlain by the present topsoil (504).

Evaluation Trench 2 (Figs. 1 and 6)

This was a north-east/south-west aligned trial trench, 17 m. in length and 0.80 m. wide, which was excavated in the area to the north of the mill as part of the original evaluation. The depth of excavation in this trench was limited to a maximum of 1.20 m.

The deposits in this trench consisted entirely of layers of clay tipping in from the ends of the trench towards the centre (contexts 202 to 212). The later deposits in the sequence, (layers 207, 206 and 205) contained 18th-century pottery, clay pipes, and fragments from onion-shaped wine bottles, but no finds were retrieved from the deposits below this level.

Trench 3 (Figs. 1 and 6)

This was the third of the trial trenches excavated as part of the evaluation. This trench was located some 40 m. to the east of the mill in an east-west alignment; it was 25 m. in length and 0.80 m. wide, with a 2.50 m. extension projecting out at right angles from the east end.

Three layers of alluvium (303, 302 and 301) overlay the natural gravel throughout this trench. Sondages excavated through the alluvium located the top of the gravel at an average depth of 1.10 m. below the present ground surface.

A large curving ditch (325), which cut through the layers of alluvium, ran obliquely through the east end of the trench. The ditch appeared to be approaching from the east in an east-west alignment, then curving round to the south. An extension was made to the trench so that a section could be excavated through the ditch at right angles, and here it was established that the ditch was some 4 m. wide and 1.50 m. deep. The deposits backfilling the ditch (contexts 321 to 329) contained 17th-century pottery and clay pipes. A small number of residual medieval pot sherds were also found in these deposits, along with a sherd of late Iron Age/early Roman pottery.

A number of shallow irregular features (308, 310, 313, 316 and 319) cut from the same level at the west end of the trench contained 19th-century brick and tile.

All the features in this trench were directly overlain by the present topsoil.

