

**FRESHFORD MILL
FRESHFORD
BATH AND NORTH-EAST SOMERSET**

ARCHAEOLOGICAL EVALUATION

For

SURREY AND COUNTIES (SUTTON) LTD

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JULY 2005

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SUMMARY

In February and March 2001, Cotswold Archaeological Trust carried out an archaeological evaluation and historic buildings assessment at Freshford Mill, Freshford, Bath and North-East Somerset. Six trenches were excavated for the evaluation; and a photographic and narrative record of the historic fabric was made as part of the buildings assessment. The evaluation and assessment demonstrated that the site contains complex remains, standing and buried, from at least the mid-sixteenth century onwards to the late twentieth century.

The mill is known from documentary evidence to have medieval origins. It may be recorded in Domesday in 1086, but was certainly later in the possession of Hinton Charterhouse. A single residual sherd of medieval pottery was the only certain physical evidence recovered for medieval activity on the site. The standing and buried remains of a mid-sixteenth-century clothier's house were recorded, and other structures of this period were identified. A major reconstruction of the site in the late eighteenth century saw the construction of major new buildings, re-engineering of the water supply to the site, and the modification or demolition of pre-existing structures. These buildings form the major part of the historic buildings still standing on the site, although none of the original mill machinery or fittings survive and many of the buildings have been altered internally and externally since their original construction. Much of the water supply system has been infilled in this century but survives as buried features recorded in the evaluation.

The historic buildings have group value as a surviving multi-period mill complex and the proposed development scheme, which includes retention of the historic structures, will maintain and enhance this value. The buildings are currently derelict and subject to active processes of decay; these will be halted by the repair and refurbishment works of the proposed new development which will also safeguard the long-term future of the archaeological and architectural resource on the site. Evidence gathered from

archaeological recording works during development at the site will provide valuable information to add to the understanding of the site's history and development, and will add to the site's amenity value. The proposals for development are an excellent opportunity to preserve the historic fabric of the site, promote further understanding, and secure the historic context of the site for the future.

1. INTRODUCTION

1.1 *Introduction*

1.1.1 This report presents the results of an archaeological evaluation and historic buildings assessment conducted between the 26th February and the 12th March 2001 at Freshford Mill, Freshford, Bath and North East Somerset (centred on NGR ST 7870 5960) (Fig. 1). The work was required to provide sufficient information to allow the local planning authority (Bath & North-East Somerset Council) to assess the archaeological implications of the proposed redevelopment of the site for residential use.

1.1.2 The evaluation was conducted in compliance with the *Standards and Guidance for Archaeological Evaluations* (IFA 1997) and the *Management of Archaeological Projects* (MAP 2) issued by English Heritage (1991). The project design (CAT 2001) was submitted to, and approved by, Bath and North East Somerset Council prior to the commencement of fieldwork.

1.2 *Geology, topography, and land-use*

1.2.1 The application area is situated in a region of fairly homogenous geology comprising Great Oolite of the Middle Jurassic (BGS 1979) overlain by alluvium derived from the River Frome and colluvium derived from the surrounding slopes (BGS 1977).

1.2.2 The site is flat and lies within the valley of the River Frome, immediately to the north-east of the river at a height of 30m above Ordnance Datum (AOD). The ground within the study area rises sharply to the north, south and west of the site onto the southernmost part of the Cotswolds. Both the site and study area fall within the Cotswolds Area of Outstanding Natural Beauty (AONB).

- 1.4.1 The site is covered by redundant residential, mill, and industrial buildings, areas of hardstanding and tarmac, sluices, and a mill race.

1.3 Archaeological Background

- 1.3.1 Prior to this evaluation, an archaeological assessment was carried out by Cotswold Archaeological Trust (CAT 2000).

Desk based assessment: principal conclusions

- 1.3.2 The site comprises elements of an industrial complex known from documentary evidence to have been on the site since at least the sixteenth century. Two mills are recorded within Freshford in Domesday (1086) and therefore it is possible that the extant Freshford Mill is constructed on the site of an earlier mill building dating to the medieval and/or early medieval periods. The eponymous nature of “Freshford” Mill and the fact that the parish boundary follows the surviving mill race rather than the westward loop of the river support the hypothesis that the mill is long established in this position (note by Vince Russett in BANES SMR).
- 1.3.3 With the exception of the stray find of a Roman key the broader study area appears to be characterised by medieval and post-medieval settlement and textile production as opposed to earlier activity. However, earlier activity on the site cannot be discounted and it may be under-represented in the archaeological record due to lack of opportunity for archaeological intervention within the study area.
- 1.3.4 Within the existing buildings the substantial remains of a sixteenth- or early seventeenth-century mill building (5a) were recorded during the walkover survey. Substantial structural remains survive of late eighteenth- or early nineteenth-century factory, mill, or associated buildings, the development of which can be traced from documentary and cartographic sources.

1.4 Historical background

- 1.4.1 This section is extracted from a historical and architectural assessment of the site prepared by Dr Timothy Mowl, on behalf of Kingston Estates Limited and is reproduced with their permission.

Medieval Freshford - the Mill and the Carthusian Connection

- 1.4.2 In 1232, Ela, Countess of Salisbury, founded the second house in England of the strictest, most enclosed (and most upper class) of monastic orders, that of the Carthusians. After a brief, false start the prior and twelve monks settled at Hinton, or Henton as early documents usually refer to it. A glance at the map printed for the sale of the 'Hinton Abbey' estate in 1930 will reveal that the nearest point on the Frome to Hinton is Freshford, the obvious place, with a potential ten-foot fall on the fast flowing river, for a monastery mill. Benedictine or Cistercian monks would have taken a mill in hand themselves; but, as a result of their vows, Carthusians are cut off from the world, each monk living in his own small house with a little garden ranged around the cloister by a simple church. They do not toil; they only speak to each other on one day of the week; they pray and are served by a small community of lay brothers who, in Hinton Charterhouse's case, had their house in Friary Wood, just above the river.
- 1.4.3 Living such a reserved life, Carthusian monks required handsome endowments and, such was their reputation for effective intercessions with God, these endowments soon came in (Thompson 1895). On Ascension Day 1362 an Inquisition was taken at Norton St Philip, preparatory to the Licence ceremony of 28 June, which granted Giles the living of that parish. It was then that Master Nicholas de Iford gave in his Patent five messuages (substantial houses), four cottages, a mill, and two carucates of land in Freshford and Wodewyck to Hinton Priory. Wodewyck or Woodwick was the twin village to Freshford,

mentioned in the Domesday Book, which faded gently out of existence as Sharpstone with its water power grew up.

1.4.4 In the first year of Henry V (1413) Walter Hert, a cleric, assigned to the monks of Hinton a messuage, 40 acres of land, 6 acres of meadow 'with appertenances' in Freshford. Then, together with another cleric, John atte Water (a possibly significant surname), he gave the monks another messuage, 11 acres of land and one rood of meadow in Freshford; these last were worth 23 shillings a year.

1.4.5 It is possible that the mill in Nicholas de Iford's donation was not Freshford Mill but Iford Mill, as both mills were owned by Hinton Priory at the time of the Dissolution of the Monasteries. Each mill was always run by a rich clothier who paid a very high rent to the Priory. Iford is, however, not in Freshford, Somerset, but in Westwood parish, Wiltshire. So that 1362 grant most likely related to Freshford Mill not Iford. The mill at Iford was being run in the late-fifteenth century by John Horton who founded a dynasty of wealthy clothiers. His son Thomas would buy Westwood Manor in about 1515 and extend that house notably before his death in 1550. At Freshford the clothier owners were content to build grandly next to their factory rather than retire to a calm rural backwater in the manner of a country squire.

Lutecom's Myll - Freshford under the Tudors

1.4.6 Dugdale's massive *Monasticum Anglicanum* (volume the Sixth, Part 1, page 5) quotes from an abstract of Roll 31 from Henry VIII's Augmentation Office, recording that the fixed return from 'Fresheford et Woodwicke' to the Prior of Hinton each year was £9.10.0. More than a third of that, a substantial 70 shillings rent, came from Freshford's mill, called at that time 'Lutecom's Myll' or 'Ludcombe Myll' from the name of the small side valley now occupied by Dunkirk Mill and Pond House. Whether Lutecom's Myll and that mill mentioned in the donation of 1362 are one and the same is uncertain. Lutecom's could have resulted from that later, 1413, donation of

messuages and meadow land; in which case the two clerics' gift of property worth only 23 shillings a year had become very much more valuable in the course of an entrepreneurial century. It is a pity that we cannot put a name to the clothier who built the sizeable dam and weirs that created the new mill's healthy ten-foot fall of water on a virtually inexhaustible river. Kenneth Ponting, remarks that the weirs along the Frome 'are of a surprising size. The work involved in building, for example, the weir at Stowford must have been enormous for the stones used are massive. The subject of their construction deserves more attention' (Ponting 1971, 14). Such was the flow of the Frome that no mill pond was ever needed, only a widening, to channel the excess flow.

- 1.4.7 Another irritating obscurity covers the precise sequence of events in which followed the dissolution in 1539 of Hinton Priory. The Prior Edmund Horde went quietly enough with a £44 a year pension, as did most of his monks with an average pension of £6.13.4. a year; but the Priory buildings and the Mill were two rich prizes. In 1537 Sir Henry Longe applied to the Crown for the chance of having his estates on a fee farm rent, while Sir Walter Hungerford in his petition to Thomas Cromwell pleaded that: 'all the said lands lyeth within a mile of my poor house of Farleigh, wherefore I beseech you to be a good Lord to me' (State Papers of Henry VIII, volume XIV, part 1, no. 1154). Through what he claimed was a misunderstanding, another predatory knight, Sir Thomas Arundel, had already despoiled the priory buildings of all their moveables and much of the lead, though he had not been officially granted them. It seems likely that the Freshford clothier, William Long, who emerged from the free-for-all in firm possession of Freshford Mill, intact and undespoiled, was a relative of Sir Henry Longe and had been the Priory's tenant for many years previous. On stylistic evidence and on the indication of that 70 shilling rental which he had been able to pay the Prior, William Long is the most likely builder of that tall, gabled mill owner's house which would survive

intact for an early nineteenth-century artist to record and which has left today a battered fragment.

1.4.8 Clothiers' sons tended, for business reasons, to marry clothiers' daughters, and in 1538, apparently anticipating the end of Hinton Priory's rule, Edward Langford, the son of an established family of Trowbridge clothiers, married William Long's daughter Mary. As her dowry, Long gave the couple £40 'with all the mills and implements and grounds with pastures thereto belonging' (Prerogative Court of Canterbury, Will 14 Jankyn). Fortunes in the clothing industry could fluctuate and the clothiers who survived always had a sizeable landholding with rents and flocks to fall back on in bad times for the trade. Long had been fined a few years earlier for putting his flock of 1,000 sheep to graze without permission on the common lands of Steeple Ashton and West Ashton.

1.4.9 In Edward Langford's case the union did not go well. Mary soon died, but he kept the mills and her dowry, marrying again before his father, Alexander Langford of Trowbridge, died in 1545, leaving his considerable properties to be divided between his two sons. But then, according to a Bill of Complaint which Dr Richard Cox, the Chief Almoner made to the young King Edward VI, on February 1552, Edward Langford 'between the hours of one and three of the clock at afternoon the same day feloniously hanged himself, in a barn of his own standing very near the town of Trowbridge' (*Wiltshire Archaeological Magazine*, volume 62, page 103). By law the property of a suicide was forfeit to the Royal Almoner for distribution to the poor so the mills were in serious danger. However, Langford's fellow business men rallied to prove before the courts that 'Hugh Mackerell, card maker and John Skye, wire drawer [both of whom would have been skilled cloth workers involved in raising the nap of the almost finished cloth] did commit the said naughty and devilish act'. It was claimed that Langford's rings and money were taken from the corpse and that there was 'a dry stroke upon the left shoulder'. As further

proof John Berde, a Trowbridge baker, related how, 'weeks before his death', Langford had fallen into the river, the Frome presumably, while supervising hedging operations, and that far from manifesting suicidal impulses, 'in his rising he caught hold of a bough of a crab tree', and when the deponent's servant John Strong 'proffered him his staff he took hold, and so was guided to the land again'.

- 1.4.10 Convinced by these tales, which were supported by Thomas Moleyns, the Vicar of Trowbridge, the court decided against the Royal Almoner and allowed the terms of the will (Prerogative Court of Canterbury Will 7 Powell) of Edward Langford of Trowbridge, clothier (1551) whereby he 'devised Freshford Mill' to the care of Margaret, his second wife, until his son Alexander should come of age. As so often at this period there is some confusion as to precisely how the mill came to the Langfords or Longfords. The elder Alexander, Edward's father, had been described in his will (Prerogative Court of Canterbury Will 2 Allen) as having held a mill 'at Ludcombe in Freshford of Hinton Charterhouse', and leaving his lands in Blandford, Freshford, and Hilperton to Edward. This was the last occasion on which Freshford Mill was described as Ludcombe Mill.

