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Wolvercote Paper Mill, Oxford, Oxfordshire

ARCHAEOLOGICAL EVALUATION REPORT

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SUMMARY

Oxford Archaeology (OA) carried out a field evaluation at Wolvercote Paper Mill, Oxford, Oxfordshire (NGR SP 4879 0986). The work was commissioned by Buro Four on behalf of Oxford University. The evaluation revealed a number of scattered archaeological features dating from the Iron Age to the present day. In the north of the site a middle Iron Age posthole and oval pit were revealed. A natural stream course was revealed running NW-SE across the site, medieval tile was recovered from its fills.

Along the southern edge and south-east corner of the site medieval and post-medieval ditches, post holes and pits were recorded. These features may be associated with medieval and post-medieval properties fronting onto Mill Road, or earlier mills on the site. A millrace was located in the east of the site, which had been backfilled with material from the demolition of the 19th-century mill, prior to the construction of the paper mill in 1953.

1 Introduction

1.1 Location and scope of work

- 1.1.1 In April 2007 Oxford Archaeology (OA) carried out a field evaluation at Wolvercote Paper Mill, Oxford, Oxfordshire (Fig. 1). The work was commissioned by Buro Four on behalf of Oxford University in respect of a future planning application for the development on the site. As part of the pre-planning process, discussions were held between Brian Durham, City Archaeologist, and Oxford University. As a result of these discussions a desk-based archaeological assessment was prepared (John Moore Heritage Services, 2003) and an archaeological evaluation was proposed. Due to the contaminated nature of the site a series of investigative test pits were also proposed, it was agreed that these would be archaeologically monitored.
- 1.1.2 OA produced a Written Scheme of Investigation (WSI) outlining how it would deal with the archaeological requirements of the work, which was agreed with Brian Durham (OCC). The development site is situated north of Mill Road, Wolvercote, Oxford and is 3 hectares in area.

1.2 Geology and topography

1.2.1 The site lies immediately to the east of the River Thames/Isis, the geology of the western part of the site comprises superficial drift deposits of alluvium, to the west of the site the geology comprises recent river terraced deposits. The underlying geology is Oxford Clay. The site lies at c 59 m above OD.

1.3 Archaeological and historical background

1.3.1 The archaeological background to the evaluation has been the subject of a separate desk study (John Moore Heritage Services, 2003), the results of which are summarised below. The site itself has produced limited archaeological evidence. There are several known sites/ locations with archaeological remains adjacent to the development site.

Prehistoric

1.3.2 Port Meadow lies c 200 m to the SE of the site, where a complex group of linear ditches, circular ditches and enclosures have been identified through cropmarks. The cropmarks comprise a series of at least six Bronze Age ring ditches and middle Iron Age enclosures. Numerous prehistoric finds (including a Neolithic blade knife or sickle) have been recovered from locations around the site. Three possible Bronze Age ring ditches/barrows have been identified c 1 km to the east, at King's Weir. A sling bullet of baked clay, possibly Iron Age, has been recovered from the proposed development site.

Romano-British

1.3.3 Romano-British pottery sherds and coins have been recovered from numerous locations around the site, including an archaeological watching brief at Godstow Abbey.

Anglo-Saxon

1.3.4 Wolvercote is recorded as Vlfgarcote (Wulfgars Cottage) in the Domesday Book. A bone implement and vitreous paste beads have been recovered from Wolvercote and Wytham.

Medieval

- 1.3.5 Godstow Abbey (SAM Oxon. No. 81) is located c 700 m SW of the proposed site. It was founded in 1133 for nuns of the Benedictine order, and the remains comprise a rectangular enclosure with part of a wall, and a probable 16th-century chapel. An associated, possibly medieval, single arched bridge (SAM Oxon. No. 173) lies to the SW of the Abbey. Godstow Bridge, which forms the approach to Godstow Abbey from the north, may also have medieval origins.
- 1.3.6 Documents show that a water mill may have been granted to the Abbey in c 1404, it is likely that the mill lay close to the site of the recently demolished paper mill.
- 1.3.7 A possible deserted medieval village (DMV) has been identified in the locality of north Wytham, c 750 m SW of the site. Medieval earthworks representing a field system have been identified to the NW of the site; Port Meadow and Wolvercote common would have been used as common land.
- 1.3.8 St Peter's Church in Upper Wolvercote has medieval origins, and may have been the focal point of the transitional late Saxon/Norman village. A 13th-century pottery horn

was found in the bed of the River Thames at Godstow, it may have been used for summoning to meals, possibly around the buildings of the Abbey.

Post-medieval

- 1.3.9 The medieval water mill was sold in 1616, by which time there were two corn mills, known as Wolvercote Mills, and an adjoining fulling mill. By 1674 paper was made at the site, and was used by the press established at Oxford University.
- 1.3.10 In 1793 John Swann took over the tenancy of the Mill and is thought to have enlarged the buildings several times. The Mill House remains in-situ outside of the development area. The 'Old Mill' was demolished in 1855 when Thomas Combe bought the freehold, and a new one constructed in a new position c 75 m to the north. In 1899 new mill buildings were built, though by 1953-57 the buildings were demolished and replaced by a brick and concrete complex of buildings, a culvert was created for the Mill Stream.
- 1.3.11 Wolvercote common provided waterside grazing of 74 acres in the post-medieval period. Most of the surrounding sites are associated with the Civil War; the river (Godstow Navigation Bridge), canal (the 19th century Godstow Lock) and railway; or they are listed buildings containing features dating from the 16th-18th centuries.
- 1.3.12 Areas of gravel extraction are visible within the north end of Port Meadow as cropmarks.

2 EVALUATION AIMS

General

- 2.1.1 General aims were to establish the presence/absence of any archaeological remains within the proposal area and to determine the extent, condition, nature, character; quality and date of any archaeological remains that may affect further need for mitigation during the construction process.
- 2.1.2 To establish the ecofactual and environmental potential of any archaeological deposits and features and to make available the results of the investigation.

Specifically

- 2.1.3 Specifically the evaluation aimed to identify evidence for prehistoric activity, comparable with that seen within Port Meadow. If prehistoric archaeology did survive, how much damage did the post-medieval use of the site cause?
- 2.1.4 To establish the location of the culverted Mill Stream. The stream would logically have started as an artificially embanked mill leet, potentially with a buried ground surface beneath the bank.

3 METHODOLOGY

3.1 Scope of fieldwork

- 3.1.1 A total of 37 test pits (Fig. 2) were located throughout the site, designed to target areas of possible contamination. The evaluation consisted of seven 30 m long trenches, one c 20 m long trench and one 12 m long trench (Fig. 2). Originally 12 trenches were planned, but three were abandoned due to contamination issues (Trenches 1, 8 and 10). The evaluation trenches were located to target possible mill channels and areas of likely settlement on higher ground, which were identified through bore-hole analysis (OA 2007). They were also located so that they would avoid areas of contaminated soil and areas where the contamination had been removed, resulting in disturbance to the archaeological layers.
- 3.1.2 The overburden was removed to the top of the highest archaeological horizon or the natural geological horizon, whichever was reached first. The reduction was carried out by a JCB mechanical excavator fitted with a toothless bucket, under close archaeological supervision.

3.2 Fieldwork methods and recording

3.2.1 The trenches were cleaned by hand and the revealed features were sampled to determine their extent and nature, and to retrieve finds and environmental samples. All archaeological features were planned and where excavated their sections drawn at scales of 1:20. All features were photographed using colour slide and black and white print film. Recording followed procedures laid down in the *OAU Fieldwork Manual* (ed. D Wilkinson, 1992).