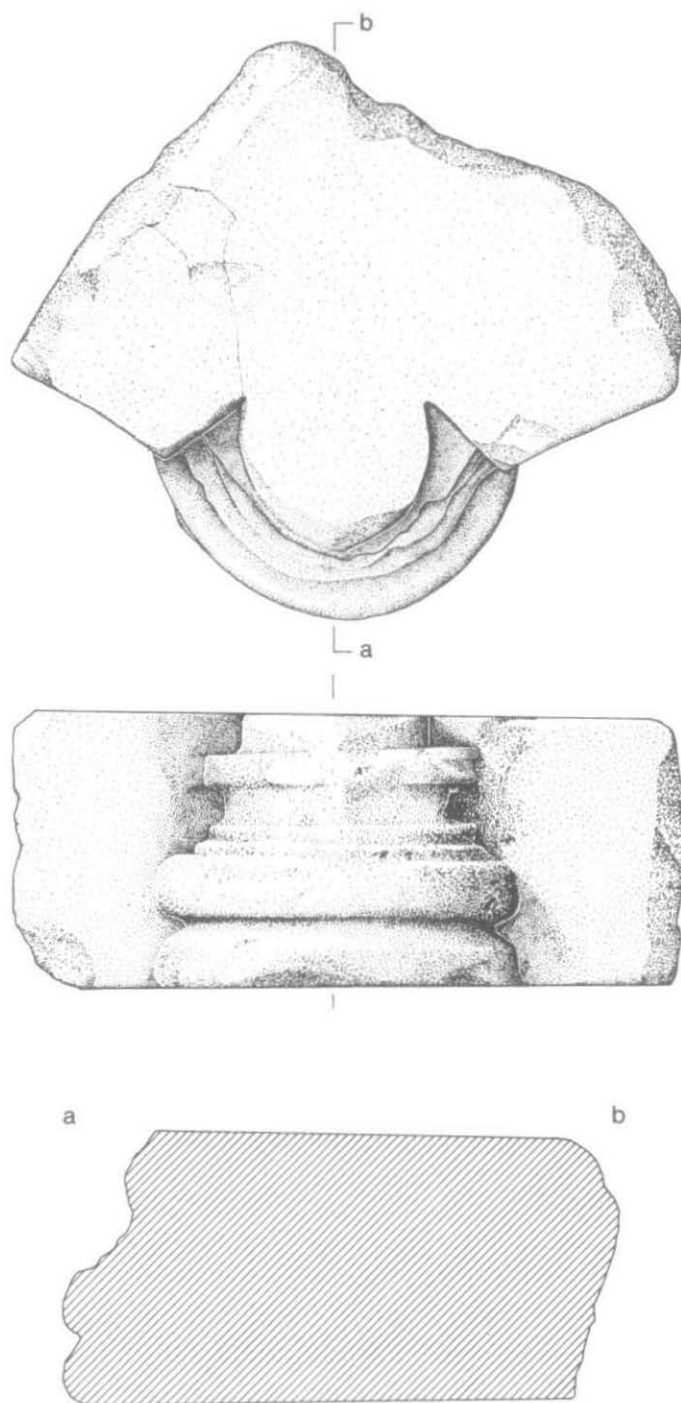


Fig. 7. Architectural fragment reused in wall 521 (scale 1:4).

THE FINDS

Medieval Pottery by CATHERINE UNDERWOOD-KEEVILL

The pottery from Holywell Ford consists of a small assemblage (188 sherds weighing 3.2 kg.) of late medieval and post-medieval material ranging in date from the late 13th century through to the early 18th century. Some residual Roman and early medieval sherds were identified in isolated instances. The main aim of the analysis was to provide a means of dating the stratigraphic sequence and also to compare the pottery with other larger assemblages in Oxford.

The pottery has been described and recorded with reference to the Oxford Archaeological Unit fabric reference series² and the Roman fabric coding³ and the post-medieval vessel type groups as illustrated at St. Ebbe's, Oxford.⁴ All material was counted and weighed by fabric by context, rim and base eves (estimated vessel equivalents) calculated, and vessel types drawn for archive. All pottery represented has been illustrated in previous publications, and is therefore not illustrated here.

Two sherds of Roman pottery were present in contexts 500 and 324. These comprised a late Roman black burnished shallow dish (context 500) and a possible late Iron Age/early Roman coarse sandy greyware in context 324.

The medieval pottery comprises only a small proportion of the total assemblage (42 sherds, 0.36 kg.; 22% by number). The main fabric tradition is Oxford Late Medieval ware (fabric AM). The fabric type is a product of the Brill/Boarstall kilns in Buckinghamshire and is represented by highly decorated jugs in this instance together with partially-glazed baluster jugs. Other medieval fabric types are under-represented at this site, with only one to two sherds of early medieval fabric types, such as St. Neot's ware (fabric R), a Saxo-Norman flint gritted fabric (fabric BF) and Oxford Early Medieval ware (fabric AC). Other common Oxford types such as Oxford Medieval ware (fabric Y), a sandy Berkshire fabric (fabric AG) and a West Berkshire fabric (fabric AQ) are also limited in number. The implication of the lack of pre-13th century material is that the site dates from the mid to late 13th century when the Brill/Boarstall industry dominated the market. The presence of highly decorated jugs however does not automatically suggest a high status site; the range of material is perfectly consistent with other medieval households in Oxford.

Only a few contexts can be described as medieval contexts, in that the contexts contained only medieval material. These contexts can be dated from the early-mid 13th century onwards on the basis of the diagnostic sherds and include contexts 324, 501, 528 and 542.

The post-medieval pottery forms the majority of the assemblage (146 sherds, weighing 2.8 kg., 78% by number), dating from the 16th century to the 19th century, and consisting mainly of local glazed red earthenwares which supersede other pottery types in the mid-late 17th century.⁵ Brill post-medieval pottery is also present in small quantities. Imported material dates from the late 16th to early 17th century and includes Tudor Green/ Surrey White ware vessels, Rhenish tankard sherds, and Cistercian-type tankards. Tin-glazed drug jars and Cologne/Frechen face jugs and drinking jugs dating from the early-mid 17th century are present in small numbers. English stoneware tankard bases, Staffordshire mottled brownware bowls and Staffordshire slipware platters are all represented and date from the early 18th century onwards. The majority of the local earthenwares are open forms, slip trailed dishes with green glaze painted on the slip decoration and large panchions and porringers which date from the late 17th century when the local industry expanded its range to include vessel types not covered by imported material.⁶ The rims of the dishes and porringers suggest that the red earthenware vessels date from the late 17th century to the mid 18th century. The presence of Staffordshire white salt-glazed ware and factory wares such as Creamware and Transfer Printed ware indicate a late 18th-century to 19th-century progression.

To conclude, the site at Holywell Ford compares well with late medieval and post-medieval sites in Oxford and appears to be typical in its range of fabric and form types. The presence of some vessels such as the English stoneware tankards and the earthenware platters and Staffordshire dishes are indicative of taverns and alehouses, but the small amount of material is inconclusive.