John Ash - the Puritan Clothier 1597-1659

- 1.4.11 Neither the young Alexander Langford, who died early in life, nor his son John were successful clothiers. The great days of exporting 'white' broadcloth to the Continent were over. Apparently as the breeds of English sheep grew heavier and more sedentary they yielded more wool but of a coarse, inferior quality. Wars with Spain further damaged the trade and when James I came to the throne his ill-advised experiment in passing a law, that forbade the export of cloth until it had been fined and dyed in this country, put an end to the trade almost completely. The Dutch refused to import any of this processed cloth because it cut out their own cloth finishing industry; the result was unemployment and widespread distress in the West of England as spinners, weavers, and mill workers alike went idle.

1.4.12 The Methuen Papers (Wiltshire Record Office 1742) reveal, in a series of transactions, something of what was going on in Freshford in these years. The Davysons, John the father and Henry his son, substantial local landowners, had been moving into the clothing business and in 1612 John Langford sold Freshford Mill to Henry Davyson who already had 10 acres of meadow, 48 of pasture, and 10 of wood in Freshford (WRO 1742, document 1607). Henry Davyson ran the business with no innovations until 1 April 1625, when everything began to change. In that first year of Charles's fateful reign 'John Aish', using the trade name of 'John Mercer' bought 'the Messuage' (the mill owner's house presumably), two mills (which could either mean two separate buildings or two fulling stocks), a garden with four acres of land, twenty acres of meadow, and twenty more of pasture in 'ffreshfford and Hinton' (WRO 1742, document 1608).

1.4.13 John Ash's father, James Ash of Westcomb in Batcombe parish, was another rich clothier who had made his fortune by producing Spanish cloth. It was by producing Spanish cloth in abundance, always to exacting standards of quality control that his son would become, using Freshford Mill as his base, one of the richest men in England and one of the most potent political movers in the country. Spanish cloth had been devised by a Beckington (Somerset) man, Benedict Webb, in the late-1580s, working at first in Taunton and then up in the Cotswolds in Kingswood. Webb had served an apprenticeship in France where standards of cloth making were higher. Sometimes described as 'Medley' cloth because the wool used had often been dyed in different colours and mixed to subtle effects before it was spun, Spanish cloth was distinguished by its light weight and smooth, flattering finish. This was achieved either by mixing English wools with the shorter, softer wool from Spanish merino sheep, or by very careful selection of purely English wools. Its production required particular supervision and overseeing at every stage in the complex process of cloth making, and

it would be in this exaction of high standards and by fair dealing with his suppliers and workers that Ash would excel and become influential.

1.4.14 Whether he actually bought Freshford Mill in that transaction of 1 April 1625 or was given it on the occasion of his marriage to Henry Davyson's daughter Elizabeth is not clear. But the marriage would explain his wife's lasting attachment to the mill owner's house and the fact that, though he bought a number of manors and farms in the area for his sons (Stowford for his son Samuel is one instance, and another property in Ireland for his son Jonathan), John and Elizabeth Ash never moved away from the Mill to live the life of country squire and wife as the Hortons had done at Westwood. John seems to have spent much time in London following his duties as an MP in Cromwell's experimental parliaments and liasing with his brother, another Jonathan, and one of his sons, another John, who was based in Antwerp. The Ashes were very much a family business. But in his will (WRO 1742, document 5918) Ash left 'unto my dearly beloved wife Elizabeth Ash...all my goods household stuffe and untensils for trade now in my house at ffreshford in confidence that she will deliver up the said household stuffe and untensils for, trade unto my said son Edward Ash when ever she shale remove away from my dwelling house in ffreshford'. He also left her, together with lands and tenements in four parishes, 'all my plate to be disposed of by her at her devysing furst of my children as she shall think fitte'. There can be no question that what we have in the of the Freshford Mill complex is a relic of John Ash's home and base.

1.4.15 Already Ash was being described as 'the greatest of all the drapperies' (Public Record Office, Privy Council Records for 1639, page 323). In 1637 he had fiercely petitioned the Privy Council against the newly imposed soap monopoly, claiming 'that for making fine West Country cloths we of necessity must have Castile and Venice soap', not West Country 'hard soap'. His cloths went up to London every week in a convoy of wagons and packhorses. Between April 1640 and February

1642 he and his brothers disposed of 1,902 cloths valued at £33,212. As MP for Westbury in the Short and Long Parliaments his wealth enabled him to promise '£10 per week for ye maintenance of ye army' in the event of open conflict with the King (Wroughton 1992, 48). True to his word, when the Civil War broke out Ash 'raised, armed and for many weeks paid a troop of horse, a company of foot and a company of dragoons for ye service of ye west country, before ye contribution was any way settled for ye payment of soldiers in those parts and paid for powder, match and bullet expended by them all, which cost him above £3,000' (quoted by Wroughton, page 83, from Ash's 'Petition' of 1646, Cambridge University Library, Western MSS, add. 89, f.10). He had also badgered the local Parliamentary gentry into bringing professional officers in to lead the Somerset levies.

1.4.16 Despite Elizabeth Ash's attachment to 'my house in ffreshford', none of the Ash children took up residence at the Mill. It had been managed by Edward Twynne and in 1651 Paul Methuen, who had married an Ash daughter, was renting two fulling stocks on the premises. In the 1660s another clothier, Robert Hayward, became the tenant of a building. By 1712, when the Ash family sold the Mill to Anthony Methuen, a cousin and a clothier of Bradford. there was a 'workhouse', or factory and a separate dyehouse with a louvred roof and open brickwork in addition to the main structure of the Mill.

1.4.17 In the doldrum years of the early and middle-eighteenth century all the engineering initiatives of the clothing industry were being taken in the West Riding of Yorkshire. Freshford Mill continued to be worked by tenant clothiers in the traditional way. But then, in 1795, Samuel Perkins, who had been renting the Mill for some years, bought it from Methuen for £2,000. Samuel was a member of the remarkable and extended Perkins family, wealthy investors and entrepreneurs. They bought and sold mills as others might buy racehorses. Samuel, Thomas, and Sarah were all involved with Iford Mill at one time or another, John with Rode, William with Beckington and Trowbridge's

Castle Court Mill, which later became Benjamin Perkins's property, Richard with Lacock, James and Richard with Calne, all at varying dates between 1760 and 1860. Whatever they lacked, it was not money. Now with an influx of Samuel Perkins's capital and an ambitious rebuilding scheme, the Industrial Revolution, some twenty years late, had arrived at Freshford. In 1796 he let out the new premises to Bush, Newton and Bush, the company already working the mill at Limpley Stoke, and retreated to observe how his investment would prosper.

The New Mill

1.4.18 With easy hindsight the new mill buildings at Freshford of 1796-8 can be seen as a commercial misjudgement, but an understandable one. War with France had broken out in 1793 and would rage, with one brief intermission, until 1815. Cloth was needed for army and navy uniforms, victories at sea had opened up new markets in Africa and Asia; the future looked bright. The building industry, on the other hand, had been hit badly; architects were going bankrupt as domestic building came to a virtual standstill and they were prepared to work for minimal fees, while building labourers were equally eager to please. Bush, Newton and Bush were prospering at Limpley Stoke and when they learnt that Thomas Joyce and John Moggridge were building in 1795 a big new factory, the Dunkirk Mill, just around the corner from Freshford Mill up the Ludcombe valley, hoping to take power from a small and unreliable trickle of water, Bush, Newton and Bush were persuaded by the wheeler-dealer Perkins to rent Freshford with its far more powerful stream, and the ambitious plant which could house the machinery that Yorkshire and, to a limited extent, Gloucestershire, had been pioneering.

1.4.19 Perkins created a large mill building, ten bays long, four storeys and an attic high in the contemporary style, dwarfing the late medieval mill owner's house which was now sandwiched between that and a three-storey, five-bay block. Then he commissioned a manufactory, four

storeys high and four bays long, to house the 'new', by Somerset standards, scribbling and carding machines. With the re-engineered water power from the Frome running freely, it was still necessary to install a steam engine and build a tall chimney stack to service it together with a brushing mill with copper boiler and steaming apparatus, two boilers with grates for boiling cloth and a copper scouring furnace. The engine and its stack were placed against the side of one gabled wing of the front elevation of the mill owner's house.

1.4.20 Next to the four-storey manufactory a three-storey block with two mill workers' houses went up. These have the same architraves as the taller block beside them, but only two lights. With these completed the company sat back hoping to profit from the war. The new buildings dominated the valley and, with the tall chimney stack, struck the proper note of industrial virility needed to rank Freshford Mill with Dunkirk and the mill cluster at Trowbridge.

1.4.21 A map of 1824, prepared by Thomas Cruse, land surveyor of Bath, and revised by the valuer H F Cotterell, to make the tithe award of 1837, offers a clear and detailed ground plan of Freshford Mill during its brief occupation by William Gee. At that time the ranges of the great expansion of 1796-8 were intact and unaltered, and would indeed remain so for a century, as the map of the 1930 'Hinton Abbey' sale proves. The numbers on the Tithe Map relate to a key. The field 292 was 'Rack Close' where tenting (racking) and stretching of the cloth took place; 293 and 294 were the orchard and garden referred to in a *Salisbury Journal* advert of 1807; 296 is 'Freshford Factory'; 297a and b were not, in 1837, under Factory ownership. The long, low building dividing these two plots is clearly visible on the early-nineteenth-century painting previously mentioned. This six-bay structure survives in part today, heavily overgrown. It would originally have served as a cart shed and possibly stabling for the transport of the Mill.

1.4.22 The precise functions of the various marked sections, nine in all, of the Mill buildings, are best allocated by listing the processes through which the cloth would have had to pass in 1796 when mechanisation was overtaking the mills of Wiltshire-Somerset, against sporadic Luddite opposition. Some of these processes would have required abundant water for scouring and cleansing, others water merely to power machines. Some would have required furnaces, engines and therefore a chimney stack.

1.4.23 The wool had first to be sorted and hand picked to pull out pieces of weed and thorn. Then it was scoured in 'sig' (urine) in a scouring furnace and hung in water in the dyehouse next to the river. Dying came next in the dyehouse vats and furnace, followed by drying in the stove. Wool was then oiled in Gallipoli (olive) oil, a gallon to every twenty pounds of wool. It was scribbled on frames set with iron teeth over which the wool was drawn with hand cards. Now came the spinning. Afterwards the warp yarn was lightly glued and the weft yarn dampened before being woven together on the loom. Freshford Mill, for reasons of quality, never used the flying shuttle but wove by hand. Fulling in oil soap on the noisy stocks was followed by tenting. Then the nap of the newly stretched cloth was dubbed (raised) up with teasels. This was followed by the highly skilled process of shearing the raised nap; last of all came pressing in a hot screw press. Between water, fire, and steam it is easy to understand what large workforces and sprawling premises were required to produce a roll of saleable cloth.

1.4.24 As events turned out Bush, Newton and Bush had been far too optimistic, renting wildly beyond their needs. In 1807, while the war was still raging and the economic climate should have been favourable to the industry, they gave up their tenancy of the Mill. Samuel Perkins put the brand new buildings up for sale. Another speculator, James Wapshare of Salisbury bought them and let them to Thomas Joyce

who was running the rival factory, Dunkirk, next door. The sale particulars for the Mill's auction, as advertised in the *Salisbury Journal* for 16 March 1807, are of great interest as they reveal Freshford in its prime condition, much as painted by that anonymous nineteenth-century artist. They also list other buildings which the painter omitted.

1.4.25 In addition to the five-storey fulling mill on the old axis there were the two manufactories at right-angles to it, the 'two dwelling houses', the 'Millman's house', which was the gabled medieval building, the 'Dyehouse', the 'Stove', which might well have resembled a dovecot, circular or octagonal, 'gardens, orchard and about seven acres of rich meadow land adjoining'. The driving force of the river could, the advert promised, be doubled if needed, 'part of the premises is let to a respectable tenant (Joyce in the four-storey 'Baldwin' block), but the fulling mill, dwelling houses, land and great part of the other room are in hand'. With mill races to supply power the three principal mill buildings could be used quite flexibly.

1.4.26 By 1816 Thomas Joyce was employing ninety-two workers at the Mill, but within three years another firm, Stoddart and Gale, had taken over. Then in 1829 they went the same way in the luckless premises, advertising in the *Devizes Gazette* of 28 May of that year, a sale of what must have been the entire stock of manufacturing machinery at Freshford Mill, plant to cover every stage of the processing, with all the innovations of the last fifty years represented: 'Extensive and Excellent stock of Scribbling and Carding Engines, Shear Frames, Cutters, Broad Gigs, Billies, Tuckers, Jennies, Reels, Dye and Scouring Furnaces, iron and wood Cloth Racks, broad Spring Looms, Cloth Presses, Press Papers and Planks, Teasels, Weighing Machine, Washing Stage, iron Chests, Writing Desks & etc'.

1.4.27 The gig mills raised nap on cloth, using teasels, a 'slubbing billy' made continuous lightly twisted thread, tuckers were fulling stocks, jennies spun the thread; the remainder are self-explanatory. It looked to be

the end of the road, and for several years the Mill stood empty. In 1835 William Gee moved in, set up more clothing machinery and spent considerable sums on boilers and steam engines (WRO Order Books of Hayden Young, pages 104-6; 139, 159, 166). This would have made the mill owner's house untenable as a domestic building and it was probably during this period that the greater portion of a house, which had survived three and a half centuries, was pulled down. An early-twentieth-century postcard shows the gap with confused scraps of buildings between the Mill's two main lengthwise units with the south-eastern gable of the garden front of the medieval house still visible. Gee retreated in 1840.