4 RESULTS: GENERAL

4.1 Soils and ground conditions

- 4.1.1 The site is located on natural gravel, overlain by a loess deposit (supra-natural), which is overlain by alluvial deposits, in deeper parts of the site. The fills of the archaeological features tended to be derived from this material.
- 4.1.2 A deposit model was produced as part of the Project Design (OA 2007) that showed the levels of the natural gravel dropping to the south-east and north- west. The results of the evaluation proved that this model was generally accurate, however the gravel exposed within Trenches 5 and 6 (an area of limited borehole information) was 0.4 m to 0.8 m higher than expected.

4.2 Distribution of archaeological deposits

4.2.1 The level of natural gravel was highest in the northern part of the site, where it was cut by Iron Age features. Medieval features were mostly found in the southern part of the site, presumably within the backyards of properties fronting Mill Street.

5 RESULTS

5.1 Trench descriptions

Trench 2A

The trench was 9 m long, aligned east to west and was located to the east of the 5.1.1 existing culverted Mill Stream. At the east end of the trench natural gravel was observed between 2 m and 0.9 m below ground level (BGL), approximately 56.5 m OD to 57.6 m OD. The gravel was overlain by demolition debris, the drop in the gravel indicates that this was the eastern edge of the Mill Stream prior to the construction of the culvert.

Trench 2B (Fig. 3)

- The trench was 8.8 m long, 1.7 m wide, and aligned east to west on the west side of 5.1.2 the culverted Mill Stream. The natural gravel (200) was revealed 0.8 m BGL (57.65 m OD), and appeared to have been truncated by a shallow concave channel, although no evidence for any channel edges were revealed. Overlying the gravel was a dark grey-brown silty clay alluvium (201), which was contaminated with petroleum fuel. Sealing the alluvium was a 0.44 m thick buried soil horizon of dark brown silty clay (202), overlain by a thin levelling layer of pea gravel and sand (209).
- Layer 209 was cut by a removed foundation or service (207) that was seen only in 5.1.3 section, measuring 2.1 m long, 0.1 m wide and 1.2 m in depth. The base of the feature was below the impact level of the trench and was filled by a light brown silty clay (208) with a lot of crushed concrete and stone. Layer 209 was also cut by the construction trench (204) for the concrete culvert (205), at the east end of the trench, which was backfilled with silty clay (206), concrete and brick fragments. Sealing all these deposits was a 0.3 m thick layer of crushed demolition material (203).

Trench 3 (Fig. 4)

- This trench was 30 m long and aligned north to south. The middle section of the 5.1.4 trench was not excavated due to the heavy contamination in that area of the site. The trench was excavated to a depth of 2 m below the ground level (56.7 m OD), the level of the natural sandy gravel (302). The gravel was overlain by a 0.95 m - 1.2 m thick layer of dark blue black alluvium clay (308 and 315). In the south end of the trench this had been cut by drain (304) with very steep sloping sides and flat base. It measured 3.7 m x 1.4 m x 0.7 m and was filled by a dark blackish brown silty clay (303), overlain by a dark reddish brown sandy gravel (307).
- To the north was a, partly exposed, rectangular cut (321) for the buffer pad 5.1.5 supporting the main pad of the 1950s paper mill factory. It measured 7 m long and 1.5 m wide, and was lined along its western side by a 0.5 m thick brick and cement bond wall (318), a timber post revetment lined its south side. The construction trench was backfilled with a dark grey silty clay (317), brown gravel and brick and concrete rubble (312), and dark grey blue silty clay and building rubble (311). Abutting the

south side of the pad were dumps of light grey sandy gravel (306) and dark reddish brown sandy gravel (307), which formed make up layers for the factory base. Filling a void created by the removal of the factory's footings was a dark grey brown silty sand (310) and a dump of rubble and concrete fragments (309).

5.1.6 At the northern end of the trench a dark alluvial clay (315) was overlain by a 0.25 m thick orange brown silty clay make up layer (314). This had been cut by a narrow vertical sided service trench (319), measuring 1.8 m x 0.4 m x 1.2 m and filled by a compacted brown coarse and pea gravel (320). The service trench was overlain by a 0.6 m thick layer of sand, gravel and rubble (313). Layer 313 had been cut by footing for the factory, which had been removed and backfilled with crushed concrete rubble (316). A 0.25 m to 0.5 m thick layer of demolition and remediation material overlaid the deposits.

Trench 4 (Fig. 5)

- 5.1.7 This trench was aligned north to south and measured 30 m long, 1.5 m to 2.1 m wide and natural gravel (402) was revealed 1 m -1.3 m BGL (c 57.8 m OD). A patchy 0.08 m thick layer of orange brown silty clay (415) overlay the gravel, probably forming the base of the supra-natural. This layer was below a 0.4 m thick mid orange brown silty clay buried soil (410).
- 5.1.8 An uneven sided, NW-SE aligned probable stream (423), was revealed in the southern part of the trench. It had near vertical sides rounding to a flat base, and measured 1.6 m wide x 1.25 m deep. It was filled with a dark grey silty clay (418) that contained a possibly intrusive fragment of a modern wooden fence, and a yellow brown gravel with lenses of rubble (417).
- 5.1.9 In the north end of the trench the buried soil (410) was cut by a service trench (419) that was filled by dumped mixed clays (412-414), and a similarly filled circular pit (421, fill 409). The fills were overlain by silty clay make-up layers (404 406 and 411). Layer 404 was cut by a modern feature (420), observed in section, with very steep sides and a concave base, measuring 0.4 m wide and 0.5 m deep. It was filled by a dark orange brown sandy gravel (403) containing modern building debris. The deposits in the southern part of the trench were overlain by a 0.25 m thick light grey layer of crushed brick and concrete (416). The remains of a modern factory cellar (424) truncated the trench and was filled by brick building debris (422). Sealing all the deposits was a 0.3 m to 0.5 m thick layer of demolition and remediation.

Trench 5 (Fig. 6)

5.1.10 This trench was aligned east to west and measured 30 m long. Natural gravel (502) was revealed 0.6 m BGL (57.75 m OD) and was cut by a large channel (511). It had a concave profile measuring 7 m x 1.6 m x 0.6 m and was filled by a 0.2 m thick black silt (510) with organic remains, below a 0.04 m thin lens of white grey silty sand (509), which was overlain by a 0.4 m thick deposit of dark grey silty clay (508) that contained fragments of roof tile dating from the 13th - 14th centuries. The environmental remains suggested that it was a stream channel. Overlying the fills was

a 0.1 m thick and 6 m wide layer of blue grey sandy silt alluvium (507), below a 0.5 m thick orange brown silty clay levelling deposit (506) that also contained fragments of roof tile dating from the 13th - 14th centuries. Overlying layer 506 was a 0.2 m - 0.3 m thick orange brown silty clay buried soil (501), below a 0.7 m thick layer of demolition and remediation material. This had been cut by a steep sided modern feature (505) associated with the remediation of the site, and filled by a blue grey silty gravel (504), below a mid brown silty clay loam (503).

Trench 6 (Fig. 7)

- 5.1.11 This trench was 30 m long and aligned north to south. Natural gravel (602) was reached 0.75 m BGL (57.8 m OD) at the north end of the trench and sloped down to the south-west end of the trench. The gravel was cut by two features; a narrow ditch (608) aligned east to west across trench with a concave profile. It measured 0.5 m wide x 0.23 m deep and was filled by a mid grey brown silty clay (607). To the south was a root hole (606), which was sub circular with uneven sides and concave base. Measuring 1.5 m x 1.2 m x 0.6 m it was filled by a loose gravel (605) overlain by a dark grey brown silty clay (604). The fills were overlain by mid brown silty clay and rubble levelling deposits (609).
- 5.1.12 The levelling deposits were below a series of dark brown silty clay layers (614 618) with rubble and concrete fragments. Cutting through these layers was a large rectangular feature (619), partly seen in section with steep sloping sides narrowing to a base below level of trench. It measured 1.8 m x 0.5 m x 1.2 m and was filled by layers of grey brown silty clay (610, 612 and 613) and concrete rubble from the remediation of the site. Overlying the deposits was a 0.4 m thick layer of demolition and remediation material (601).