² R. Haldon (with a contribution by M. Mellor), 'Late Saxon and medieval pottery' in B. Durham, 'Archaeological investigations at St. Aldate's, Oxford', *Oxoniensia*, xlii (1977), 111-39.

³ P. Booth, 'The Pottery', in P. Booth, A. Boyle and G. Keevill, 'A Romano-British Kiln site at Lower Farm, Nuneham Courtenay, and other sites on the Didcot to Oxford and Wootton to Abingdon Water Mains, Oxfordshire', *Oxoniensia*, lviii (1993), 87-218.

⁴ M. Mellor, 'A summary of the key assemblages. A study of the pottery, clay pipes, glass and other finds from fourteen pits, dating from the 16th to mid 19th century', in T.G. Hassall, C.E. Halpin, M. Mellor and others, 'Excavations in St. Ebbe's, Oxford, 1967-76: Part II', *Oxoniensia*, xlix (1984), 181-219.

⁵ *Ibid.* 191.

⁶ *Ibid.* 215.

Ceramic and Stone Building Material by CATHERINE UNDERWOOD-KEEVILL

A total of 74 fragments of building material were examined and recorded. The majority of this was roofing material, both stone tiles and ceramic. All the material was fragmentary so few measurements could be taken. The tile consisted of Minety-type oolitic limestone tiles dated from the late 13th to 14th centuries, and a dense sandy medieval tile fabric with a reduced grey core which is present in both Abingdon and Oxford and is sometimes glazed with a dark green glaze (examples were present in context 528). The stone tile fragments were pegged tiles of grey and fossiliferous limestone possibly from West Oxfordshire.

Three fragments of floor tile were noted, one of which was decorated, but the surface was so abraded that the design could not be assigned to any type.

Animal Bone by NICOLA SCOTT

A total of 93 bone fragments were recovered of which 32 were identified to species and anatomical part (Table 1). Generally the bones are in a good state of preservation. There is some evidence of butchery with typical cleaver style cut marks. There is a small amount of burning. The dog radius and ulna from context 533 are probably articulated.

TABLE 1. ANIMAL BONE IDENTIFIED TO SPECIES AND ANATOMICAL PART

	<i>Caprine</i>	<i>Pig</i>	<i>Cow</i>	<i>Horse</i>	<i>Dog</i>
Tibia	2				
Mandible		2			
Metacarpal	3		2		
Loose tooth		1	2		
Femur	1		3	1	
Metatarsal	2		1		
Horncore	1				
Humerus	3	2			
Radius	2				1
Ulna			1		1
Phalanx	1				
<i>Total</i>	15	5	9	1	2

Flint by PHILIPPA BRADLEY

A small assemblage of 10 pieces of struck flint was recovered from the excavations at Holywell Ford. Context 549, a prehistoric old ground surface, produced five pieces of flint; the remainder came from medieval contexts and are therefore redeposited. The raw material is orange-brown with white or buff cortex and has good flaking properties. Very little cortex survives, and prepared cores may therefore have been brought to the site for further reduction. The core rejuvenation flake indicates that core platforms were being maintained on site. Both soft and hard-hammers were used. None of the pieces is particularly diagnostic in terms of dating although the assemblage appears to be homogeneous. The retouched forms consist of retouched and notched flakes, a piercer and an end scraper. The scraper (Fig. 8) is on a thin blank and is neatly retouched; both this piece and the other retouched forms would not be out of place in a Neolithic or early Bronze Age context. The assemblage is summarised in Table 2.

TABLE 2. COMPOSITION OF FLINT ASSEMBLAGE

<i>Context</i>	<i>Flakes</i>	<i>Retouched Forms</i>
114	—	1 notched flake
501	1 blade-like flake	1 piercer
533	1	1 retouched flake
549	4 (including a core rejuvenation flake)	1 end scraper
<i>Total</i>	6	4

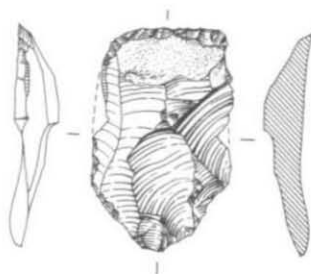


Fig. 8. Flint scraper from context 549 (scale 2/3).