1.4.28 Work at the Mill spluttered on intermittently through the middle years of the century. Moore and Edwards, who bought the premises in 1875 only to go bankrupt in 1878, were still employing old-fashioned hand weavers. The last clothing stages of Freshford Mill were ignominious. C Freeman bought the place and used the buildings as a flock mill, producing coarse stuffing for upholstery and mattresses, until 1939. It was during their ownership that the main five-storey range lost its top two floors, thereby seriously diminishing its typical West Country mill profile. In 1945 the Peradin Rubber Company bought the Mill, greatly extending its buildings across the valley bottom in ranges which made no concession to the 1796-8 manufactories

2. THE EVALUATION

2.1 Methodology

2.1.1 Five trenches were excavated in the positions shown (Fig. 2). Trenches 1, 2, and 4 trenches were machine excavated using mechanical excavators, trenches and 3 and 6 were hand excavated, and trench 5 was not excavated as access to it was restricted due to an outbreak of foot and mouth disease and the presence of cattle nearby.

2.1.2 Trench 1 was 10m in length and 1.5m in width, trench 2 was 19m in length and 1.5m in width, trench 3 was 5m in length and 2m in width, trench 4 was 18m in length and 1.5m in width, and trench 6 was 3m in length and 2m in width. Where applicable, machine excavation was halted when the first archaeological horizon or natural substrate was revealed and excavation continued by hand thereafter.

2.1.3 All recording was undertaken in accordance with the CAT Technical Manual 1: *Site Recording Manual*. All archaeological features identified during the evaluation are described fully in Appendix I. Environmental samples were recovered in accordance with CAT Technical Manual 2: *The Taking of Palaeoenvironmental/Palaeoeconomic Samples from Archaeological Sites*, the results of which are described in Appendix II. All artefacts recovered were retained for processing and analysis in accordance with the CAT Technical Manual 3: *Treatment of Finds immediately after Excavation* and are listed in Appendix III. An assessment of the pottery recovered during the evaluation comprises Appendix IV. An investigation of the soils and sediments of the site carried out by *Terra Nova* comprises Appendix V.

2.1.4 The finds will be deposited, with the landowner's consent, with Roman Baths Museum, Bath (Accession number BATRM 2001.1).

2.1 Results: General

2.1.1 The natural substrate of light yellow-grey sandy gravels was encountered in trenches 2, 3, and 4 at depths of 1m, 1.4m, and 1.2m respectively. This was found to be overlain by archaeological deposits and structural elements dating from the ?medieval, post-medieval, and modern periods. Plans and/or sections are provided for trenches 2,3,4, and 6 (Figs. 3,4,5, and 6 respectively).

2.2 Trench 1

- 2.2.1 Trench 1 was excavated to a depth of 2.5m at which point the rapid ingress of water precluded further effective excavation. Made ground (102-6) containing building rubble dating to the modern period was encountered to this depth. This rubble contained asbestos and was immediately backfilled for Health & Safety reasons. The made ground was overlain by the modern concrete surface (102) associated with the industrial complex.

2.3 Trench 2

- 2.3.1 The natural substrate (213) was encountered at the north-eastern end of the trench only at a depth of 1m below the modern ground surface. The natural substrate was overlain by a buried soil horizon (205)/(239) which was in turn cut by a number of archaeological features.
- 2.3.2 The earliest archaeological features were identified in the north-eastern part of the trench. A narrow leat was formed by walls (208) and (210). These walls were constructed from mortar-bonded hand cut limestone blocks. Where the walls faced into the leat they were carefully constructed and were relatively smooth, to enhance the flow of water; the reverse sides of the walls were much more irregular and less care had been taken in their construction. The north-eastern side of wall (208) was abutted by wall foundation (242) which was orientated north-east to south-west. This wall was constructed from dry-bonded, hand cut limestone blocks, three course of which survived and it appeared to be broadly contemporary with leat (208)/(210). A possible stone surface (234) and a large stone block (207) with a socket for a square vertical post appeared to be contemporary with this phase of construction.
- 2.3.3 The leat was initially filled by a grey-green silty clay (245) which was overlain by a grey-brown silty clay (244). This leat was identified after the site visit by David Jordan and Claire Francis of *Terra Nova* had been conducted and therefore is not covered in their report

(Appendix V). However, environmental samples <202> and <201> respectively were recovered from the initial fills of the leat as they had clearly been deposited in a fluvial environment. The samples were found to contain large quantities of molluscs: Sample <202>, context (245), was found to contain approximately 200 molluscs including 12 freshwater bivalves together with small quantities of slag, charcoal, and small animal bone fragments. Sample <201>, context (244), contained 40 molluscs together with small quantities of charcoal and small animal bone fragments (Appendix II).

2.3.4 Wall (212) was identified at the centre of the trench and defined the edge of a leat located to the south-west. It was constructed from hand-cut limestone blocks the upper courses of which were mortar bonded and the lower courses of which were clay bonded. Associated with this leat wall was a series of thin mortar floors (236-8) abutting the wall. Unfortunately the stratigraphic relationship between these floors and wall (210), and hence between the two leats, had been obliterated by the excavation of a service trench [240] at this location.

2.3.4 The leat itself was found to be 2.2m in depth and 6.5m in width, the south-western side defined by a substantial triangular structure (226). This structure was constructed from large machine cut and mortar bonded limestone blocks reinforced with iron staples. The stratigraphic relationship between the leat walls (212) and this structure (226) had been obscured by later development. The channel was initially filled by layers of silty clay (218-22) which abutted walls (212) and (226) and which had been deposited in a fluvial environment. To the south-west of (226) a further leat was identified, the south-western edge of which, must have lain to the south-west of the evaluation trench. This channel presumably continued to the north where it was identified in trench 1.

2.3.5 The later fills of all three leats comprised material which had been dumped into the channels to raise the ground level prior to the

construction of the modern concrete surface. A number of service trenches were also excavated at this time.

2.4 Trench 3

2.4.1 The natural substrate (312) was identified at a depth of 1.4m below ground level and comprised a light grey sandy gravel. This was overlain by make-up layers (310) and (309) which comprised redeposited limestone gravel and a compact mortar floor (311). The mortar floor was overlain by further make-up layer (308) which comprised redeposited alluvium and may have represented an attempt to increase the ground level in an attempt to reduce the risk of flooding. This layer was overlain by the wall foundations (304) and (306) which were clearly associated with the upstanding sixteenth-century building remains. The wall foundations were abutted by make-up layers (307) and (305) which again comprised redeposited alluvial gravel. A sherd of medieval pottery was also recovered from the former. Finally these layers were overlain by further make-up layers associated with the modern concrete floor.

2.5 Trench 4

2.5.1 Natural alluvium was located at a depth of 1.2m and comprised medium grey sandy gravel overlain by medium red-brown silty clay. These deposits were overlain by buried subsoil and topsoil horizons which were in turn truncated by the construction cut for wall foundation (424). This feature was located 7.5m from the north-western end of the trench and comprised at least three courses of dry-bonded limestone blocks orientated north-west to south-east. At the north-western end of the trench the buried topsoil was overlain by a layer of limestone rubble (426) which supported a parallel wall foundation (425). This comprised three courses of offset dry-bonded limestone blocks. These wall foundations represented structural elements of the building range located to the north-east of the sixteenth-century mill owner's house. These features together with the buried soil horizons

were truncated by modern services associated with the extant factory floor.

2.6 Trench 6

2.6.1 The oldest deposit identified was the remains of a partially robbed-out limestone wall (618). This was orientated south-west to north-east and comprised large limestone blocks. These were abutted by a thick make-up layer (620) which comprised small limestone fragments in a matrix of degraded limestone and redeposited alluvium. Pottery dating to the later post-medieval period was recovered from this context. It is probable that wall (618) was levelled prior to the construction of wall (615) on top of make-up layer (620). This curved wall was constructed from hand-cut dry-bonded limestone blocks and comprised the south-western part of a gateway. The extant north-eastern pier of the gateway is still located to the north-east of the evaluation trench. The location of this feature demonstrated that this gateway was of sufficient width to allow vehicular access. Wall (615) was abutted by a make-up layer (619), a thin layer of cinders (617), and a compact mortar surface (609) which together comprised the surface within the gateway.

2.6.2 The sub-surface remains of wall (618) were robbed out prior to the resurfacing, (606), (605), (603), and (604), of the worn surface within the gateway. These deposits were subsequently truncated by the excavation of the construction cut [616] for the mortar-bonded limestone wall (613). This wall together with threshold (614) and a new iron gate formed a narrow gateway intended for pedestrian access only. A low retaining wall (612) constructed from dry-bonded machine-cut limestone blocks was then built at 90° against wall (613). The latest phases of construction was the deposition of a make-up layer (602) for the modern tarmac surface (601) and the concrete repair of the threshold (622). This activity must have obliterated any floor surfaces associated with the narrowed gateway.

3. HISTORIC BUILDINGS ASSESSMENT: RESULTS

3.1 *Introduction*

- 3.1.1 A full photographic record of the historic core of the mill complex was made. These photographs were supplemented by a survey of the buildings, including plans and elevations supplied to CAT by Maplecroft Limited. Due to restrictions imposed by the outbreak of foot and mouth disease, it was not possible for a site visit to be made by Richard Morriss, Historic Buildings Consultant, but he was supplied with a copy of all available information which allowed the compilation of an historic buildings assessment. The detail of this report was subsequently verified on site, and further information added, during a walkround survey by Mark Collard (Deputy Director), Martin Watts (Senior Project Manager) and Simon Cox (Project Manager) of CAT.
- 3.1.2 The aim of the assessment was to identify the main phases and development of the historic core, and to identify the historic building elements surviving therein. No invasive investigation was carried out. In places, modern accretions and areas of sheet cover have obscured the fabric, and in limited areas (eg Building 1), access was not possible due to health and safety considerations. It is clear that in most of the buildings none of the original floor levels survive, and no *in situ* machinery from the mill operation exists on the site. Later industrial use has also resulted in severe disruption to the pattern of historic openings.
- 3.1.3 Within the following narrative, the building numbers (shown on Fig. 2) correspond to the numbering system established during the initial desk-based assessment (CAT 2000), and refer to the clearly-definable individual blocks of still-existing historic building . It should be noted that these blocks include multi-period structural remains and are not intended to refer to discrete historical/architectural entities or events.

3.2 Building 1: The Four-Storey Block

Description

- 3.1.1 This tall four storey mill building is roughly aligned north-south on the western edge of the site, parallel to a mill race to the west and at right-angles to the longer but now lowered main mill building to the south (Building 5b). It is now joined by infill buildings to the formerly separate parallel range, Building No. 2, to the east.
- 3.1.2 Only the western side of the building is fully visible (Plate 1), along with most of the gable ends; the eastern side is largely obscured by the infill buildings. On the west side the building is of four bays and the evidence suggests that it was always of four storeys and has not been raised or reduced in height. It is built of well worked and coursed blocks of local oolitic limestone, with ashlar flush quoins of the same material at the corners, and a plain pitched roof with coped gables
- 3.1.3 The ashlar stone mullioned windows are all of three lights and devoid of any decoration or moulding other than plain projecting stone sills (Plate 1). The only decorative other treatment is modest, with the creation of 'upper' lintels above the real lintels, the gap between filled with loose and poorly bonded stonework, which may suggest that these gaps were originally open and functional, perhaps as ventilation. The only other hint of ornamentation is the inclusion of extended quoins in the upper part of the jambs of each of the windows. The glazing is relatively modern within the openings.
- 3.1.4 The ground and first-floor windows at the south end of this western elevation have been blocked and partly removed by the creation of later openings; these changes occurred after their lintels were lowered. Apart from the large inserted openings with concrete lintels on the ground floor there is also a smaller one at second floor level associated with a 20th-century iron fire escape.

- 3.1.5 Only the northern two bays of the eastern side of the building are visible from the outside, and the ground floor is completely obscured. The fenestration of these two bays seems to have been the same as that on the western elevation, although the windows immediately to the north of the north end wall of the central infill block have had their southern lights infilled. According to the available plans, the window pattern, at second floor at least, was continued at the southern end. At first-floor level this had been altered to accommodate inserted doorways into the main infill block.
- 3.1.6 The ground floor of the northern gable end is partially obscured by modern accretions and it is impossible to see if the openings are original or later additions (Plate 2). Above, there are blocked window openings towards the western (or right-hand) ends of the first and second floors. These were both quite large single light windows, presumably for sashes. At the apex of the coped gable is the base of an integral chimney stack.
- 3.1.7 The ground floor of the southern gable is also partly obscured. The visible opening at ground floor level has visible quoins on its eastern side, while its western edge is rough chisel-cut rubble, clearly a secondary action, and this opening may be original. The rest of this elevation was evidently not quite the same as the northern one. It has two blocked single light windows at first-floor level; only the western window has a sill, as the eastern one has been lost due the insertion of a later opening below. At second floor level, the eastern window is the same size as the first floor windows and has a thin barred balanced sash, its lower section obscured by the roof of an extension. The western one has a two-light timber-framed casement in its upper section and brick blocking below. This was designed as a doorway but has had its sill removed and rebuilt in brick; it was subsequently wholly blocked by bricks in the 20th century. At one stage, therefore, there was some means of gaining access to the doorway - presumably by way of external steps. Both openings at second floor level have the

same 'secondary' lintel and void treatment as the other openings within the buildings. There are no windows at third floor level. At the top of the gable the low ashlar chimney stack survives *in situ* and has a simple cornice moulding.