Trench 7 (Fig. 8)

5.1.13 This trench was 30 m long and aligned east to west, natural gravel (702) was revealed 1.2 m BGL (57.5 m OD) and overlain by a 0.5 m thick layer of supra-natural (701). Cut into the gravel were three circular postholes, their relationship with the supranatural was unclear; two (707 and 709) had a concave profile and measured 0.3 m in diameter, 0.08 m in depth and were filled with a yellow brown clay (706 and 708). The third feature (711) was squarer in plan with vertical sides and flat base. It measured 0.4 m x 0.36 m x 0.08 m and was filled by a yellow brown silty clay (710). A circular pit (705), with steep sloping sides rounding to a flat base, cut through the supra-natural. It measured 1.5 m x 0.8 m x 0.82 m, with a primary fill of reddish brown silty clay (704) that contained bone and pottery dating from c 1075-1250. The pit was backfilled with a mid brown clay (703). The fills were overlain by a 0.85 m thick layer of demolition and remediation material.

Trench 9 (Fig. 9)

5.1.14 Trench 9 was 30 m long and aligned north to south, natural gravel (903) was revealed 1.2 m BGL (57.8 m OD). The gravel had been cut by a circular post hole (904), which had sloping sides and a concave base, measuring 0.65 m in diameter and 0.22

deep. It was filled by a grey brown silty clay (905). An oval feature (906) was revealed to the north, measuring 1.4 m x 1 m x 0.58 m. The primary fill was a blue grey clay (909), containing bone and shell-tempered pottery dating from the early to middle Iron Age period. Overlying 909 was a grey brown silty clay (908) containing fragments of bone, overlain by grey brown silty grey (907). Overlaying these deposits was a 0.4 m thick layer of orange brown silty clay (902), probably a disturbed supranatural layer, below a 0.3 m thick grey blue alluvial silt (901). A 0.6 m thick layer of demolition and remediation material (900) overlay the deposits.

Trench 11 (Fig. 10)

- 5.1.15 Trench 11 was 30 m long and aligned north to south, natural gravel (1104) was revealed 0.8 m BGL (57.55 m OD) and was overlain by a 0.4 m thick layer of supranatural in the southern part of the trench. This had been cut by a three E-W aligned ditches. The most northerly, ditch 1105, had a deep concave profile measuring 1.6 m x 1.6 m x 0.8 m, and was filled with a mid grey brown silty clay loam (1106). To the south of ditch 1105 was ditch 1109, with sloping sides and a flat base. It measured 1.6 m x 1 m x 0.5 m and was filled by a orange brown silty clay (1110), which had been cut along its northern edge by ditch 1107. This ditch had steep sloping sides and a narrow concave base measuring 1.6 m x 1.4 m x 0.6 m, and filled with a orange brown silty clay loam (1108).
- 5.1.16 To the north of the trench the supra-natural (1103) had been cultivated and was darker in colour. This had been cut by two ditches (1111 and 1113); ditch 1113 was aligned east to west and had a concave profile. It measured 1.6 m x 0.5 m x 0.1 m and was filled with a mid yellow brown silty clay (1114). The fill was cut by a concave ditch (1111) measuring 1.6 m x 0.6 m x 0.2 m, and filled by a dark grey brown silty clay (1112).
- 5.1.17 Overlying the ditch fills was a 0.2 m thick layer of very dark brown silty clay loam topsoil (1102). At the southern end of the trench the topsoil had been cut by a circular feature with vertical sides, but its base was below the level of the trench and not excavated. It measured 2 m across and 1.4 m in depth, and was filled by a mid grey brown silty clay (1116) that contained limestone rubble and 19th- or early 20th-century pottery. This is thought to be a garden well, which had collapsed and subsequently backfilled. Demolition and remediation material (1101) overlay the deposits.

Trench 12 (Fig. 11)

5.1.18 Trench 12 was aligned NW-SE, it measured 9 m long and 1.6 m wide. A natural compact yellowish brown sandy gravel (1202), with patches of dark grey gravel (1203) was revealed at 1.2 m BGL (57.4 m OD). This was sealed by a 0.18 m - 0.3 m thick layer of orange brown silty clay (1209) supra-natural, below alluvial layers (1207, 1208 and 1211). The alluvium was overlain by a 0.25 m thick layer of dark black brown silty clay disturbed topsoil (1206 and 1210). The topsoil had been cut by a partly exposed service trench (1205). It measured 5 m x 1.2 m x 1.25 m and was

filled with a grey brown silty clay (1204). Demolition and remediation material overlay the deposits.

5.2 Trial pits

- The trial pits revealed a general sequence of well sorted sandy gravel, overlain by 5.2.1 light reddish sandy clay alluvium, and made ground deposits consisting of building rubble from the former paper mill. The made ground deposits varied from 0.7 m to 2 m across the site, in many areas cutting into gravel and completely removing the alluvium. The areas covered by the former mill structures were the most disturbed with less impact outsides of these areas.
- 5.2.2 No significant archaeological features or deposits were identified within any of the trial pits, and no finds were retained. Two potential features were identified to the south east of the site within Trial Pits 1 and 3, consisting of two possible linear features dug into the alluvium and gravel and filled with a firm dark blackish brown silty clay. These deposits produced no dateable finds and were similar in nature to the overlying made ground. In addition cut stone foundations were located in Trial Pit 34 at a depth of 1.1 m. The foundations were located next to the river culvert, and possibly represent part of the mill structure or an earlier phase in the mill's development. Collapsing overburden and flooding prevented further investigation of these deposits.
- Contaminated deposits were identified within Trial Pits 7, 9, 11, 12, 13, 17, 24 and 5.2.3 35, comprising a black silty/sandy clay that had been backfilled into previously disturbed areas. The deposits included asbestos, petrochemicals and tar that could be hazard to health if disturbed during the archaeological evaluation of the site.

5.3 **Finds**

Pottery by John Cotter

A total of 7 sherds of pottery weighing 65g were recovered from 3 contexts. This is of 5.3.1 mixed prehistoric, medieval and post-medieval date. Overall the pottery assemblage is in a fragmentary condition, although the latest sherds are quite fresh and fairly large. Ordinary domestic pottery types are represented. A single worn sherd of early to middle Iron Age shell-tempered pottery was identified from context (909). Pottery dating to c 1075-1250 was identified from context (704) and 19th- or early 20thcentury pottery from context (1116).

Ceramic building materials (CBM) by John Cotter

A total of 7 pieces of ceramic building material (CBM) weighing 1620g was 5.3.2 recovered from 4 contexts. This is of medieval and late post-medieval or modern date. Nothing particularly unusual was noted. Plain roof and ridge tile fragments of broadly medieval date (most likely perhaps 13th-14th century) were identified from two contexts (506 and 508). Pieces of 19th- or early 20th-century stoneware drainpipe (401) and red terracotta land drain (418) were identified; one of which also produced a piece of 20th-century asbestos roofing (418).

5.4 Palaeo-environmental remains

Environmental evaluation of flots and residues at Wolverote Mill by Luke Howarth, Dr Wendy Smith, Liz Stafford and Dr Rebecca Nicholson.