Small Finds by LEIGH ALLEN

A total of 27 metal objects were recovered from the excavations at Holywell Ford; of these 7 were copper alloy and 20 iron. All the objects were X-rayed and are catalogued in detail below. The copper alloy objects include a fragment from a simple square buckle frame with an iron pin attached, of indeterminable date, two sewing pins of the late 16th–17th centuries, a nail or tack and three unidentified objects. The iron objects include a large square buckle frame possibly from a horse harness again of indeterminable date, the remains of the handle from a scale tang knife, ten nails and eight unidentified objects.

Copper alloy objects

1. *Buckle*, copper alloy and iron, incomplete. Fragment from a square buckle frame with iron pin attached. L: 34 mm. Ctx: 530 SF:7.
2. *Sewing pin*, copper alloy, complete. Pin with wire wound spherical head. Drawn pins are known as early as the medieval period, smaller finer pins (such as this one) resulting from a change in fashion are more common in the 16th and 17th centuries.⁷ L: 26 mm. Ctx: 505 SF: 1.
3. *Sewing pin*, copper alloy, complete. Pin with wire wound spherical head, traces of NFP on the shank. Comments as for cat. no. 2, above. L: 27 mm. Ctx: 507 SF: 3.
4. *Nail/tack*, copper alloy, incomplete. Circular flat flanged head, square sectioned shank. L: 43 mm. Ctx: 513 SF: 4.
5. *Sheet*, copper alloy, incomplete. Three fragments from a rectangular sheet, one has a single circular perforation. L: 26 mm. Ctx: 530 SF:5.
6. *Sheet*, copper alloy, incomplete. Seven fragments from a plain copper alloy sheet, all irregularly shaped. Length of longest fragment: 27 mm. Ctx: 557 SF: 8.
7. *Object*, copper alloy, incomplete. Fragment of fine copper alloy sheet, irregular in shape, damaged around the edges, rivet through the centre and traces of NFP on the upper face, possible mount. L:8 mm. Ctx:307 SF: 2.

Iron Objects

8. *Buckle*, iron, complete. Large square buckle frame with pin. L:48 mm. Ctx: 500.
9. *Scale tang knife*, iron and NFP, incomplete. The scale tang has two perforations, one with the rivet still remaining. The rivet and the shoulder plate are non ferrous metal, only a very short section of the blade remains. L: 75 mm. Ctx: 530.

⁷ M. Biddle and K. Barclay, 'Sewing Pins and Wire', in M. Biddle (ed.), *Object and Economy in medieval Winchester* (Winchester Studies 7, 1990), 560–1.

10. *Nails*, iron. Nails were recovered from the following contexts: 544, 507 (x3), 530 (x2), 500 (x2) and 206. Full details are available in archive.

11. *Point*, iron, incomplete. Shank only from a fine point, head missing, fine nail or possibly a pin. L:27 mm. Ctx: 514.

12. Miscellaneous material. Incomplete iron strips were recovered from contexts 528 and 308; an incomplete fragment of iron sheet from context 530; unidentified iron objects were recovered from contexts 535 and 320 (x2) and two miscellaneous fragments were recovered from contexts 550 and 530. Full details are available in archive.

Clay Pipes by JOHN MOORE

A small assemblage of clay pipe fragments was recovered from the investigations; a total of 14 bowls of which 6 were incomplete and undatable, and 61 stem pieces. The pipes have been classified according to Oswald's system,⁸ and the assemblage is summarised in Table 3.

The datable bowls correspond with the pottery dating. Bowls from context 322 (Oswald type 21 and Oxford type 12) date to the early 18th century. The bowl from context 323 is an Oswald type 6/Oxford type 7 of late 17th-century date and should not occur after 1700. The bowls from 544 and 552 which are the same feature include Oswald types 8/9, 17, 18 and Oxford type 7, 10 and 11a giving a mid 18th-century date, with examples of knife trimmed bowls of post 1720. There is a residual element of late 17th-century material in this feature.

The only makers' mark was on a stem from context 507 with ABB/OTT in relief in a square frame. This context is of 18th-century date and the only known local Abbott of this date is Ben Abbott of Ramsden dated to 1758.