3.1.8 The roof has a fairly modern roof covering that also continues on to the cat-slide roof of the main central infill block. There are two louvres of vents of some kind on the ridge, and at least two small skylights in the east slope. Rising from the middle of the east slope is a very large weatherboarded structure, presumably associated with the top workings of a hoist or internal lift and clearly not primary.

3.1.9 The inside of the building was not inspected and is not considered to be in a very good condition. The floors are apparently of modern concrete and the original window openings have been 'tanked' internally with modern breeze block. Typically these floor spaces would have been open from end to end without partitions.

Discussion

3.1.10 Architecturally, this is a fairly simple structure with utilitarian trimmings typical of the period around 1800. The unadorned mullioned window forms are common in areas where good quality building stone can be used to form structural lintels, and were thus used in contemporary mill buildings in this area and in the Pennines of Yorkshire. Typically such relatively simple buildings were designed by the master mason in charge of construction with the co-operation of the master millwright responsible for designing the power systems within it.

3.1.11 Without an internal examination of the building it is impossible to assess the power train systems or to confirm whether or not there was some form of power available. On balance it seems certain that there was, and that the power source was water powered - presumably from an external wheel on a now infilled channel in between this building

and Building 2, or by way of an internal waterwheel at right-angles to such a channel within the building.

3.1.12 Once such a power source can be identified it will be easier to identify the function of this obvious important multi-storey mill building. This will also depend on the contemporary uses of the other buildings on the site. If the spinning processes were in other buildings, it is logical to suggest that ancillary processes such as carding and scribbling took place in this one. Alternatively, if no power was available, it could have been used as a loom house or store, or both.

3.1.13 The construction appears to have been fairly traditional, with no up-to-date attempts at fire proofing, but the evidence of gable stacks at each end of the building does show that it was at least ventilated; there are (or were) presumably small fireplaces on each level in the end walls designed to promote an air flow through the building.

3.1.14 As there are apparently no original doorways in the side walls of the building, there must have been doors in one or both of the gable ends; later changes have destroyed much of the evidence for these but it may yet be possible to assess where they were. Similarly, there must have been steps to link the internal floor levels. These were often in narrow stair wings, but no such wing appears to have existed in this building. An alternate manner was to have the stairs in one or more of the corners of the building.

3.1.15 Overall, the shell of a fairly large multi-storey manufactory building of *circa* 1800 survives relatively intact, but the interior has been gutted. It is, nevertheless, an important element of the group and historic value of the site as a whole and, visually, is now the most impressive.

3.2 *Building 2: The Two-Storey Range*

Description

- 3.2.1 Building 2 is a mainly two storey range aligned parallel to Building 1 to the west, the two separated at one time by a mill race that has since been infilled. The buildings are now effectively linked by later additions over the line of the race. Although this range is mainly of two storeys (Building 2a, Plate 3), at the northern end there is a single storey section which appears to be stratigraphically earlier (Building 2b, Plate 4); this portion is also wider than, and on a different alignment to, the rest of the block.
- 3.2.2 The two-storey part of the range is built of well-worked and well-coursed block of local oolitic limestone, with ashlarred but irregular flush quoin blocks and flush surrounds to the original window and doorway openings.
- 3.2.3 Internal observation of the western wall of the two-storey section of the building shows that all the ground floor wall is part of an earlier structure, with a clear horizontal building break. This section of wall appears to contain a blocked fireplace opening with timber lintel on the eastern face, with a corresponding 'bulge' on the western (external) face, presumed to represent the base of the stack. From this feature northwards, the final third of the length of this earlier wall continues up through first floor level above, and the older wallhead is visible within the office space above, with a narrow wall extended upwards beyond when the current building was constructed.
- 3.2.4 The western elevation of the range is largely obscured by later accretions but the eastern side is mostly accessible, apart from that part of the ground-floor section hidden by a modern corrugated-sheeted lean-to. Its windows are two-light mullions with the same general design of plain frames as the three-light windows of Building 1, though they lack projecting sills and the 'second' lintel treatment of Building 1. There is, however, no indication that these windows have

been subjected to a general campaign of alterations and the changes to them have been much more piecemeal. Windows and doorways are quite regularly spaced and where there are breaks from that pattern it is clear that they are a result of change.

3.2.5 Curiously, there are surviving primary doorways at both ground and first floor levels. At the southern end the first doorway is to the first floor and is presently reached up metal steps. The head of the doorway is noticeable higher than those of the first-floor windows. The plain door surround of plain quoined jambs and a flat lintel is the same as the first ground floor opening a little further north. There was a second first-floor doorway to the north of that, but this has been infilled and replaced by a modern casement window. The first-floor doorway towards the northern end of this elevation has machine-made red brick jambs and is clearly a modern addition, as is the window to its north which is higher than the original ones; it is possible that this door is in the position of an earlier window; a window jamb is visible below, at ground floor level.

3.2.6 There are some surviving openings on the western side of the two storey-range but this has been considerably altered, as has the south gable; the upper part of the north gable of the two-storey section is of a single thickness of ashlar, and is clearly secondary to both the single and two-storey buildings, with two blocked openings at ground floor level. The roof covering of the two-storey part is modern, but the timber structure beneath which is visible inside the building, is a simple A-frame structure, which appears to be that installed at the time of reconstruction at the turn of the nineteenth century. At the south end the two-storey section has a coped gable, with a simple ovolo profile on the kneelers.

3.2.7 On the basis of the available evidence it seems clear that the single storey section is earlier than the rest of the range. It is wider than the rest of the range, the coursing and character of the stonework on the

eastern elevation is noticeably different from that further south. Interestingly this coursing continues beyond the existing northern gable of the two-storey section, which is clearly a later insertion/replacement. The mortar used in the single storey building is also noticeably different from the two-story element, being much softer, with a higher lime content.

3.2.8 The single storey structure ends in a coped north gable. At ground level inside are two blocked arched openings, integral with the wall structure. An identical opening is present in the west wall, south of the doorway, with a narrow rectangular flue above it, within the wall fabric, up to the existing wallhead (Plate 5). The northern gable is topped by a stack similar to those at the ends of Building 1, but the outlet for the western wall flue is not known. These must have been housings for furnaces or boilers within the original building.

3.2.9 In both side walls are large and possibly primary doorway openings; certainly the one on the west side has good jambs and if it is inserted, this was done very carefully. In the east wall there is a window, but its detailing, lack of stone mullion and simple internal splay reveals are different to those within the two storey section. The roof of this section has traces of clay pantiles, probably the original roof cover of all of the mill buildings.

3.2.10 At the southern end of the building, although now subsumed by later infill, the block returns to the west (Building 2c), at the side of the former mill race and has a plain gabled southern end wall, but with a corbelled south-east corner at the base of first floor level, with a rounded return at ground floor level. The gable is a single build. It has a plain rubblestone gabled north wall,. This may have been topped originally by a gable stack and there is a second offset external stack or stack base of ashlar attached to the wall. The western elevation has a blocked doorway visible at first floor level. Detail within the original interior of the buildings is obscured by metal sheet wall

cladding. This whole range seems to appear on all the available historic maps, including the Tithe Map.

Discussion

- 3.2.11 The available evidence indicates that this building is more complex than previously thought. There was originally a two-storey building with a single storey structure to the north, although the sequence and date of construction and original extents and functions of these two buildings were not discernible due to later obscuring structures and alterations. While there are no dateable architectural details for the structures, it is certain that they both pre-date the redevelopment of the late eighteenth century, and are most likely structures associated with the complex contemporary with the mid sixteenth-century house of Building 5a.
- 3.2.12 Subsequently much of the two-storey building was rebuilt, with an associated two-storey range attached to its south-western flank. The architectural details, coursing and mortar composition of these later two-storey structures are very similar to the parallel four-storey range (Building 1) and much of the central part of the mill range to the south (Building 5b) and they should be seen as virtually contemporary structures built around 1800.
- 3.2.13 The function of this later range is equally difficult to assess on the available evidence but there appears to have been no power supply to it. It could thus have housed some of the processes within such a mill complex that did not need power - such as cleansing, scouring, and dyeing - or simply for storage of raw materials or finished produce.
- 3.2.14 As in the case of Building 1, it does retain a relatively little altered shell which is an integral part of the late Georgian mill complex, along with demonstrably elements of earlier structures. Few primary fixtures and fittings survive internally. The remaining infill structures between this

and Building 1 are of much later date and of no intrinsic or architectural merit.

3.3 *Building 3: The Cart House?*

Description

- 3.3.1 Situated to the south-east of the main mill complex, this single storey range is now ruinous, with its south gable collapsed and its pantiled plain gabled roof fallen in. A proper analysis of the structure in its present overgrown and dangerous state is impossible. It seems to have had a mainly arcaded western front but the rest is of local limestone rubblestone. There is a short return on this side from the north gable, containing a window. Latterly the building has been used for animal shelter but originally its function is not clear.

Discussion

- 3.3.2 It is shown on the early nineteenth-century watercolour of the site, so is clearly of some historical importance, and appears then to have had an arcaded west front. It may have been a store associated with the tentering field nearby, or could simply have been a cart shed for the vehicles transporting materials to and from the mill.

3.4. *Building 4: The Cottage*

Description

- 3.4.1 The former two-storey cottage (Plate 6) is a small but archaeologically complex structure just to the east of Building 2, and like it aligned very roughly north-south - but not on exactly the same alignment.
- 3.4.2 It is of at least three separate phases. The oldest section seems to be the southern half of the building, built of worked and coursed limestone with flush ashlar quoins on the southern gable. On the western elevation of this part there is a plain two-light window at ground-floor level, with a narrow-barred sash in each light, and two single light windows on the first floor, with the same but slightly wider sashes. The window openings are simple and unadorned, with projecting sills.

- 3.4.3 On the east side the ground-floor is partially obscured but a large opening has been inserted towards the southern end at ground-floor level. Towards the northern end, though not aligned one above the other, are windows on each floor.
- 3.4.4 In the south gable there is a single window towards the east side of the first floor, and an inserted opening on the ground floor. The gable has a plain cope and a stack at the apex supporting a chimney of ashlar, similar to those of Building 1.
- 3.4.5 The visible construction breaks between this section and the main northern part are slightly confusing. The fact that the walls of the northern part end in quoins, and that the adjacent ends of the southern section's walls do not, would normally indicate that it is the southern section that has been added to an existing gable end. However, in the west side at least, the vertical construction break between the two builds is offset further to the north at ground-floor level than it is on the floor above, usually indicating the reverse. Coupled with this, the partition wall between the two builds internally is at an odd angle to all of the other walls.
- 3.4.6 One possibility is that the southern section was curtailed before the addition of the northern section, but the architectural differences between the two - other than the quality of the wall surfaces - suggest only a few years difference between them. The interior is plastered and allows no clue to the interpretation of the evidence from the exterior.
- 3.4.7 The northern section is faced with coursed limestone blocks worked almost to the regularity and smoothness of ashlar. In this section's west wall is a primary ground-floor doorway near to the junction, with a simple single light casement window above. To the north there are two-light windows on both levels, similar to the ground floor one in the

southern section, but with different glazing. The ground floor window is casement, that at first floor a sash.

3.4.8 It was difficult to assess the eastern elevation of this section, or most of its northern gable which is obscured by later buildings. The roof of this section is slightly higher than that of the southern part and has a separate coping on top of the visible portion of its south gable. The north gable has a similar coping, largely hidden by ivy, and a chimney stack at the apex.

3.4.9 Attached to the north gable is a later, narrower, two storey block built faced with what appear to be large machine cut ashlar blocks of limestone. It has a gabled slated roof, now collapsed. Its east wall continued the alignment of the east wall of the main range but its west wall was set back. At one stage there appears to have been a low walled yard added in the resultant space at the north-western corner, which was subsequently raised into a modern flat-roofed extension.

3.4.10 Internally, according to the plans, there are single rooms occupying the ground and first-floor levels of each of the two main components, with a stair on the north side of the oddly angled dividing wall between them; the doorway in the west wall led into a lobby at the foot of this stair. All of these rooms were heated. A surviving fireplace (Plate 7) in the southern section has a smaller grate clearly inserted into a large stone chimneypiece with a depressed four-centre headed lintel that could either be reused or just be a typical example of the conservative nature of many local masons. The north-eastern extension provided an additional room on each level.

Discussion

3.4.11 There is little doubt that this building was domestic in nature and may well have been the miller's house, providing accommodation on site for the mill supervisor. Its two early phases are a little difficult to assess without more detailed examination, but the general style of the

building and decoration suggest that it was also part of the general rebuilding of the site in the years around 1800.

- 3.4.12 Nevertheless, the rather odd and apparently unnecessary angle of the cross-wall needs to be explained, as does the provenance of the four-centre headed chimneypiece. It appears to have been relatively little altered since its three main component parts were built and is another integral part of the mill complex.