- 5.4.1 One sample was taken for evaluation from this site (context 510). The sample was taken from a context interpreted as a pond or mill run associated with a paper mill. The charred plant remains were dominated by charcoal. The waterlogged plants remains included Polygonaceae and Batrachium sp. (water crowfoot). Of the waterlogged wood, most of the material could only be tentatively identified as Alder / Willow (Alnus/Salix). A significant amount of snails were also revealed, predominantly the freshwater snail Planorbis planorbis, although some Trichia hispida was also present. Six fragments of beetle elytra, one small fish vertebra (probably 3-spined stickleback, Gasterosteus aculeatus), one charophyte (algae) and one water flea Daphnia sp. (water flea) egg were also observed. Two fragments of amphibian metapodial were found in the residues.
- 5.4.2 The plant remains all indicate a water edge environment. The occurrence of *Daphnia* (water flea), *Planorbis planorbis* (freshwater snail), the amphibian remains and the fish vertebrae all support a aqueous or marginal environment (i.e. pond / stream). The occurrence of amphibians, fish and charophyte would suggest the water was not particularly polluted at the time the sediment was deposited.
- 5.4.3 The inorganic residue demonstrates two distinct depositional environments, highly rounded limestone pebbles indicate a relatively high energy environment such as a stream, whilst finer grained material, which made up ~23 litres of the sample indicate a very low energy environment such as a pond. The fine grained material was particularly dark this was probably due to a high percentage of fine organic material.

6 DISCUSSION AND INTERPRETATION

6.1 Limitations

6.1.1 The evaluation revealed that the gravel terrace was at its highest in the eastern and north-eastern areas of the site, and sloped down towards the west and south-west corner. Much of the higher ground had been disturbed by buildings associated with the paper mill, and was subsequently contaminated. As a result two proposed trenches were abandoned and the full extent of the prehistoric occupation of the eastern part of site could not be established.

6.2 Summary of results

6.2.1 An early to middle Iron Age post hole and pit were revealed in the northernmost trench (9) and it is likely that further evidence of prehistoric occupation may survive

- to the east, within the contaminated area. The features may be indicative of occupation on the higher gravel terrace, along the banks of the river.
- 6.2.2 A stream course was picked up in two trenches (4 and 5), which ran NW-SE across the site. The stream would have been slow moving with seasonal flooding. Two fragments of 11th-to 13th-century medieval roof tile were recovered from its fills, and it may be that the stream was infilled when a water mill was constructed on the site in the 15th century.
- 6.2.3 Along the southern edge and south-east corner of the site ditches, post holes and pits were recorded. These features are probably associated with medieval and post-medieval properties fronting onto Mill Road, although they may also represent activity associated with earlier mills on the site.
- 6.2.4 The existing culverted Mill Stream was revealed in the western part of the site and the eastern edge of an earlier channel was revealed. This had been back filled with material from the demolition of the 19th-century mill, which took place when the site was cleared for the construction of the paper mill factory in 1953. It is possible that the original mill stream was embanked rather than cut, however no evidence for a mill bank was revealed. If a bank existed it was probably lost through cultivation, or during the construction of the 20th-century paper mill. Much of the site had been truncated by 0.2 m to 1.4 m in depth, by the construction of the 1950's factory and its later demolition and the subsequent remediation of the site.

6.3 Recommendations

6.3.1 During any remediation of the eastern and north-eastern parts of site, and any subsequent general reduction, it is recommended that the areas are subject to a strip map and sample exercise. Any surviving archaeological features could be mitigated during this phase of work ahead of any later development.

APPENDICES

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

Trench	Ctxt No	Туре	Width (m)	Thick.	Comment	Finds	Date
2B							
	200	Natural			Natural gravel		
	201	Layer		0.18 m	Alluvium		
	202	Layer		0.44 m	subsoil		
	203	Layer		0.30 m	Demolition/remediation layer		
	204	Cut	0.45 m	1 m	Cut		
	205	Structure			Culvert		
	206	Fill			Backfill		
	207	Cut	0.10 m	1.20 m	Cut		
	208	Fill			Fill		
	209	Layer		0.10 m	Construction layer		
3							
	301	Layer		0.50 m	Demolition/remediation layer		
	302	Natural			Natural gravel		
	303	Fill		70 m	Fill of feature		
	304	Cut	1.3 m	0.70 m	Modern feature		
	305	Layer		0.35 m	Ground make-up		
	306	Layer		0.30 m	Ground make-up		
	307	Layer		0.35 m	Ground make-up		
	308	Layer		0.95 m	Alluvium		
	309	Deposit		1.3 m	Backfill		
	310	Deposit		0.2 m	Backfill		
	311	Layer		1 m	Ground make-up		
	312	Layer		1.50 m	Ground make-up		
****	313	Layer		0.60 m	Ground make-up		
	314	Layer		0.25 m	Ground make-up		
	315	Layer		1.25 m	Alluvium		
	316	Layer		1.60 m	Ground make-up		
	317	Layer		0.30 m	Ground make-up		

Trench	Ctxt No	Туре	Width (m)	Thick.	Comment	Finds	Date
	318	Structure	0.50 m	2 m	Brick & timber lining of pad		
	319	Cut	0.40 m	1.30 m	Service trench		
	320	Fill			Fill of service trench		
	321	Cut	1.5 m	2 m	Cut for pad		
4							
	401	Layer		0.50 m	Demolition/remediation layer		
	402	Natural			Natural gravel		
	403	Fill			Fill of modern pit 420		
	404	Layer		0,24 m	Ground make-up		
	405	Layer		0.20 m	Ground make-up		
	406	Layer		0.25 m	Ground make-up		
	407	Fill			Fill of pit 421		
	408	Fill			Fill of pit 421		
	409	Fill			Fill of pit 421		
·	410	Layer		0.42 m	Alluvium		
	411	Layer		0.16 m	Buried topsoil		
	412	Fill			Fill of 419		
	413	Fill			Fill of 419		
	414	Fill			Fill of 419		
	415	Layer		0.08 m	Alluvium		
	416	Layer		0.26 m	Ground make-up		
	417	Layer		0.55 m	Ground make-up		
	418	Fill		0.42 m	Silty up of stream		
	419	Cut	1.5 m	0.54 m	Service trench		
	420	Cut	0.40 m	0.50 m	Modern feature		
	421	Cut	1.85 m	0.40 m	Modern pit		
	422	Fill			Rubble backfill of cellar		
	423	Cut	1.6 m	1.25	Cut of stream course		
	424	Cut	10 m	2 m	Factory cellar cut		
5							
	500	Layer		0.70 m	Demolition/remediation layer		
	501	Layer		0.20 m	subsoil		

Trench	Ctxt No	Туре	Width (m)	Thick. (m)	Comment	Finds	Date
	502	Natural			Natural gravel		
	503	Fill			Fill of pit		
	504	Fill			Fill of pit		
	505	Cut	1.20 m	1.20 m	Pit		
	506	Layer		0.50 m	Ground make-up	СВМ	13th-14th (
	507	Layer		1 m	Alluvium		
	508	Fill		****	Fill of water course	СВМ	13th-14th (
	509	Fill			Fill of water course		
	510	Fill			Fill of water course		
	511	Cut	1.20 m	0.60 m	Stream or water course		
6							··········
	601	Layer		0.40 m	Demolition/remediation layer		
****	602	Natural			Natural gravel		
	603	Layer			Ground make-up		
	604	Fill			Fill of pit/tree hole		
	605	Fill			Fill of 606		
	606	Cut	1.20 m	0.60 m	pit/tree hole		
	607	Fill			Fill of linear 608		
· ·	608	Cut	0.50 m	0.23 m	Ditch or gully		
	609	Layer		0.42 m	Ground make-up		
	610	Layer		0.70 m	Ground make-up		
	611	Layer		0.26 m	Deposit of material		
	612	Fill			Fill of pit 619		
	613	Layer		0.20 m	Alluvium material		
	614	Layer		0.36 m	Ground make-up		
	615	Layer		0.04 m	Disturbed natural		
	616	Layer		0.20 m	Ground make-up		
	617	Layer		0.27 m	Ground make-up		
	618	Layer		0.06 m	Deposit of material		
	619	Cut	1.80 m	0.70 m	Modern pit		
	620	Cut			Modern services		