TABLE 3. COMPOSITION OF CLAY PIPE ASSEMBLAGE

<i>Context</i>	<i>Bowls</i>	<i>Stems</i>	<i>Date</i>
207		2	
307		1	
320	1	4	
322	2	2	early C18th
323	1		late C17th
330		2	
500		1	
505	2	7	
507		5	
517		4	
519		3	
544	5	15	late C17th
552	3	15	early C18th (post 1720)

ENVIRONMENTAL EVIDENCE by GILLIAN CAMPBELL

One 20-litre soil sample was taken from the apparent backfill of the mill pond (sample 1, context 207), and one from the bottom fill of the large ditch (325) found to the east of the mill (sample 2, context 328).

The deposits sampled had a 1.0 kg. sub-sample processed to recover molluscs. The sub-samples were floated to 0.5 mm. with the residue sieved to 0.5 mm. and air-dried. During this processing waterlogged remains were observed in sample 2, so a portion of the deposit visually rich in waterlogged remains was selected, and 250 g. floated to

⁸ A. Oswald, *Clay Pipes for the Archaeologist*, Brit. Archaeol. Report, 14 (1975); A. Oswald, 'Clay Pipes', in T.G. Hassall et al., op. cit. note 4, 251-62.

0.2 mm. The flots and residues were assessed by Gillian Campbell of English Heritage's Environmental Archaeology Unit at the University Museum, Oxford.

Sample 1, of the 18th-century backfill of the probable mill-pond (207), contained no plant remains or snails in the flot or residue. Sample 2, of the undated base fill 328 in the large ditch 325 (filled in by the 18th century), had one unidentifiable snail in the residue. Both deposits seem to have undergone decalcification. It is possible the site is on an isolated non-calcareous area in the drift geology forming the floodplain and terraces around Oxford.

The waterlogged remains in sample 2 were poorly preserved and much was fine decayed organic matter. Identifiable plants were present in small amounts. The aquatic plants water star-wort (*Callitriche* sp.), water plantain (*Alisma plantago-aquatica*), and *Damasonium* sp. show the base of the ditch contained only shallow still water or mud. Gypsy-wort (*Lycopus europaeus*), characteristic of damp banks, was also recovered. The other herbaceous plants indicate that the ditch's setting was probably open disturbed ground: buttercups (*Ranunculus acris/repens/bulbosus*), fat hen (*Chenopodium album*), dock (*Rumex* sp.), stinging nettle (*Urtica dioica*), self-heal (*Prunella vulgaris*), black horehound (cf. *Ballota nigra*), rats-tail plantain (*Plantago major*), knapweed (*Centaurea* sp.), and grasses (*Gramineae*). Unidentifiable small wood fragments and a willow (*Salix*) bud show some tree or shrub cover in the vicinity.

Fragments of shell of a walnut (*Juglans regia*) probably represent a single half-shell. Walnuts have been recovered in limited numbers from Roman period deposits but seem to be absent from Saxon and early medieval England, and were only re-introduced in the high medieval period. Walnuts appear in surveys of hedgerow trees from about 1730.

DISCUSSION

Prehistoric activity

The buried soil horizon, which was located above the natural gravel in the main area of the excavation, would appear to be a relatively well preserved prehistoric ground surface, and the worked flints retrieved from this deposit have been dated to the Neolithic/Bronze Age period.

There is evidence for extensive prehistoric activity in the area immediately to the north of Oxford. Aerial photographs appear to show features ranging from Bronze Age barrows to a Roman field system, and this picture has been confirmed by several excavations, including those in the science area, where a double barrow was found,⁹ and at Logic Lane where a double ring ditch was discovered.¹⁰ There have also been a number of finds retrieved from the Cherwell and these include a Bronze Age sword, which was found just to the south of Magdalen Bridge in 1920.¹¹

Although the prehistoric activity found during the excavation was fairly low level it appears to confirm further both the extent and prevalence of prehistoric activity in this area.

⁹ B. Durham in CBA 9 Newsletter, 13 (1983), 140; B. Durham in *Oxf. Archaeol. Unit Quarterly Newsletter*, 18 (1989), 2.

¹⁰ F. Radcliffe O.P., 'Excavations at Logic Lane, Oxford', *Oxoniensia*, xxvii/xxviii (1961/2), 38-69.

¹¹ See T.G. Hassall, 'Archaeology of Oxford City' in G. Briggs, J. Cook and T. Rowley (eds.), *The Archaeology of the Oxford Region* (1986), for a recent summary of Oxford's prehistoric archaeology.



Fig. 9. Detail of de Gomune's Map of the Civil War Defences of Oxford (By permission of the curators of the Bodleian Library).