3.5 *Building 5a: The Sixteenth-Century House*

Introduction

- 3.5.1 The eastern end of the main mill building has evidently different origins than the much longer section, and is best treated separately. It is likely to predate the main part of the mill by over two centuries, but it is only the fragmentary remains of one part of what had been an imposing house.

Description

- 3.5.2 The interior of the building has been gutted, leaving little or no archaeological evidence of its original layout.
- 3.5.3 Virtually most of the eastern elevation has been rebuilt in brick and is of little historic value, and the southern elevation has also been radically rebuilt. The best surviving portion of the original build is on the north elevation, where it survives almost to its original height (Plate 8).
- 3.5.4 On this elevation there is a distinct vertical construction break between the older fabric and the later fabric of the main mill to the west. There is a further pair of paired angled breaks in the fabric towards the wall top. These presumably represent where the original gable coping has been removed, and where the newer build was added to allow for a straighter eaves line -either for the whole height the new mill or just for what could have been the contemporary remodelling of this end of it.

- 3.5.5 It would seem that, originally, this section of original fabric was the projecting northern end of the west wing of the house. It is built of coursed limestone rubble with flush, but irregular, ashlar quoins. At ground-floor level there is an off-centred three-light window. This has a plain-chamfered ashlar stone frame and four-centred arch heads to each light with plain indented spandrels under a cavetto moulded drip mould. The original, or possibly replacement, vertical glazing stanchions are still in use.
- 3.5.6 The boarded-up three-light window to the first-floor is probably identical in design and would have been centrally placed in the gable of the assumed wing. It is possible that the ground-floor window has been reset in its present position to make room for the broad inserted opening to its east, but it may well be *in situ* also. If it had been moved, there was no need to cut off the eastern 'drop' of the drip mould. It seems more likely that it was offset in this manner because of an original doorway that has been replaced by the present opening. The present opening with its plain ashlar stone surround, appears to be of *circa* 1800.
- 3.5.7 At second floor level there is a smaller two-light version of the lower windows; this would originally have been in the centre of the gable and thus have lit an attic room in the original wing. The overhanging gabled timber housing in front of the window is clearly related to the later use of this part of the range and will be discussed presently (see *below*).
- 3.5.8 A short section of the eastern return of the wing from this gable appears to survive until it meets the later stack base (see *below*). At the top of this short return there is a horizontal construction break in the masonry that seems to be related to the raising up of the wing's walls more clearly visible in the former north gable. There is also a

possible hint of a surviving fragment of a window, but this is not easy to demonstrate at present.

3.5.9 Much of the former west wall of this wing survives to almost wallhead height (Plate 10) within the mill buildings, it appears that the wall has been reduced in height at its upper level as the existing wallhead would require a very steeply pitched roof which does not match with the evidence for the former gable on the northern external façade. This wall joins with the other externally visible section of older masonry at its southern end and parts of what could be a contemporary stair tower.

3.5.10 This section of walling projects from the south elevation of the main mill, and the south-western corner of this section probably represents the original south-west corner of the west wing of the house (Plate 9). The limestone rubble is slightly different in character to that of the exposed northern sections but there seems no reason on the available evidence to doubt that this work is not contemporary. The wall top has been crudely cut down to a shallow lean-to form that clips the top corner of the primary first-floor window. This is similar to the three-light windows on the northern elevation, and has iron stanchions and glazing bars of unknown date. It is slightly less well detailed, lacking a drip mould and with straight-sided rather than chamfered indents in the spandrels to each four-centre-headed light.

3.5.11 Below it is a modern metal two-light casement set within a partially blocked inserted doorway. That doorway had a plain stone surround and was probably added around 1800, presumably in the position of an original three-light window matching the one on the floor above.

3.5.12 In the angle between this wall and the south wall of the later main mill there are the remains of what appears to have been a stair, closet, or garderobe tower. On the ground floor, in its south wall, there is a doorway right in the corner. Part of the base of a chamfered stone

jamb survives but the rest of the surround has been badly damaged. Above, at first-floor level, there is a blocked window, the details of which are hidden behind boarding. In the west face at this level, however, is a small two-light window similar in detail to the others considered to be primary features. This lacks a dripmould but does have chamfered indents in the spandrels; it also has iron glazing stanchions that could be primary.

3.5.13 The top of the tower has been cut down, presumably when the mill was built. Towards the northern end of the west wall of this tower is a possible ragged vertical construction break that appears to be associated with the construction of the later main mill and the bonding in of its south wall with the older fabric.

3.5.14 The addition of the large ashlar stone stack base to the east wall, which was almost certainly topped by the circular tall chimney stack shown on the early nineteenth-century illustration, and other radical alterations made to the wing, indicated that it was then incorporated into the functions of the new mill building. There is a possibility that it was gutted to make room for the steam engine itself - which may then account for what seems to be an axle in the projecting timber structure at the top of the north wall in front of the much earlier windows. Alternatively this section could have accommodated ancillary equipment associated with steam power, such as boilers, etc.

Discussion

3.5.15 These fragments of masonry and the surprising survivals of original window openings represent the earlier history of the site. Clearly not industrial, they are almost certainly part of the west wing of the large house depicted on the early nineteenth-century watercolour. This even shows the surviving tower near the south end of its west wall. The rest of the house - presumably the main central hall range (two-storied according to the watercolour) and the matching east wing has been demolished.

- 3.5.16 Dating evidence of the windows and the general style of the house can only be fairly general, given the innate architectural conservatism of the Cotswolds region. The fact that the building appears to have been quite symmetrical in plan, its hall block appears to have been of two storeys rather than one, and the fairly plain treatment of the window details, point to a date in the mid-to-late sixteenth century rather than any earlier.
- 3.5.17 Apparently a house of two stories with attics, and clearly one of some architectural pretensions. There seems little doubt that it was the home of the principal clothier of the district and the owner of the fulling mill that predated the later buildings on the site. The absence of drip moulds on the southern windows, and the positioning of what was possibly a closet or garderobe tower towards the southern end of the wing, suggest that the principal elevation was to the north, facing the church and village of Freshford.
- 3.5.18 The house was clearly radically altered when the adjacent main mill was built at the end of the eighteenth century. Surprisingly, the early nineteenth-century watercolour suggests that despite this, the house survived substantially intact after both the mill and the steam engine had been completed. The rest of the house may only have been demolished towards the end of the nineteenth century, as a building in that position shown up until the 1884 Ordnance Survey 6 inch map had gone by the time of the 1904 edition.
- 3.5.19 Despite their obviously fragmentary nature, the remains of a sixteenth-century clothier's house on a site with a history of cloth manufacture that only ceased in the mid-20th century are a significant survival and worthy of preservation. If it can be proven that these fragments then became incorporated into the workings of the later mill, perhaps associated with the steam engine, they would become perhaps more important, being a very unusual example of adaptive industrial reuse.

3.6 *Building 5b: The Main Mill*

Description

- 3.6.1 The long mill building that was attached to the west side of the former house has suffered very considerable changes since it was built at the end of the eighteenth century. It is clear is that it is of two or possibly three phases and that it was also once clearly considerably taller. However, none of the original floors survive within the structure.
- 3.6.2 Most of the building is now of just two storeys, though part of the western section is still of three; in the rest the second floor has been removed to create a double height first floor. The early nineteenth-century watercolour suggests that it was probably once of four floors, with full dormer-lit attics. That watercolour also hints at three separate phases of construction; the differences between the western lower section over the mill race are still evident, but the break in the main body of the mill is less easy to identify on the presently available or visible evidence.
- 3.6.3 The main part of the mill is built of coursed limestone rubble and has a modern corrugated roof. The walls have suffered a considerable amount of patching and alteration as openings have been inserted over the years. As much of the ground-floor is obscured by later accretions and the interior much obscured, the full extent of the changes is difficult to clarify. The last major series of alterations seems to have the insertion on very large windows that light the section with the double-height first-floor; these have machine-made red brick jambs and cast-steel windows, so are probably of early to mid 20th century date. Their insertion has also resulted in considerable disruption and reconstruction of the wall fabric around the openings.
- 3.6.4 The junction between the present two and three storey sections is marked by a cross-wall and this may be of some archaeological

significance in understanding the phasing the building. If it is primary, it may have been the western gable wall of an initial building that was subsequently extended westwards. This could explain the position of a blocked wheelpit near this point; that has segmental stone arches and keystones in both side walls and presumably marks the position of an internal, and probably original, waterwheel; however, it cannot be demonstrated categorically at present that this was a primary feature or a later addition. The tailrace from this wheel ran between Buildings 1 and 2.

3.6.5 Traces of original doorways or windows in the remodelled eastern part of the mill are fragmentary and generally obscured; there are a few internal fixtures, such as bearing boxes and possibly shafting supports, but little else.

3.6.6 The situation is less complicated in the western part of the main mill and in the extension at the west end over the present mill race. Towards the western end of the main mill there are surviving primary stone-framed windows at first and second floor levels, all of two lights with plain segmental heads. The end of the taller part of the mill is marked by plain construction breaks on both sides and by a coped gable that overlooks the lower roof of the western extension.

3.6.7 The extension is faced with much crisper ashlar blocks of limestone, possibly machine sawn judging from the markings on them; the masonry is virtually ashlar. It is a two storey range, the side walls continuing the lines of the side walls of the taller section. A broad segmental arch, with keystone, takes the extension over the mill race, which is still in water (Plate 11). It is unclear whether this range represents either replacement of a pre-existing overshooting building or a new construction, but it seems certain that the mill race powered a waterwheel which was integral to the building to the east. The decorative treatment, particularly the segmental arches, corresponds well with the demonstrably earlier structure of the main mill complex.

The stone arched housing and wall support for the west side of the wheel is visible within the range (Plates 12, 13, 14); the eastern side, within the west end of the standing building is visible on both sides of the wall. This has been subsequently blocked and modifications made which on the available evidence suggest continued use of the millrace below in some form.

- 3.6.8 On the southern side there are primary but partially blocked two-light windows with segmental arched heads at ground-floor level and another at the west end of the first floor. A first-floor doorway is obscured by corrugated steel. There is at least one other window of this type on the north elevation, but the rest of it is obscured. These windows are virtually identical to those used in the slightly older adjacent section of the main mill. This section, like that of the main mill, is roofed in corrugated sheeting.

Discussion

- 3.6.9 Whilst a fuller assessment of the main mill is difficult without more information, it is possible to see that it was once a much taller building and one of some grandeur simply because of its size. In date it appears to be of the *circa* 1800 period and probably slightly earlier, given that it was the most important of the mill buildings. The detailing of primary features in the least altered parts of the building, at the west end, are typical of such a date but, perhaps significantly, are not the same as those on the other buildings.
- 3.6.10 The use of segmental heads is typical of the mills in the Somerset/Wiltshire border area in the valleys of the Frome and Avon - seen, for example, as far apart as the nearby Dunkirk Mill and on the recently demolished Upper Greenlands Mill at Bradford-on-Avon six miles to the east. As with the other buildings on the site, this would almost certainly not have been designed by an architect - as such - but by a master mason in conjunction with the millwright.

3.6.11 Being the main mill building on the site, and with at least two potential waterwheel positions - under the centre and at the west gable end - the main manufacturing processes of the site were presumably undertaken in this building. The ground floor would probably have housed the massive fulling stocks, whilst the upper floors were probably used for spinning and other mechanised processes. The attics, well-lit by dormers according to the early nineteenth-century watercolour, could have been used simply for storage but could equally have been used for hand looms.

3.6.12 Radical alterations were evidently made to the building on several occasions, the last possibly as recently as the mid-20th century, which may have been when the upper storeys were removed, along with most of the second floor.

3.7 *Building 6: The South-Eastern Range*

Description

3.7.1 This large square range to the south-east of the main complex does not appear on any of the maps until 1904, so was presumably only built between 1884 and 1904. Even in the century or so that it has existed it has been subjected to a great deal of alteration and has been reroofed quite recently. It is mainly a single storey block built of crude rubblestone with better quality quoins. The building was probably constructed of reused material from other buildings on the site, which may account for the appearance of early two-light windows and ashlar surrounds to others.

Discussion

3.7.2 The building was presumably associated with the flock process of the site carried out mainly in the first half of the 20th century, but is otherwise of little or no architectural or historical value.

4. ASSESSMENT OF RESULTS

4.1 *Date and Interpretation of Archaeological Deposits*

4.1.1 The oldest features identified during the course of the evaluation were the make-up and floor surfaces located in trench 3 and these may possibly represent elements of a building dating to the medieval period. The residual sherd of pottery dating to the medieval period recovered from (307) also attests the presence of medieval activity in the vicinity.

4.1.2 The walls located in the trench were of the same character as the extant walls which comprised the surviving walls of the sixteenth-century mill owner's cottage. Wall (304) was orientated north-west to south-east and represented an internal partition wall dividing the house north-west to south east. The north-western end of this wall survived as an up-standing feature. The remainder of this wall was removed after the demolition of the north-eastern half of the building and a machine-made red-brick equivalent was constructed offset c. 1m to the north-east. Wall (306) was orientated south-west to north-east and again represented an internal partition wall. This wall was probably demolished during the major modern reordering of this whole range.