Trench	Ctxt No	Туре	Width (m)	Thick. (m)	Comment	Finds	Date
	700	Layer		0.85 m	Demolition/remediation layer		
	701	Layer		0.50 m	subsoil		
	702	Natural			Natural gravel		
	703	Fill			Fill of pit 705		
	704	Fill			Fill of pit 705	Pot, bone	11th-13th C
	705	Cut	1.50 m	0.82 m	Rubbish pit		
	706	Fill			Fill of post hole		
	707	Cut	0.30 m	0.06 m	Post hole		
	708	Fill			Fill of post hole		
	709	Cut	0.28 m	0.08 m	Post hole		
	710	Fill			Fill of post hole		
	711	Cut	0.36 m	0.08 m	Post hole		
9	······································						
	900	Layer		0.85 m	Demolition/remediation layer		
	901	Layer		0.30 m	Alluvium		
	902	Layer		0.40 m	Sub soil		
	903	Natural			Natural gravel		
	904	Cut	0.65 m	0.22 m	Post hole		·
	905	Fill			Fill of post hole		
	906	Cut	1.40 m	0.58 m	Oval pit		
	907	Fill			Fill of pit		
	908	Fill			Fill of pit		
	909	Fill			Fill of pit	Pot	E-M Iron Age
11							
	1101	Layer		0.25 m	Demolition/remediation layer		
	1102	Layer		0.20 m	Topsoil		
	1103	Layer		0.50 m	subsoil		
	1104	Natural			Natural gravel		
	1105	Cut	1.60 m	0.80 m	Ditch		
	1106	Fill			Fill of ditch		
	1107	Cut	1.40 m	0.60 m	Ditch		

Trench	Ctxt No	Туре	Width (m)	Thick.	Comment	Finds	Date
	1108	Fill			Fill of ditch		
	1109	Cut	1 m	0.50 m	Ditch		
	1110	Fill			Fill of ditch		
	1111	Cut	0.60 m	0.20 m	Ditch		
	1112	Fill			Fill of ditch		
	1113	Cut	0.50 m	0.10 m	Ditch		
	1114	Fill			Fill of ditch		
	1115	Cut	2 m	1.40 m	19th Century well		
	1116	Fill			Back fill of well		
12							
	1201	Layer		0.54 m	Demolition/remediation layer		
	1202	Natural			Natural gravel		
	1203	Natural			Natural gravel		
	1204	Fill			Fill of service trench		
	1205	Cut	1.40 m	l m	Service trench		
	1206	Layer		0.20 m	Ground make-up		
	1207	Layer		0.18 m	disturbed material		
	1208	Layer		0.34 m	Alluvium		
	1209	Layer		0.30 m	Alluvium deposit		
	1210	Layer		0.26 m	Ground make-up		
	1211	Layer		0.24 m	Ground make-up		

APPENDIX 2 POTTERY BY JOHN COTTER

Introduction and Methodology

A total of 7 sherds of pottery weighing 65g were recovered from 3 contexts. This is of mixed prehistoric, medieval and post-medieval date. All the pottery was examined and spot-dated. For each context the total pottery sherd count and weight were recorded on an Excel spreadsheet, followed by the context spot-date which is the date-bracket during which the latest pottery types in the context are estimated to have been produced or were in general circulation. Comments on the presence of datable types were also recorded, usually with mention of vessel form (jugs, bowls etc.) and any other attributes worthy of note (eg. decoration etc.).

Date and Nature of the Assemblage

Overall the pottery assemblage is in a fragmentary condition, although the latest sherds are quite fresh and fairly large. Ordinary domestic pottery types are represented. A single worn sherd of early to middle Iron Age shell-tempered pottery was identified from context (909). Pottery dating to c 1075-1250 was identified from context (704), and 19th- or early 20th-century pottery from context (1116).

Table A2.1 Pottery by context

Context	Spot-date	Sherds	Weight	Comments
704	c1075-1250	4		1x OXAC calc-tempered cookpot sharply angled sagging base. 3x (joining) grey quartz-tempered prob OXY cookpot basal area? All fairly fresh/slightly worn
909	Early-Mid Iron Age	1		Worn bs soft light brown fabric with moderate coarse shell (some dissolved) and some grit. Prob Iron Age Upper Thames Valley source (Dan Stansbie pers comm)
1116	19C-E20C	2		1x rim mod grey stoneware marmalade jar with corduroy decoratiom. 1x rim mod grey stoneware preserve jar with brown ext glaze
TOTAL		7	65	

APPENDIX 3 THE CERAMIC BUILDING MATERIALS (CBM) BY JOHN COTTER

Introduction and Methodology

A total of 7 pieces of ceramic building material (CBM) weighing 1620g was recovered from 4 contexts. This is of medieval and late post-medieval or modern date. All the CBM was examined and spot-dated during the present assessment stage in a similar way to the pottery (see Appendix 2) and the data recorded on an Excel spreadsheet. As usual, the dating of broken fragments of ceramic building material is an imprecise art and spot-dates derived from them are necessarily broad and should therefore be regarded with caution.

Date and Nature of the Assemblage

The CBM assemblage is in a fragmentary condition, although individual pieces are quite fresh. Nothing particularly unusual was noted. Plain roof and ridge tile fragments of broadly medieval date (most likely perhaps 13th-14th century) were identified from two contexts (506 and 508). Pieces of 19th- or early 20th-century stoneware drainpipe (401) and red terracotta land drain (418) were identified; one of which also produced a piece of 20th-century asbestos roofing (418).

Table A3.1 CBM by context

Context	Spot-date	Sherds	Weight	Comments		
401	19-E20C	1	227	Brown salt-glazed stoneware drainpipe frag		
418	20C	3		635 1x frag asbestos roofing. 2x joining frags of cylindrical red terracotta land drain (L19-20C), incl end, with sparse coarse ?shell or pipeclay inclusions		
506	13-16C?	1	61	Frag v flat roof tile or ridge tile in oxidised light orange sandy ware - poss Nettlebed-type fabric? Max 13mm thick. Most likely 13-14C?		
508	13-16C?	2	697	Joining frags (1 large, 1 much smaller) from upper part and side (lacking edges) of a medieval ridge tile. Unglazed. Weathered towards top. Poorly mixed oxidised orange sandy fabric with sparse v coarse red iron oxide & a limestone pebble inclusion. Max 18mm thick. Poss 13-14C?		
TOTAL		7	1620			

APPENDIX 4 ANIMAL BONES BY LENA STRID

A total of 21 animal bones were recovered from this site (see Table A4.1). Most bones were in a good condition (see Table A4.2). Burned bones were absent, and only two bones displayed carnivore gnaw marks.

Most of the major domestic species are present in the assemblage. The presence of dogs is evidenced by gnaw marks on a large mammal long bone and a sheep/goat radius.

The only bones that could be aged, were the pig femora and tibia. They were unfused, deriving from pigs less than 3.5 years old.

No further information can be gained from such a small sample of bones.