The medieval and post-medieval mill; the archaeological and documentary evidence, incorporating documentary research by JULIAN MUNBY

Holywell Mill, typically a mill in two parts, was acquired by Merton College, the first half from Oseney Abbey soon after the College's foundation (but before 1279), and the second half in 1331. The college leased the property as a working corn mill, and it was working shortly before its sale to Magdalen College in 1877, but by 1900 it was a private house.¹² In the 20th century it acquired a brief literary fame as the home of A.J.P. Taylor and his lodger Dylan Thomas.

Apart from documentation of the early history of the mill, referred to by the *Victoria County History*, and general manorial records,¹³ the Merton muniments contain three early leases: in 1433 to William Davyd of 'the watermill of Holywell with the meadow called Bolham and the meadow bank near the water to pasture a horse, together with the water or fishery from the mill to the north limit of the demesne of Holywell';¹⁴ in 1476/7 to William Skelbrok (together with Kingsmill),¹⁵ and in 1506 to Robert Carowe, carpenter.¹⁶ The Merton College Registers of Leases begin in 1566, though some early leases are recorded in the college Register,¹⁷ including Robert Carowe's. The leases refer to the repairs to the stones and wheels, and in 1506 there is a reference to the 'high chamber on the east side of the mill' needing repair.¹⁸

There is surprisingly little material in Merton muniments relating to the mill, since Holywell is not as fully documented as others of its manors. Besides frequent and not too specific references to repairs to the mill, and timber procurement, there is one account with a substantial amount of building activity, when in 1336-7 a weir in Bolehamme was repaired and the mill 'stank' cleared out. The weir seems to have had a stone foundation based on piles, and to have supported eel traps; further work was carried out on the masonry of the weir in 1339 and 1341-2.¹⁹

The Civil War defences of Oxford avoided the manor of Holywell under a special arrangement with the Crown, as we learn from a letter from King Charles asking the college to pay for the expense of enclosing the church and houses within the earthworks; otherwise they were to be demolished.²⁰ As a result the defences had to skirt the existing buildings and form a plain bastion round the mill, as shown on de Gomme's 1644 map of the defences (Fig. 9).²¹

¹² *The Victoria History of the County of Oxford*, iv, 330.

¹³ Merton College Calendar of Deeds (unpubl. TS.) 2. Holywell, pp. 51-2 (Rentals 1301-1600); 55-8 (Accounts 1282-1692) and 59-60 (Court Rolls 1335-1689); there is amongst the rentals a single mill account of 1431-2 (4543c).

¹⁴ Merton College Calendar of Deeds 2. Holywell, 44/168 (2672).

¹⁵ Ibid. 47/171 (3302).

¹⁶ Ibid. 48/172 (3359).

¹⁷ H.E. Salter, *Registrum Annalium Collegii Mertonensis* (Oxf. Hist. Soc. 76), 87, 321; J.M. Fletcher, *Merton Reg. Ann. Coll. Merton 1521-67*, 244, 270; *ibid.* 1567-1603, 1, 3 (Oxf. Hist. Soc. new ser. 23-4).

¹⁸ Salter *op. cit.* note 17, 321; later leases have not been read for references to the buildings.

¹⁹ L.G.H. Kent, 'The manor of Holywell in the late 13th and early 14th centuries' (unpubl. TS. prepared for the *History of the University* project, quoting Merton accounts 4497, 4499 and 4503).

²⁰ Merton Calendar, ii, 49 (p. 173).

²¹ Bodl. MS. Top. Oxon. b. 167; reproduced as plate xxii in R.T. Lattey, E.J.S. Parsons and I.G. Philip, 'A Contemporary Map of the Defences of Oxford in 1644', *Oxoniensia*, i (1936), 161-72.

This is thought to be reflected in the shape of the close east of the mill, and the short length of wet ditch shown on Loggan's map of 1675.

On Loggan's map (Fig. 10) the mill itself appears in some detail and is shown to have ancillary structures extending into the area of the excavation. Richard Davis's map of Oxford of 1797 (Fig. 11) also shows the mill, and what is possibly the partially backfilled mill pond in the area to the north of the mill. The first edition O.S. map of 1878 shows no significant changes in the topography of the site, but does show the detail of the last mill and its ancillary buildings, immediately prior to its conversion to a private house.

By observing this 19th-century plan, and comparing the layout to the present house (Fig. 1), it appears that many of the existing buildings were merely modified, and that the only completely new building erected was the northern extension to the east wing.