4.1.3 The deposits located in trench 2 more difficult to date. The narrow leat (208)/(210) and associated structures and features appeared to represent an earlier phase of construction. This was probably followed by the construction of wall (212) and (226) which created the two new leats evinced by both the cartographic (CAT 2000 Figs. 4-6) and the documentary sources (Mowl 2000, 12-3) which formed part of the rebuilding and expansion programme conducted in 1796-8. On this interpretation, despite the lack of artefactual dating, it is suggested from the stratigraphy of the structures that this earlier leat forms part of the sixteenth-century mill complex. Within trench 1 the deep modern infill can be clearly interpreted as the fill of the continued line of one of

these leats after it has passed through the main mill building to the south and returning the water to the river. The stone kerb still visible at ground level is most probably the stone top of one edge of the channel.

4.1.4 Trench 4 was located to identify a building range situated to the north-east of the sixteenth-century mill owner's house. Although no standing remains of this building were identified, cartographic and documentary sources had suggested that the building was also constructed during the expansion of 1796-8 on a site previously occupied by the 'workhouses' (Mowl 2000). The later range was demolished prior to the construction of the extant factory building in the latter half of the twentieth century. No dating evidence was recovered from the wall foundations identified in trench 4, however it is certain that these features provided evidence for one or both of these periods of major construction, in the sixteenth and late eighteenth centuries.

4.1.5 The earliest phase of construction identified in trench 6, wall (618), was undated. However this feature was abutted by a deposit from which pottery dating to the post-medieval period was recovered. This deposit predated the construction of the first (wide) gateway whilst the construction of the second (narrow) gateway is likely to be contemporaneous with the construction of the extension at the north-western end of building 4 in the nineteenth century (Morris 2001) as this construction would have impeded vehicular access between buildings 4 and 2. It would appear that the original gateway is part of the architectural remodelling of the late eighteenth century, clearly leading to the surviving stone bridge over the river, together creating a fine formal entrance to the complex.

4.1.6 The archaeological deposits encountered represented the remains of buildings and features associated with industrial and domestic activity on a heavily modified site dating from between the medieval and modern periods.

4.2 *Survival and Extent of Archaeological Deposits*

4.2.1 The extent of the archaeological deposits is hard to gauge given the limited scale of the evaluation. However, the results from the evaluation suggest that well preserved, complex, buried archaeological remains are located throughout the study area. Preservation generally appeared to be good with little evidence for severe truncation of deposits. The most severe examples were located in trench 4 where the abundant services associated with the modern factory floor had caused significant damage. It is also clear that the 'industrialisation' of the water supply, including weirs, leats, wheel-pits and races, to service the new buildings in the late eighteenth century is likely to have caused considerable disruption to any earlier deposits in this area, which, as a result of its proximity to the course of the river, is likely to have been the focus of the medieval mill. The height of the water table, as encountered during the course of the evaluation, suggested that waterlogged archaeological deposits could survive across the site.

4.2 The archaeological evaluation has achieved the aims set out in the project design, the extent and character of archaeological deposits has been assessed and this information will allow the impact of the proposed development to be gauged and appropriate measures to be taken.

4.3 *The Buildings*

4.3.1 It has proved possible through the assessment of the visible structures, and the linking of these structures to the available historical evidence, to identify the main elements of the site's development. The work has demonstrated that the development of Freshford Mill as seen today has been an organic and incremental process, with pre-existing structures either modified whenever necessary to reflect the new requirements of the owners and operators, or swept away (to survive as buried remains, as shown by the evaluation). This process has clearly

continued through to the late twentieth century and the result of this has been the large-scale modification of some of the buildings. For example, Building 5b has been considerably altered, losing its upper stories and floors, and the insertion of new openings has considerably disrupted the surviving part of its original facade. Building 1 has lost all its original floor levels. Building 5a, one of the oldest structures observed, survives only as a fragment of the original building. In none of the buildings does any of mill machinery or equipment survive, although some elements of associated mountings, fittings and building features are visible in the fabric (detailed consideration of these was beyond the scope of this study).

- 4.3.2 There is no clear absolute dating for many of the structures, beyond architectural style, but the key fixed point is the unmistakeable episode of construction of the late eighteenth century. Through observation of the structures it is therefore possible to identify structures earlier and later than this episode through the stratigraphy of the buildings.
- 4.3.3 No structures from the medieval period can be identified in the visible remains, although the earliest surviving western wall of Building 2 may belong to this period. The focus of activity at this period (as in much of the later period) is most likely to have been close to the river and therefore structures in this area will have been more susceptible to replacement as industrial sophistication and scale of operation grew.
- 4.3.4 The clearest identifiable phase of activity belongs to the sixteenth century, and would seem to belong to the period of tenancy and ownership of William Long and his family in the middle years of the century around the Dissolution. The style and scale of the house would fit with this period, and may be seen as representing a symbolic illustration of the changed circumstances of the mill. The main element is the surviving shell of the west wing of the house. The northern facade, west wall, part of the south wall and an attached tower of the wing survive to wallhead height in most places. The evaluation showed

that the demolished remains of the rest of the house survive as buried structures and deposits. Elsewhere the single storey section of Building 2 and the western wall of the two-storey section of this building (if it is not earlier) would seem to belong to this period. They are both clearly extant at the time of the late eighteenth century reconstruction and are incorporated in the new structures. Some of the buried structures in the evaluation, and the earliest leat in trench 2 may also belong to this period.

4.3.5 The evidence for the major construction works of the late eighteenth century is clear throughout the historic core of the site. Although much altered by later usage, the main elements surviving are Buildings 1, 2, 4 and 5b. The sixteenth-century house continued in use, certainly now (or soon after) for industrial purposes, and is clearly (on the evidence of the historic maps) still standing until at least 1884; the central part was demolished between 1884 and 1904, but the east wing survived as a separate building beyond this. It is unclear whether building 3 and the building remains in trench 4, also visible on the 1841 Tithe map, date to this late eighteenth-century remodelling or to the earlier phase associated with Long's house. This late eighteenth-century period also saw the re-engineering of the water supply to the new manufactory, and the new leats and races found in trenches 1 and 2, and the associated map evidence are physical evidence of this. The construction of the bridge and the new gateway into the mill also belong to this period.

4.3.6 The two centuries since the construction of the New Mill have seen a constant process of alteration of existing structures, infill and accretion, and, in the twentieth century, the demolition of some historic structures to the east of the surviving buildings, the infilling of the old leats, and the construction of large modern industrial sheds and associated above and below-ground service installations.

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- (212) Wall, orientated north to south, located at a depth of 0.06m, upper courses of mortar bonded limestone blocks lower courses of clay bonded limestone blocks. It survived to a height of c. 2.15m and was 0.55m in width, abutted by (222) and (239).
- (213) Natural alluvial gravel, pale brown silty clay with inclusions (20%) of light grey sandy gravel, covered by (205).
- (214) Foundation courses for wall (208), orientated north-west to south-east, located at a depth of 0.25m, foundation course offset by 0.04m to north east, part of wall (208).
- (215) Make-up layer within leat (208)/(210), medium grey-brown mortar rich sandy gravel with inclusions of limestone fragments, 0.05m thick, covered by (202).
- (216) Make-up layer within leat (212)/(226), medium brown-red fragments of slag with 20% burnt gravel inclusions, up to 0.6m thick, covered by (201).
- (217) Make-up layer within leat (212)/(226), medium brown-red fine gravel, 0.34m thick, covered by (216).
- (218) Quaternary fill of leat (212)/(226), dark red-brown silty clay, 0.08m thick, covered by (217).
- (219) Secondary fill of leat (212)/(226), medium grey-brown silty clay, 0.42m thick, covered by (221).
- (220) Thin mortar rich layer, 0.02m thick, part of (219).
- (221) Tertiary fill of leat (212)/(226), pale brown silty clay, 0.12m thick, covered by (218).
- (222) Primary fill of leat (212)/(226), dark black clay silt, 0.06m thick, covered by (219).
- (223) Concrete raft for modern structure to south-east of evaluation trench, abutted by (224).
- (224) Make-up for construction of modern structures to north-west and south-east of evaluation trench, gravel with stone fragments, covered by (202).
- (225) Concrete raft for modern structure to south-east of evaluation trench, abutted by (224).
- (226) Wall, triangular in plan, substantial construction of machine cut ashlar blocks which were bonded with grey mortar and iron staples. Average stone size; 630mm x 570mm x 400mm, located at a depth of 0.36m, covered by (225) and (229).
- (229) Make up for construction of modern structures to north-west and south-east of evaluation trench, within channel to south-west of (226), covered by (202).
- [230] Service trench orientated north-to south-west, steeply sloping sides with a width of 0.7m and a depth of at least 1.1m, filled by (231).
- (231) Fill of [230], loose grey-black silty clay excavated to reveal a corroded iron pipe towards the base of the cut, covered by (201).
- [232] ?Pit cut recorded in section only. It had gently sloping sides, a flat base, and was c. 0.6m in diameter and 0.35m in depth. Filled by (204).
- (233) ?Make-up layer, medium grey-brown silty clay with frequent inclusions of charcoal and mortar, 0.2m thick, cut by [232].

- (234) Stone make-up possibly associated with block (207) and construction of wall (208), sub angular limestone blocks, covered by (233).
- (235) Make-up layer within leat (208)/(210), medium grey yellow sandy gravel with frequent inclusions of mortar, 0.06m thick, covered by (209).
- (236) Mortar floor, medium yellow-grey silty sand with inclusions of limestone gravel, 0.01m thick, cut by [240].
- (237) Possible trample deposit associated to (238), dark grey-brown silty gravel, 0.1m thick, covered by (238).
- (238) Possible floor surface, medium grey yellow small limestone fragments c. 20mm in diameter in a matrix of dark brown-grey silty sand 0.01m thick, covered by (237)
- (239) Buried ploughsoil horizon, medium grey-brown silty clay with inclusions of charcoal fragments, c. 0.5 m thick, overlain by (238).
- [240] Modern service trench, filled by (241).
- (241) Fill of [240], medium grey-brown silty clay with mortar inclusions and modern corroded pipe, covered by (211).
- (242) Possible wall orientated north-east to south-west and butting north-eastern side of wall of (208), partially visible in north-western section. Limestone blocks, dry bonded, three courses surviving, covered by (202).
- (243) Make-up layer within leat (208)/(210), medium grey sandy gravel with frequent inclusions of slag, 0.25m thick, covered by (235).
- (244) Secondary silting within leat (208)/(210), medium grey-brown silty clay with abundant inclusions of aquatic snail shells, c. 0.45m thick, covered by (243).
- (245) Primary silting within leat (208)/(210), medium grey-green silty clay, c. 0.5m thick, covered by (244).

Trench 3 modern ground surface 28.20m OD.

- (301) Modern concrete floor surface, 0.13m thick.
- (302) Make-up for (301), red brick and concrete fragments, 0.22m thick, covered by (301).
- (303) ?Alluvial layer to north-east of wall (303), recorded in plan, covered by (302).
- (304) Wall, orientated north-west to south-east, located at a depth of 0.31m, two courses of mortar bonded limestone blocks survived and the lower one was offset to provide a foundation course. It survived to a height of c. 0.43m and was 0.44m in width, abutted by (306) and (303).
- (305) Make-up layer, medium orange-red silty sand with occasional inclusions of angular limestone fragments, 0.43m thick, covered by (302).
- (306) Wall, orientated north-east to south-west, located at a depth of 0.3m, one course of limestone blocks survived to a height of c. 0.33m. It was 0.4m in width, abutted by (307).
- (307) Make-up layer, medium red-brown silty clay, 0.34m thick, covered by (305).
- (308) Make-up layer, medium brown-grey sandy gravel, 0.49m thick, covered by (304).

- (309) Make-up layer, medium brown-grey sandy gravel, 0.4m thick, covered by (311).
- (310) Make-up layer, light white to grey silty sand with gravel inclusions sandy gravel, 0.18m thick, covered by (309).
- (311) Mortar floor, light grey-brown silty sand, 0.02m thick, covered by (308).
- (312) Natural alluvial gravel, light grey sandy gravel, covered by (310).

Trench 4A modern ground surface 28.9m OD

- (401) Modern concrete floor surface, 0.1m thick.
- (402) Make-up for (401), hardcore with gravel inclusions covered by (401).
- (403) ?Earlier floor surface, medium pink-white gravel with mortar inclusions, 0.06m thick, covered by (402).
- (404) Make-up layer, dark brown-grey sandy silt, 0.3m thick, covered by (405).
- (405) Make-up layer, dark brown-grey silty clay, 0.25m thick, covered by (402).
- (406) Modern concrete foundation for extant building support, 0.5m thick, covered by (402).
- (407) Buried topsoil, dark brown-grey silty clay with occasional small fragments of limestone, 0.6m thick, covered by (408).
- (408) Buried subsoil, medium grey-brown silty clay, 0.3m thick, covered by (406).
- (409) Make-up layer, hardcore with gravel inclusions, cut by [413] and [415].
- (410) Layer, medium red-brown clay silt, 0.09m thick, covered by (409).
- (411) Layer, dark red-brown silty clay, 0.12m thick, covered by (409).
- (412) Natural layer, medium grey gravel sand, 0.25m thick, covered by (408).
- [413] Cut for modern service, filled by (414).
- (414) Fill of [413], includes metal ?water pipe, covered by (402).
- [415] Cut for modern drain, filled by (418).
- (416) Secondary fill of [415], gravel/cement ?sealing drain (418) after use, covered by (402).
- (417) Primary fill of [415], dark black fine deposit containing particles of rubber, covered by (417).
- (418) Modern concrete drain within cut [415], filled by (417).
- [419] Cut for modern drain, filled by (420).
- (420) Modern ceramic drain within cut [419], covered by (403).
- (421) Natural layer, medium grey silty-clay, covered by (426).