Table A4.1. Bone assemblage.

	Cattle	Sheep/goat	Pig	Horse	Medium	Large	Indet.
					mammal	mammal	
Loose teeth	1						
Vertebra					4		
Scapula				·		1	
Humerus				1			
Radius		2					
Femur			2			1	
Tibia			1				
Fibula			1				
Long bone					2	2	
Indeterminat							3
е							
TOTAL	1	2	4	1	6	4	3
Weight (g)	9	13	322	104	108	150	19

Table A4.2. Preservation level for bones.

N	0	1	2	3	4	5
21		66.7	19.0%	14.3%		
		%				

Table A4.3. Incidence of bones per context

Context	Species	No. of bones (refitted)	Sum of weight (g)
303	Pig	4	423
	Medium mammal	4	
510	Sheep/goat	1	171
	Horse	1	
	Large mammal	1	
704	Large mammal	2	55
908	Cattle	1	20
	Sheep/goat	1	
	Medium	2	
	mammal Indeterminate	1	
909	Large mammal	1	56
	Indeterminate	2	

APPENDIX 5 PALAEO-ENVIRONMENTAL REMAINS BY LUKE HOWARTH, DR WENDY SMITH, LIZ STAFFORD AND DR REBECCA NICHOLSON.

Introduction

One sample was taken for evaluation from this site, sample <1> context (510). The sample was taken from a context interpreted as a pond or mill run associated with a mill.

Methodology

The sample was of 35 litres of which was processed by sieving them through a stack of meshes 10-4 mm, 4-2 mm and 2-0.5 mm. Once each fraction was washed the contents of each sieve was bucket floated to separate the plant remains and the heavy residue. The plant remains were caught on a 250 µm mesh to form a flot.

The flots and residues were then air-dried and a brief assessment carried out. The residues were sorted by eye and any ecofactual or artefactual remains removed and recorded After any artefactual or ecofactual material was removed the sterile residues were discarded.

The flots were passed through a 2 mm sieve and fragments of wood or CPR were extracted and the transverse sections were examined under a binocular microscope at x 10 and x 20 magnification. While this provides a reliable method for the identification for ring porous taxa (e.g. oak: *Quercus* sp.) identifications are tentative for the semi- to diffuse-porous taxa (Maloideae, *Prunus* etc.).

Results

Flots

120 ml of flot was produced and was rich in a number of ecofactual remains. Approximately 20 ml of flot was quickly picked through and produced both waterlogged plant remains and charred remains (predominantly charcoal). Apart from the plant remains, six fragments of beetle elytra, one small fish vertebra (probably 3-spined stickleback, Gasterosteus aculeatus), one charophyte (algae) and one water flea Daphnia sp. (water flea) egg were observed. The waterlogged plants remains included Polygonaceae and Batrachium sp. (water crowfoot). Of the waterlogged wood, most of the material could only be tentatively identified as Alder / Willow (Alnus/Salix). The flot also contained significant amount of snails predominantly the freshwater snail Planorbis planorbis, although some Trichia hispida was also present.

Residues

The heavy residues consisted of 12 L. from the original 35 L. processed (the remaining 23 L. being less than 0.5 mm). The inorganic residue was predominantly made up of a fossiliferous limestone all of which was highly rounded. A few fragments of CBM were recovered from the residues along with fragments of limestone, which appear to have thermal fractures. The heavy residue also contained some fragments of Fuel Ash Slag (FAS) though this was only a minor component of the deposit.

The residue also contained a similar array of ecofactual remains. Most of the waterlogged plant remains were made up of woody fragments tentatively identified as Alder/ Willow. *Planorbis planorbis* was also present in the heavy residues though no other snails appear to be represented. Two fragments of amphibian metapodial were found in the residues.

Implications

The material in the sample produces a relatively clear picture. The plant remains all indicate a water edge environment. The occurrence of *Daphnia* (water flea), *Planorbis planorbis* (freshwater snail), the amphibian remains and the fish vertebrae all support a aqueous or marginal environment (i.e. pond / stream). The occurrence of amphibians, fish and charophyte would suggest the water was not particularly polluted at the time the sediment was deposited.

The inorganic residue demonstrates two distinct depositional environments, the highly rounded limestone pebbles indicate a relatively high energy environment such as a stream, whilst the finer grained material, which made up ~23 litres of the sample indicate a very low energy environment such as a pond. The fine grained material was particularly dark this was probably due to a high percentage of fine organic material.

The sample shows considerable potential for environmental analysis, particularly with regard to the form and development of the feature, water quality and surrounding vegetation at the time the feature was open. If this site requires further excavation, then samples should be recovered for charred plant remains, insect remains, waterlogged plant remains and snails.

APPENDIX 6 BIBLIOGRAPHY

John Moore Heritage Services, 2003, An Archaeological Desk-Based Assessment of Wolvercote Paper Mill, Wolvercote, Oxford

OA, 1992, Fieldwork Manual (ed. D Wilkinson)

OA, 2007 Wolvercote Paper Mill, Oxford, Oxfordshire Project Design

APPENDIX 7 SUMMARY OF SITE DETAILS

Site name: Wolvercote Paper Mill, Oxford, Oxfrdshire

Site code: WOLPAP 07

Grid reference: NGR SP4879 0986

Type of evaluation: Ten trench evaluation across the site prior to planning for development

on the site.

Date and duration of project: Seven days from the 10/4/2007 to 18/4/2007.

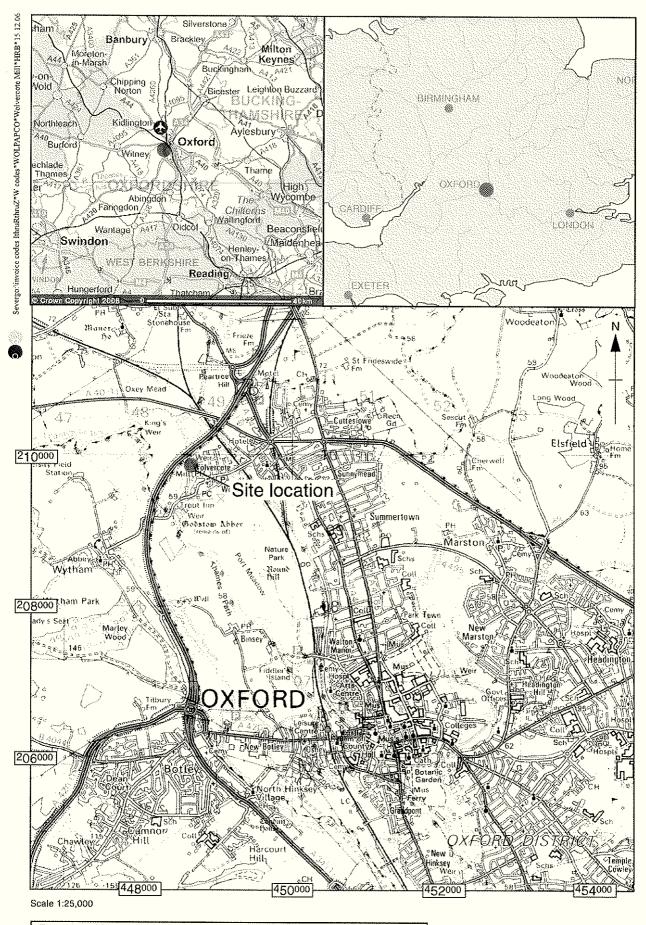
Area of site: 300 m x 190 m

Summary of results: Early-middle Iron Age features in the north of the site, a natural stream

infilled in the 15th century and medieval and post medieval backyard activity.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Oxfordshire County Museums Service in due course,