On all of the maps on which the mill appears, dating from 1588 onwards, the building

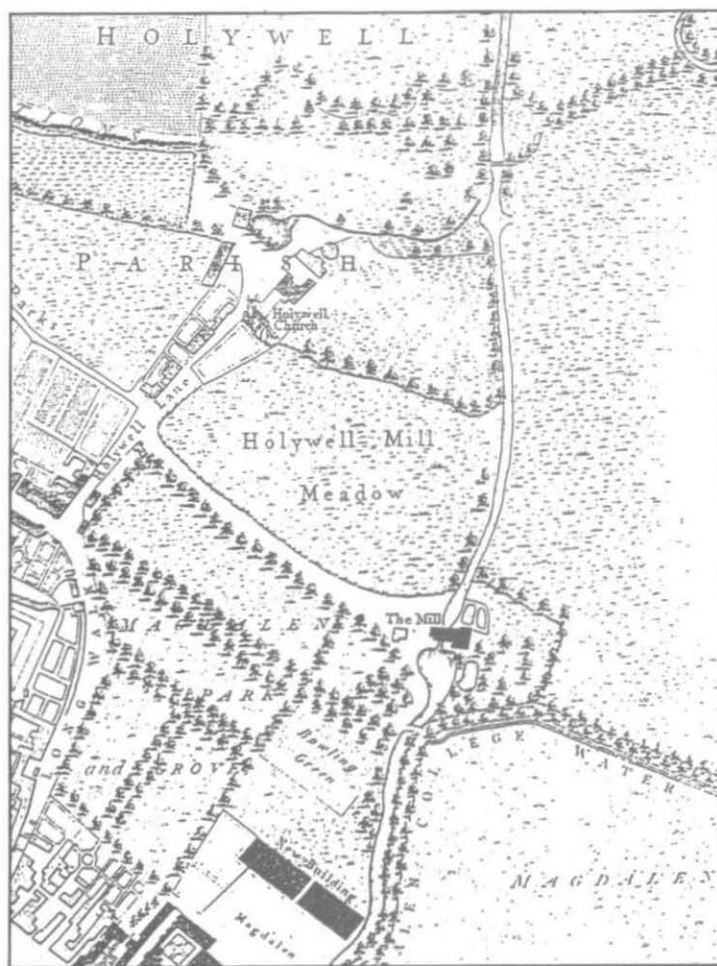


Fig. 11. Detail of Davis's map of 1797.

shown is that of a straddle mill. This type of mill literally straddles the mill stream, with the water flowing through two arches underneath the mill. The water passing through the first arch powers the wheel and the bypass water flows away through the second arch. The arches belonging to the last phase of working mill are still visible beneath the present Holywell House and are best seen when viewing the house from the south-east.

The three large stretches of east-west aligned wall footings discovered in the excavation would appear to represent three building phases of the north wall of a fairly substantial structure, which was situated in the area of the current east wing of the house. The excavated walls may not necessarily have formed part of a building, and might equally represent a high-walled, enclosed yard. Loggan's view of 1675 shows that a walled yard lay north of the mill buildings in the late 17th century. The fact that the three phases of wall are roughly on the same line appears to indicate that the same, or a similar, structure had been partially demolished and rebuilt at least twice in the same position, each time utilizing the foundation of its predecessor. The burning stains which occurred along the whole length of the latest wall perhaps suggest that this third phase of the structure had burnt down.

The earliest phase of the structure, which had the ashlar blocks lining the inside face, truncated deposits containing 14th-century pottery, indicating it to be no earlier than this date. The large, reused, architectural fragment (Fig. 7) which was built into this wall is of Early English style, dating from the late 13th or early 14th century, and would have been brought in with other stone from demolition work at another site, possibly from Merton College which owned the mill, or from the nearby St. John's Hospital, which was partly demolished in 1458. As it seems probable that there would be some considerable length of time between the architectural fragment being used in its original location, and then being available for reuse as building stone, it is more likely that the wall dates from the 15th century.

The exact function of the ashlar lining is uncertain, and its interpretation is made difficult by the fact that only a small part of this structure could be observed in the excavation. It seems highly likely, however, that such a lining indicates a chamber below ground level, and as any such a chamber in this location would flood it was most probably a tank of some description.