- (422) Natural layer, medium brown silty clay, covered by (421).
- (423) Natural layer, medium green-grey silty clay, covered by (412).
- (424) Wall, orientated south-west to north-east, located at a depth of 0.2m, three ?foundation courses of dry-bonded limestone blocks. It survived to a height of c. 0.9m and was 0.45m in width, no construction cut visible, covered by (406).
- (425) Wall foundation, orientated south-west to north-east, located at a depth of 0.2m, three foundation courses of dry-bonded limestone blocks. It survived to a height of 0.5m and was at least 0.7m in width, covered by (404).
- (426) Rubble layer, medium yellow-grey limestone fragments c. 60mm in diameter, in a matrix of medium grey silty clay, covered by (425).
- [427] Cut for modern drain, filled by (428).
- (428) Modern concrete drain within [427], covered by (402).
- (429) Modern disturbance, area adjacent to (428) filled with red brick and cement fragments (hardcore), cut by (402).

Trench 4B modern ground level 28.89m

- (450) Modern concrete surface, 0.1m thick.
- (451) Make-up for floor (450), light yellow-grey sandy gravel, 0.08m thick, covered by (450).
- (452) Make-up for floor (450), light yellow-grey sandy gravel with stone inclusions, 0.14m thick, covered by (451)
- (453) Buried topsoil, dark brown-grey silty clay with occasional small fragments of limestone, 0.64m thick, covered by (452).
- (454) Buried subsoil, medium grey-brown silty clay, 0.25m thick, covered by (453).
- [455] Cut for modern service, filled by (454).
- (456) Modern (disused) electricity cable within [453], covered by (452).
- [457] Cut for rectangular feature, filled by (454).
- (458) Fill of [457], covered by (452).
- (459) Natural layer, medium grey silty-sand, covered by (454).
- (460) Natural layer, medium grey sandy gravel, covered by (459).

Trench 6 modern ground level 27.39m OD

- (601) Modern tarmac surface, 0.05m thick.
- (602) Levelling layer for surface (601), 0.2m thick, covered by (601).
- (603) Mortar surface, light yellow-brown sandy gravel with frequent inclusions of small limestone fragments, 0.08m thick, cut by [616] and [607].

- (604) Limestone rubble forming a rough surface, large limestone pebbles in a matrix of dark brown-grey clay silt, 0.15m thick, covered by (603).
- (605) Trample accumulated on top of (606) through use, dark grey-brown silty sand, 0.1m thick, covered by (603).
- (606) Make-up layer, limestone fragments in matrix of yellow silty clay, 0.2m thick, covered by (605).
- [607] Construction cut for threshold (614), covered by (614).
- (608) Fill of construction cut [607], dark brown-grey clay silt, covered by (622).
- (609) Compact external surface, limestone blocks in a matrix of medium grey-yellow silty sand, 0.12m to 0.19m thick, cut by [610].
- [610] Robber trench for wall (618), length 2m, width at least 0.4m, and depth at least 0.72m with vertical sides, filled by (611)
- (611) Fill of [610], medium brown-yellow silty sand with inclusions of limestone fragments, covered by (606).
- (612) Wall, orientated north-west to south-east, extent wall surviving to a height of 0.92m above ground level, a foundation course of irregular limestone blocks was overlain by four courses of larger, regular, machine cut limestone blocks limestone blocks which were dry bonded. Abutted by (602)
- (613) Wall, orientated north-east to south-west, extent wall surviving to a height of c. 2m above ground level, a foundation course of irregular limestone blocks was overlain by multiple courses of larger, regular, hand cut limestone blocks which were mortar bonded. Abutted by (621).
- (614) Threshold within gateway, large limestone blocks with a length of 0.92m, a width of 0.45m, and a depth of 0.25m, dry bonded, constructed from height of current ground level, abutted by (608).
- (615) Curved wall, orientated broadly north to south, large limestone blocks, dry bonded with a length of 1.5m and a depth of 0.5m survived to the height of modern ground level, abutted by (619).
- [616] Construction cut for wall (613), 0.53m in length, 0.05m in width, and 0.19m in depth with vertical sides and a flat base, filled by (613).
- (617) Cinder make-up for surface (609), dark red brown sandy gravel with frequent burnt inclusions, 0.04m thick, covered by (609).
- (618) Wall, partially robbed [610], 2m in length, 0.5m in width, and 0.4m in depth, a few large limestone blocks remaining at base of robber trench. Wall was orientated north-east to south-west, abutted by (620).
- (619) Make-up for floor (609)/(617), light yellow-grey silty sand with inclusions of larger limestone fragments and pebbles, 0.17m thick, covered by (617).
- (620) Make-up for (619), light yellow-grey silty sand with inclusions of limestone pebbles and alluvial sand, covered by (615).
- (621) Fill of construction cut [616], dark grey-brown clay-silt, covered by wall (612).
- (622) Cement repair to threshold (614), same as (601).

APPENDIX II

The palaeoeconomic evidence by Alan Thomas

Introduction

Two bulk samples were taken from fills (244) and (245) of the mill leat in Trench 2. The purpose of taking the samples was to determine how and if biological remains were preserved in these levels and their potential for reconstructing former environments.

Methodology

The samples were taken according to the guidelines outlined by Wilkinson (1994). The sample from fill (244) was of a 10L size. The sample from underlying fill (245) was taken with an auger and of a 2.5L size. They were taken in sealable plastic tubs and transported to the CAT offices for processing.

The samples were processed using the flotation technique using meshes of 250µm and 500µm for the flot and residue respectively. Both residues and flots were air dried prior to sorting. The dried flots were scanned under a low power binocular microscope for charred plant and molluscan material.

Results

The sample from fill (244) contained approximately 200 molluscs (including 12 freshwater bivalves) and small quantities of slag, charcoal and small bone fragments.

The sample from fill (245) contained approximately 40 molluscs, and small quantities of charcoal and small bone fragments.

Discussion

The presence of molluscan material in the samples indicates that the samples have the potential to aid in the reconstruction of past environments. This should be taken into account should there be any further archaeological work on the site.

APPENDIX III

Finds Catalogue

Context	Spot Date	Pottery			Animal bone		Building Material			Other
		No	Wgt	Fabric	No	Wgt	No	Wgt	Type	
211										2 buttons
243	18 th +	1	5	china			1	29	tile	1 clay pipe stem, 3 slag (348g)
244					1	166				
305					6	186				1 Fe nail
307	Medieval	1	2	sandy	4	163				
308					2	4				
404										1 rubber tube + 2 Fe nails
407					2	123	1	59	brick	2 clay pipe stems, 1 Fe nail
603	18th+	2	1	china						
604							1	823	brick	
605	18th+	1	0	china						
606	19th+	6	197	GRE, china	4	136	9	496	tile	2 coal (30g, D), 1 Fe nail, 1 slag (15g)
609							1	11	tile	
611	17 th -19th	2	10	GRE						
619							1	6	slate (D)	1 Fe nail
620	18th +	7	116	GRE, china						

APPENDIX IV

The pottery by Emma Harrison

A small group of 20 sherds weighing 331g was recovered from seven contexts. The majority of the sherds are small, with only those from the two larger groups (606 and 620) of any size.

One small sherd abraded sherd of medieval pottery in a sandy ware was recovered from (307).

All of the remaining sherds are either china or glazed red earthenwares. Two glazed sherds from (620), one of which is highly abraded, are likely to be early post-medieval in date. However the remaining five sherds point to a later date for the context.

APPENDIX V

An assessment of the soils and sediments: Clare Francis, Terra Nova Limited

Summary

The deposits examined at Freshford mill appear to represent a series of flood deposits, former ground surfaces and buried soils, and made ground. A relatively long phase of alluvial accumulation from standing water and floodwaters is present in the leat, and contain well preserved organic matter. Likewise, the preservation of the buried soils in trench 4 appears to be good. However, the potential of these deposits for further analysis is limited by the lack of dated, early material, and by problems in relating the buried soils with phases of former activity.

Aims

The aims of this study were to advise the excavators on the origins, and their potential to provide evidence for the development of the site.

Background

The mill lies within the Avon Valley approximately 6km south east of the centre of Bath. To the south of the city, the river has eroded a series of strongly incised meanders into the Jurassic, Middle Lias rocks over which it flows. Freshford Mill sits on the gently shelving inner bank of one such meander, at a height of approximately 30m above OD, though the ground surface has been made-up across the site. The river has cut through a sequence of clay, oolitic limestone, fullers earth and sand. The steep, incised sides of the valley are unstable and prone to landslip. It is possible that landslip down stream of the site could from time to time have dammed or partially dammed the river causing water to pond. Within the valley, different soil types have developed in different locations in the valley. Brown rendzinas form on the hilltops and valley sides, Typical calcareous pelosols of the Evesham association form on the lower slopes, Pelo-alluvial gley soils occupy the floodplains in the valley bottom.

The former ground surface at the mill has been heavily altered and raised by soil and building debris. Evidence of the former course and migration of the river is hidden beneath this. Immediately to the north and south of the mill the spur of land on which the site lies shelves steadily towards the river and there is no evidence of former palaeochannels. Approximately 100m to the north, however, there is a small depression cutting off part of the meander. This may indicate the course of a former channel, which suggests that the river may once have been unstable.

It seems likely, however, that the steep valley side to the west of the mill has developed through the gradual westward incision of the river, which may therefore have remained stable and close to its present course over a long period. The mill occupies a favourable location where a fall in the river bed and stable course combine to provide an opportunity for water control through leats. Despite the made-up ground level, the mill still floods regularly.

Methodologies

The site was visited on the 5th March 2001. Five trenches were available for examination of which three contained deposits that were of potential interest or about which the excavators had specific questions. These were leat deposits and soils in trench 2, possible alluvial deposits in trench 3, and buried soils and alluvium in trench 4. Strata were examined and described in the field with the aim of answering the excavators questions and identifying the potential of these deposits for further work.

Results

Sediments in the leat

Organic silts and clays had been identified in the base of trench 2 filling a former leat. A small pit was dug into these deposits to enable a better assessment of their potential, and an auger was used to locate the base of the sediments. Stone was encountered at a depth of ca. 2.2m beneath the modern concreted ground surface. The total depth of silting within the leat, therefore, was approximately 1.4m.

The silts were finely stratified. The basal 1m of deposits differed markedly from those above. The lowest deposits were well-sorted, grey clayey silts and silty clays with occasional laminae of silt and sand. The preservation of organic material was good - twigs and tree leaves were preserved in layers within the silt. These deposits have evidently remained permanently waterlogged. At a depth of ca. 1.5m from the ground surface, glass, machine-sawn wood, and fragments of pot were found.

Overlying these grey silts and clays was a series of well sorted, yellow silts and sands. These were mostly clean, although a few strata did contain woody organic remains. Towards the top of these deposits, there was evidence that alternating oxidising and reducing conditions had caused the redistribution of iron in the deposits, and forming iron pans and nodules.

It appears that the lower clays and silts were deposited from slow moving or standing water sometime after the abandonment of the leat. The deposits, therefore, might not be particularly old, a suggestion supported by some of the finds. The well-sorted coarser deposits appear to have been deposited during times of stronger flow, perhaps when the river was in flood. However, although standing water was probably infrequent, there is no evidence of soil development before they were buried beneath the thick layer of made ground and concrete. This suggests that the deposits remained wet and that the leat may have been inundated with water relatively frequently, leading to the rapid accumulation of the deposits and inhibiting soil development.

Possible alluvial deposit overlying mortar floor in trench 3

A layer of sand overlying an early mortar floor was examined as it was thought that this might represent a phase of alluvial deposition. The deposit formed a thick layer 10cm deep in one corner of the trench. It was a moderately well sorted mixture of rounded and sub-rounded coarse sand and fine gravel. In this part of the section, there was evidence that the sands became finer within the top of the deposit. Overlying it was a unit of medium to coarse gravel in a clayey sand matrix. However, the deposit became less distinct and merged with the coarser gravels elsewhere in the section. The lithology of the coarse gravels in the overlying unit was identical to that of the coarse sands in the unit in question.

These sands and gravels are undoubtedly alluvial in origin. However, their coarse texture, discontinuous distribution, and their similarity with the overlying dumped material suggests that they have been redeposited here as part of the same sequence of deposits as the gravels above.

Beneath the mortar floor was a layer of silty clay, which was briefly examined in plan. The material appeared to be alluvial in origin, but without a section through this deposit, it was not possible to determine whether it was *in situ*, or redeposited. The surface of the silty clay was clean and showed no evidence of pedogenesis (soil development) which suggests that it had not been exposed at the ground surface for any length of time.

Buried soils in trenches 4 and 2

In trench 4, the former soil profile had been buried beneath a layer of made-ground and the concrete floor of the 'modern' standing building. The parent materials on which these soils have formed are slightly different in the north-east end of the trench than in the south west.