under the following accession number: OXCMS 2007.13



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Figure 1: Site location

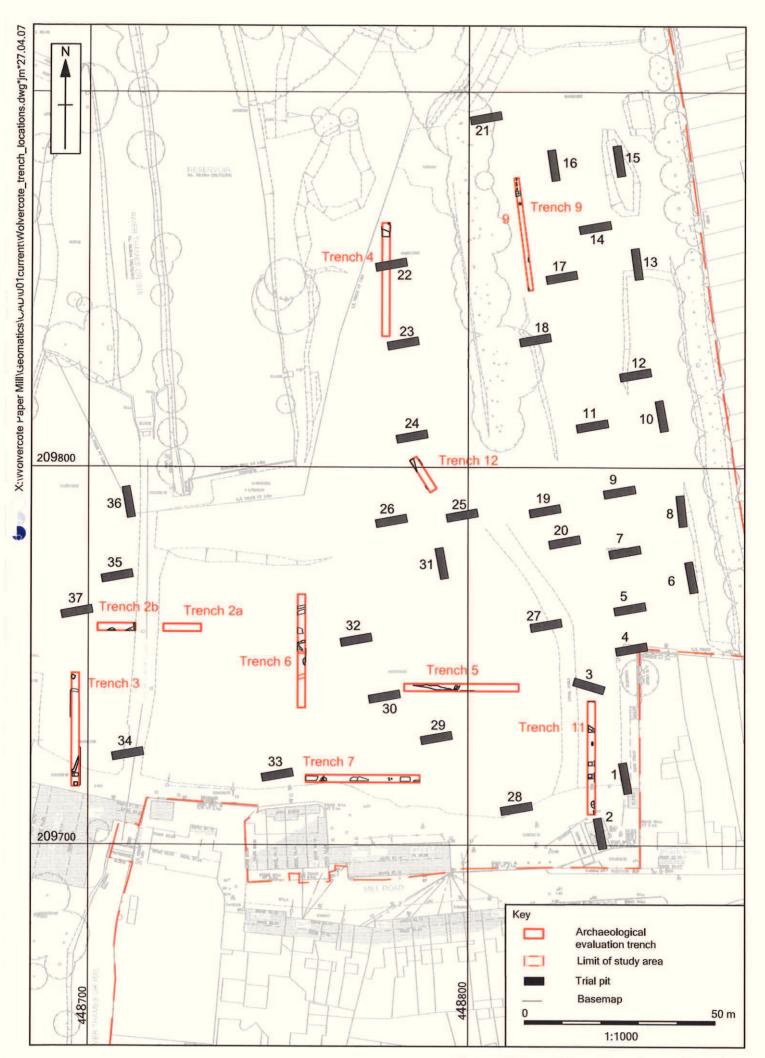
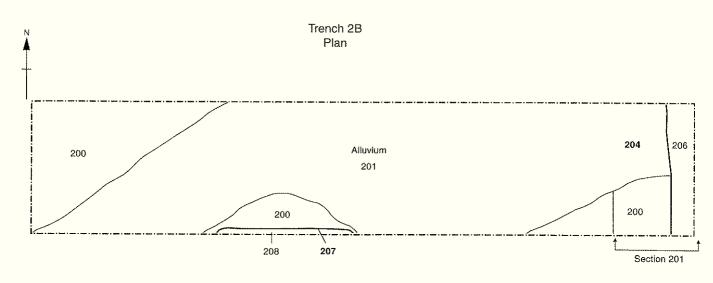
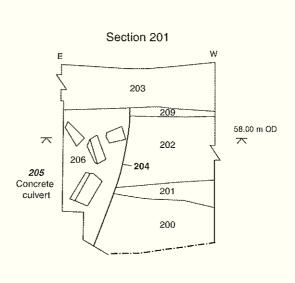


Figure 2: Trench location plan and test pits



<u>2</u> m



1:50

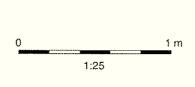
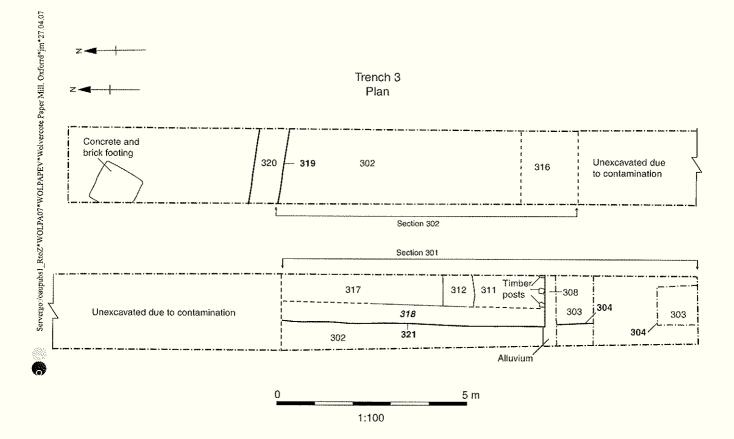


Figure 3: Trench 2B, plan and section



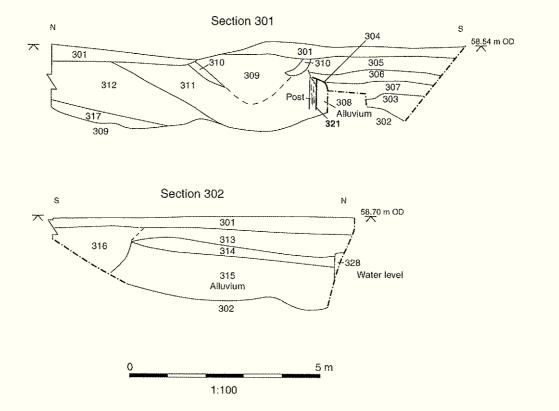
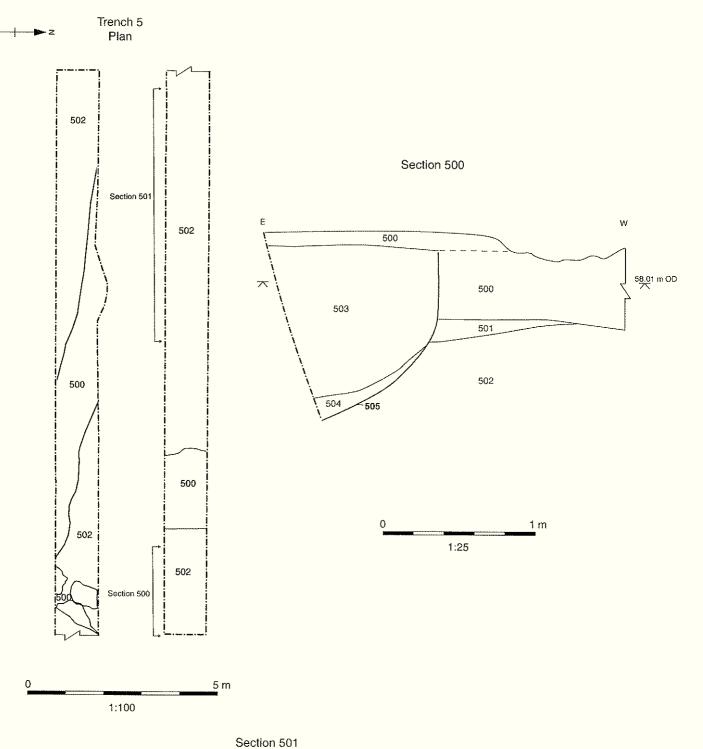