The documentary evidence suggests that the medieval mill had both a fishery attached, and eel traps along the weir, and therefore one possibility is that this was a tank used for keeping fish for the table, either for domestic use, or commercial sale. Documentary evidence for the use of such fish tanks exists from the 16th century at the manor of Wookey in Somerset,²² and in recent excavations of a medieval grange at Dean Court Farm in Cumnor, Oxon.,²³ two stone troughs, also thought to be fish tanks, were found within the area of the kitchen. The existence of a fish tank below ground level would explain why the above-ground walls were several times rebuilt in the same position, allowing continued use of the tank.

The north-west corner of the structure formed by the narrow wall 502, and the well, were both cut into the backfill of the 18th-century disturbance (545) and appear to be part of a contemporary phase. The narrow wall footing had only a very shallow foundation and was therefore almost certainly just a small ancillary building or even a garden wall.

The date of origin of the millpond at Holywell is unknown. The purpose of a millpond is

²² Devon R.O. (Exeter), Rolle papers 96M/Box 4/5 (Survey of the Manor of Wookey 1557-8). Transcript supplied by Joan Hasler, Wookey Local History Group: 'oon close yard wythe water ronnyng throughte and walled about wythe 2 stone trowes for to kepe and water fyshe in yt. ...'

²³ T. Allen, 'A Medieval Grange of Abingdon Abbey at Dean Court Farm, Cumnor, Oxon.', *Oxoniensia*, lix (1994), 219-447.

to act as a reservoir, storing water upstream of the mill; sluices attached to the pond then allow a supply of water to flow through the mill at a steady rate. Sluices are also needed to regulate the amount of water which flows into the millpond to avoid flooding. A water course or 'leat', which runs from the pond and bypasses the mill to rejoin the stream on the other side, is also needed to avoid flooding. The necessity for a millpond at Holywell would have arisen when the water supply became erratic due to heavy demand and diverting of the supply by other mills: this is known to have occurred in the medieval period, as in 1486 Magdalen College agreed to remove a newly-built mill which was impeding the mill at Holywell.²⁴ A millpond must have existed at Holywell from the medieval period, although the only clear documentary reference to it is from an 18th-century document, which describes a fishery extending from 'New Park corner to Holywell mill-pond'.²⁵ The maps of this period appear to show that the pond was already partially backfilled by the 18th century, and no longer in working use. It is possible, however, that the reference from the 14th century describing the cleaning out of the mill 'stank' is in fact referring to the pond.

In the area to the north of the mill (trench 2) deep deposits of clay containing 18th-century material were found, and these are almost certainly the backfill of the large feature which is shown in this location on 18th-century maps. The north-south aligned feature (511), which was found immediately to the east of the mill, contained similar layers of backfill except that the pottery from these deposits was slightly earlier in date. As only small areas of these two features were observed in the excavation their function and dimensions could not be fully established. However, given their considerable depth and locations it seems very likely that these features represent the backfilled millpond, to the north of the mill, and a bypass stream, running from the pond, around the back of the building. Davis's map of 1797 (Fig. 11) shows a separate body of water to the south-east of the mill, and this would appear to be the remnants of this bypass stream, at the point where it rejoins the mill stream or 'tail race'.

The environmental evidence from the soil sample taken from the bottom of the large curving ditch (325) located in the area to the east of the mill indicates that the ditch contained only shallow, still water or mud, and is therefore unlikely to be associated with the mill's water system. Although there were no finds from the bottom of the ditch, the finds from the upper half of the layers of backfill ranged in date from the mid 17th century, from half way down, to the late 17th/early 18th century at the top of the ditch. This apparent 17th-century date for the backfilling of the ditch, in addition to its location and character, would seem to suggest that the most likely function of the ditch was related to Oxford's Civil War defences; either as a contemporary feature associated with the bastion which surrounded the mill to the east, or perhaps more probably as part of a temporary, preliminary defence which existed prior to the construction of the bastion.

It is known that a number of preliminary defences were constructed to the north of Oxford in 1642, which were destroyed almost immediately when the City fell into the hands of the Parliamentarians from 12 September to 29 October of that year.²⁶ Many of these early defences were still unfinished at the time of their destruction, and their exact location and extent are uncertain. Given the importance that a mill would have had to the economy of the City at this time, it would seem quite probable that these early defences would have incorporated it; it is therefore possible that the ditch discovered in the area to the east of the mill was indeed part of this initial, short-lived phase of Oxford's Civil War defences.

²⁴ *Op. cit.* note 14.

²⁵ Oxford University Archives W.P.B. 13 (2).

²⁶ R.T. Lattey et al. *op. cit.* note 21.