Figure 4: Trench 3, plan and sections

Figure 5: Trench 4, plan and sections



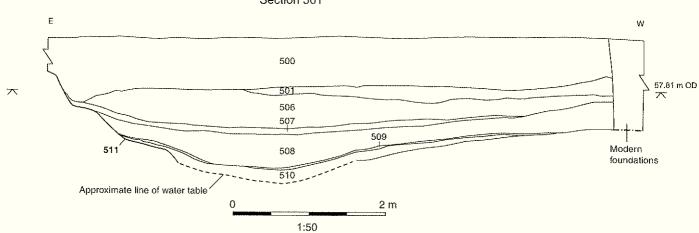


Figure 6: Trench 5, plan and sections

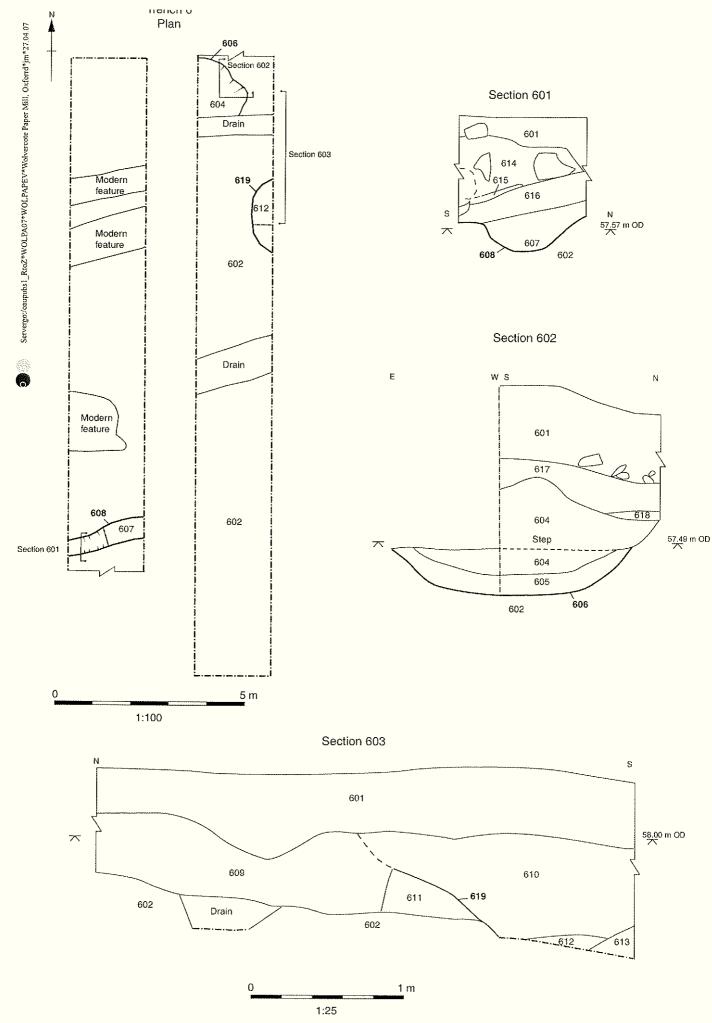


Figure 7: Trench 6, plan and sections

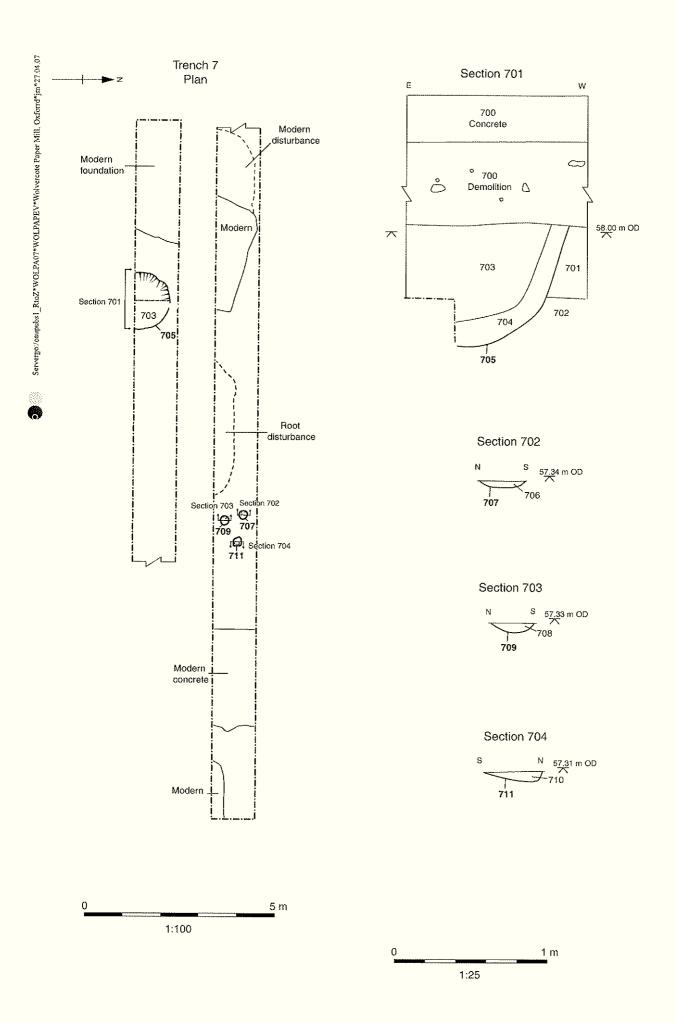
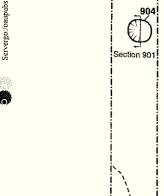
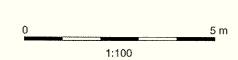


Figure 8: Trench 7, plan and sections



Root disturbance

Section 902



Modern

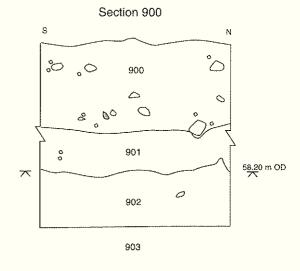
Section 900

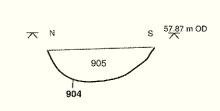
Root disturbance

Modern

Modern

906





Section 901

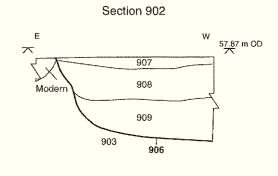


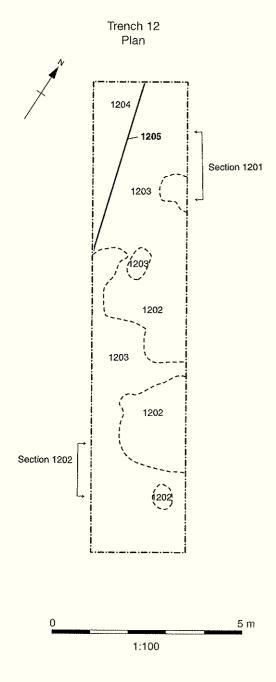


Figure 9: Trench 9, plans and sections

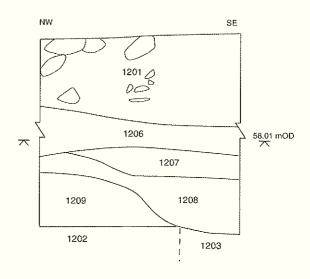
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Figure 10: Trench 11, plan and sections

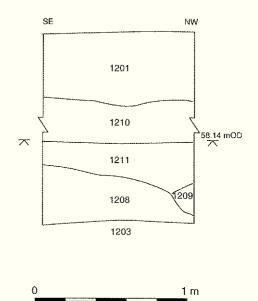








Section 1202



1:25

Figure 11: Trench 12, plan and sections



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