In the southern portion of the trench, the soils had developed in a reddish brown, firm, slightly clayey silt. In the northern most portion of the trench, this clayey silt had been the principal parent material from which the soils had formed, but appeared to have been fully incorporated into the soil profile itself. Underlying this are grey sands and silty clays containing limestone gravels. The colour differences between these two deposits is due in part to redox (oxidation and reduction) processes, - the red unit also turns grey 5cm below the base of the trench - and partly to particle size differences. The grey material is coarser and, therefore, contains less of the colloidal iron compounds that give the colour in the finer material. However, it is also probable that the colours represent significant parent material differences, perhaps indicating erosion of different types of material from different parts of the catchment. A layer of gravel was present 10-20 cm below the base of the trench across most of its length.

The soils had brown, granular A-horizons of clay loam ca. 20cm thick - compression due to burial means that they were probably originally deeper. The A horizon had a slightly grey hue suggesting gleying (waterlogging) of the soil. An increase in wetness can be expected following burial as the local water table is drawn upwards by capillary action. However, the fine texture of the parent material suggests that the original soil profile would have been slow draining, although not sufficiently so to produce the mottled appearance characteristic of a gley soil. Coatings of clay were identified around channel voids and indicate that clay has been removed from the overlying strata following their deposition and has moved down through the section. The soils are likely to have been Calcareous Pelosols or Pelo-alluvial soils; however, the A-horizon has been modified by human activity resulting in the incorporation of charcoal, bone and limestone gravel. These soils are biologically active and are usually fertile, the main limitations to their agricultural use are the heavy texture and periodic wetness. This may have affected land-use in the valley prior to the building of the mill.

A possible buried soil was also examined in the northern end of trench 2 beneath a 0.75m layer of made ground and concrete. Here a dark greyish brown, granular sandy clay loam overlay a grey, silty clay alluvium. The boundary between the alluvium and the top soil material was very sharp and this seemed to indicate that what appeared to be the A-horizon of a buried topsoil had been dumped to make up the ground surface. The quantity of charcoal, brick, oolite, and glass in the section helps to confirm this. Numerous fine plant roots were present within this soily material perhaps indicating that this could have been a former ground surface, however, these were found to belong to larger shrub roots within the overlying made-ground.

The boundary was marked by a band of hydromorphism (the effect of oxidation reduction processes in periodically wet soils); concretions of iron had formed around channel voids where oxygenated water has been able to penetrate. Again, it is possible that some of the iron features have formed after burial, however, it is likely that this soil would have been a gleyed alluvial soil and that some of the iron mottling relates to this. Clay coatings were also identified around the blocky soil structures (peds) and channel voids in the made ground deposits and the buried soil indicating that fine matter had moved down profile.

Discussion

Without more extensive and deeper exposures of the alluvium, it is difficult to draw clear conclusions about the nature of this floodplain environment and the accumulation of sediments. However, from the deposits that we have seen we can make a few observations, concerning the nature of deposition immediately before and during the history of the mill. We can also suggest ways in which the riverine environment is likely to have behaved in the past based on the geomorphology of the area and basic hydrological principles.

The alluvia across much of the site are fine textured silts and clays. These have been laid down in slow moving water. Evidence of very fine stratification within the brown material in trench 4 suggests that these are overbank deposits that have accumulated on the floodplain during times of flood. In the top of the leat, the deposits tended to be coarser silts and fine sands; patches of alluvial sand were also identified in the base of trench 4. Again, these are alluvial deposits, laid down in slightly more energetic, faster flowing conditions. During times of flood, we could expect that the former leat, although silted, would provide a natural channel

for the flood waters, and hence water flow might be slightly higher than elsewhere across the site. The grey sands in trench 4 pre-date some of the finer alluvia - running underneath the brown clay - and again they represent deposition in faster flowing water.

The depth of flood deposits above the leat and the absence of soil development in these indicate that the leat may have conducted water relatively regularly. Therefore, flooding may have been a frequent event at this site both in the recent past, and presumably earlier in its history. The strongly incised nature of the valley, however, suggests that the main river channel has probably been relatively stable migrating steadily westwards and gradually undercutting the valley side.

The lowermost silts and clays in the leat appear to have been deposited in very slow moving or standing water. Bands of organic remains contained twigs and tree leaves, presumably blown or washed in from trees growing close by or along the banks of the river upstream of the mill. Occasional bands of sand probably relate to more energetic flood events.

The soil profiles that have developed on the floodplain vary across the site, and relate to their parent materials and their hydrology. There is a close relationship, therefore between the topographic position of a soil and its properties - this pattern of soil types is known as a toposequence. On the lower slopes slow draining Pelosols and Pelo-alluvial soils have developed, whilst closer to the river Alluvial gley soils appear to have formed and in these soil wetness would have been a major limitation to their use. Hill wash and colluvial build-up on the lower slopes and toe slopes would probably have deepened the soil profiles in the valley bottom, although some of this material may have been eroded away by the river.

The deposits examined during the site visit are felt to be of low potential, and hence probably do not justify further geoarchaeological work. The leat deposits whilst deep, organic rich and well stratified appear to have accumulated following the abandonment of the leat and hence, would be expected to quite late in date. If an earlier date could be confirmed for them, then their potential for plant macrofossil and pollen assessment would probably be good. The absence of a flood deposit over the early mortar floor in trench 3 negates any further work here.

The buried soils in trench 4 appeared to be well sealed and there has been little post-depositional mixing of the soil and make-up deposits. Evidence of soil properties and land use immediately before burial, therefore, should be well preserved. However, as no built structures were identified in the trench, the buried ground surface can not be tied directly to any phase of archaeological activity. The ground surface has been buried by the present 1950's or later building. This means that evidence of activity associated with any earlier mill buildings will almost certainly have been lost through subsequent mixing of the topsoil by earthworms. At present, therefore, further work on these profiles is probably not justified. However, should subsequent excavation reveal a direct relationship between a former ground surface and the early mill buildings, then the soils may have the potential to tell us more about the land use. Therefore, any such buried profiles should be sampled.

The wetness of the soils and sediments in the valley bottom has helped to preserve the organic remains. Burial of the site beneath a further layer of made ground, would cause the water table to rise further as water is drawn upwards by capillary action. Whilst, this may provide the waterlogged conditions generally thought to be beneficial to site preservation, thought should be given to the possible effects on the mineral strata. Clay movements associated with the previous made ground deposits illustrate the potential for the movement of fine matter in these materials and its redistribution lower down the profile.

Conclusion

The deposits examined at Freshford mill represent a series of flood deposits, former ground surfaces and buried soils, and made ground. However, the potential of these deposits is limited by the lack of early material, and by problems with relating the buried soils with phases of former activity. Should further excavation produce deposits that can be more firmly tied to the archaeological phasing of the site, the potential for these as sources of archaeological and palaeoenvironmental information might be good.

A note on the identification of environmental evidence

This report is the result of a geoarchaeological study of the mineral and organic deposits and soils. In the course of examining the deposits pollen, diatoms, and other forms of environmental evidence are occasionally found and recorded. However, the samples have not been prepared specifically for the recovery of these materials and no attempt at species identification has been made. This report is not intended to be, and should not be used as, a substitute for full pollen, diatom and other environmental assessments made by suitably qualified specialists. The aim of this report is rather to comment on the nature of the deposits themselves and as contexts for the survival of archaeological and environmental information, to provide relevant information to the other specialists.

Glossary

Alluvial soil – Soils developed within recent alluvium.

Alluvium – Sediment transported and deposited by rivers.

Apedal – Soil or sediment without structure.

Bioturbation – Mixing of the soil by the biota including earthworms.

Buried soil – Old soil profile that has developed upon a former land surface and that has subsequently been buried by a depth of sediment.

Clay – Particle size class $<2\mu\text{m}$ in diameter. Also describes a class of silicate minerals.

Clay cutan (coating) – Thin layer of clay (and occasionally silt and fine organic matter) that has moved down profile in suspension in the soil water and been deposited upon ped faces and round channels elsewhere in the profile. This clay is known as illuvial, i.e. has been transported in the soil water.

Clay translocation – The process by which clay is mobilised in one horizon, suspended in the soil water, and carried to another horizon where it is deposited as clay coatings. The process may occur naturally during soil development, but may also be initiated/exacerbated by disturbance of the soil surface; including cultivation.

Colluvium – Accumulation of soil material at base of slope, whose movement is due to gravity and hill wash.

Eluviation – Removal of material from a soil horizon, either in solution or suspension in the soil water.

Gley – Waterlogged soil type dominated by the effects of poor drainage and anaerobic conditions.

Gleying - Is a reduction-oxidation (redox) process that occurs in waterlogged soils and sediments. Waterlogging results in anaerobic conditions and the reduction of iron from its oxidised ferric form (Fe^{3+}) to its reduced and more mobile ferrous form (Fe^{2+}) giving the soil a grey appearance. Where reducing and oxidising conditions alternate, mottling occurs.

Gravel – Particles of rock that have a diameter of between 2mm and 10mm.

Groundwater gley – Soils with gleyed subsurface horizons that are attributable to a shallow fluctuating water table.

Horizons – Are layers of soil that possess soil (pedological) properties. The A horizon is a mineral horizon formed at or near the surface characterised by the incorporation of humified organic matter. The B horizon is a subsurface mineral horizon that results from the *in situ* alteration of materials or from the inwashing of material from overlying horizons. The C horizon retains evidence of rock (or parent material) structure. Numerous sub-divisions of each exist. Including Ah – A horizon characterised by the accumulation of humus, and Bg - a B-horizon with gleyic properties resulting from waterlogging.

Humification – The process of decomposition of organic matter leading to the formation of humus.

Humus – The dark and relatively stable product of aerobic organic matter decomposition and microbial synthesis; it is chemically very complex.

Illuviation – Movement from one horizon and deposition in another horizon of soil materials.

Interfluvium – The high land between two streams belonging to the same drainage system.

Lag deposits – Coarse deposits found in the bed of a river channel.

Laminae – Layers of sediment less than 1cm thick.

Leaching – Removal of soluble base cations from the soil in the soil water, particularly affects the upper soil horizons..

Load – The total amount of material transported by a river, may be in solution or suspension, or through traction and saltation along the riverbed.

Loam – Soil which contains approximately equal proportions of sand, silt and clay.

Massive – Fine-grained soil horizon or sediment lacking structure.

Matrix – The fine material <2mm within which coarser components are set.

Meander – The curves in a river's course with a radius of curvature more than twice the stream width. Meander channels have steep erosional outer banks, and gently sloping, depositional inner banks. During floods, the water cuts across the neck of the meander cutting a new channel and leaving the meander as a "cut-off".

Palaeochannel – Abandoned former channel of a river.

Parent materials – The parent material of a soil is the material little affected by the present weathering cycle from which the soil has developed. The parent materials of sediments and archaeological deposits are more complex and may include rock, soil, other sediments and anthropogenic debris.

Ped – Soil aggregates with specific shapes, including granular (non-porous), crumb (porous), blocky, prismatic, and platy, that define the soil structure.

Pedogenesis – The process of soil development.

Pelo-/Pelosol – Slowly permeable clayey soil that have formed from argillaceous sedimentary rocks and fine textured Pleistocene deposits such as chalky Boulder Clay.

pH – The concentration of hydrogen ions measured upon a logarithmic scale. Affects the preservation of organic and inorganic materials, and affects the nature of soil development.

Raw soils – Soils that consist of little altered mineral matter and have no diagnostic surface or sub-surface horizons formed by pedogenesis.

Redox potential - Oxidation-reduction potential; is measured in millivolts as the potential difference in the soil solution between a working electrode and the standard hydrogen electrode. Affects the mobility of many soil minerals.

Rendzina – Soils with a distinct humose topsoil no more than 40cm deep overlying little altered limestone or chalk.

Sand – A particle size class between 60 and 2000µm in diameter. Individual grains can be felt if rolled in the hand and are visible to the naked eye.

Sediment – A material that has been transported and then deposited, transport may involve, water, air, man etc. The particle size distribution of the sediment reflects the energy conditions and distance of transport, and particle shape may be altered during transport.

Silt – A particle size class of between 60µm and 2µm. The individual particles can not be felt by hand, but can be felt if ground between the teeth. A silty soil/sediment has a smooth silky feel.

Slaking – The breaking down of soil aggregates in water.

Soil – Sequence of 'horizons' formed *in situ* at the interface between the lithosphere and the atmosphere by pedogenic (soil forming) processes, and that is capable of supporting plant life.

Strata – Layers of sediment that form depositional units, which may be differentiated by their parent materials and/or mode of deposition.

Toposequence – A series of soils whose properties are determined by their topographic location.

Topsoil – The A horizon of a soil, see horizon.

Water table – The upper limit in the soil or below which is permanently saturated with water. This will vary seasonally depending on precipitation.

Welding – The chemical and physical mixing through the processes of soil development of a buried soil profile with a later soil profile forming at the ground surface. The buried soil takes on the characteristics of a sub-soil horizon although certain relict features of its original topsoil properties may be preserved.

Bibliography

Geoarchaeology requires quite specific definitions of certain terms, the glossary has been built from our own experience, but relies heavily on the writings of earlier workers; these have been adapted where necessary. The following sources have been particularly useful: Avery (1980), Bridges (1980), Fitzpatrick (1999), Jones *et al.* (1999), and Walden *et al.* (1999).

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Fig. 1 Site location plan

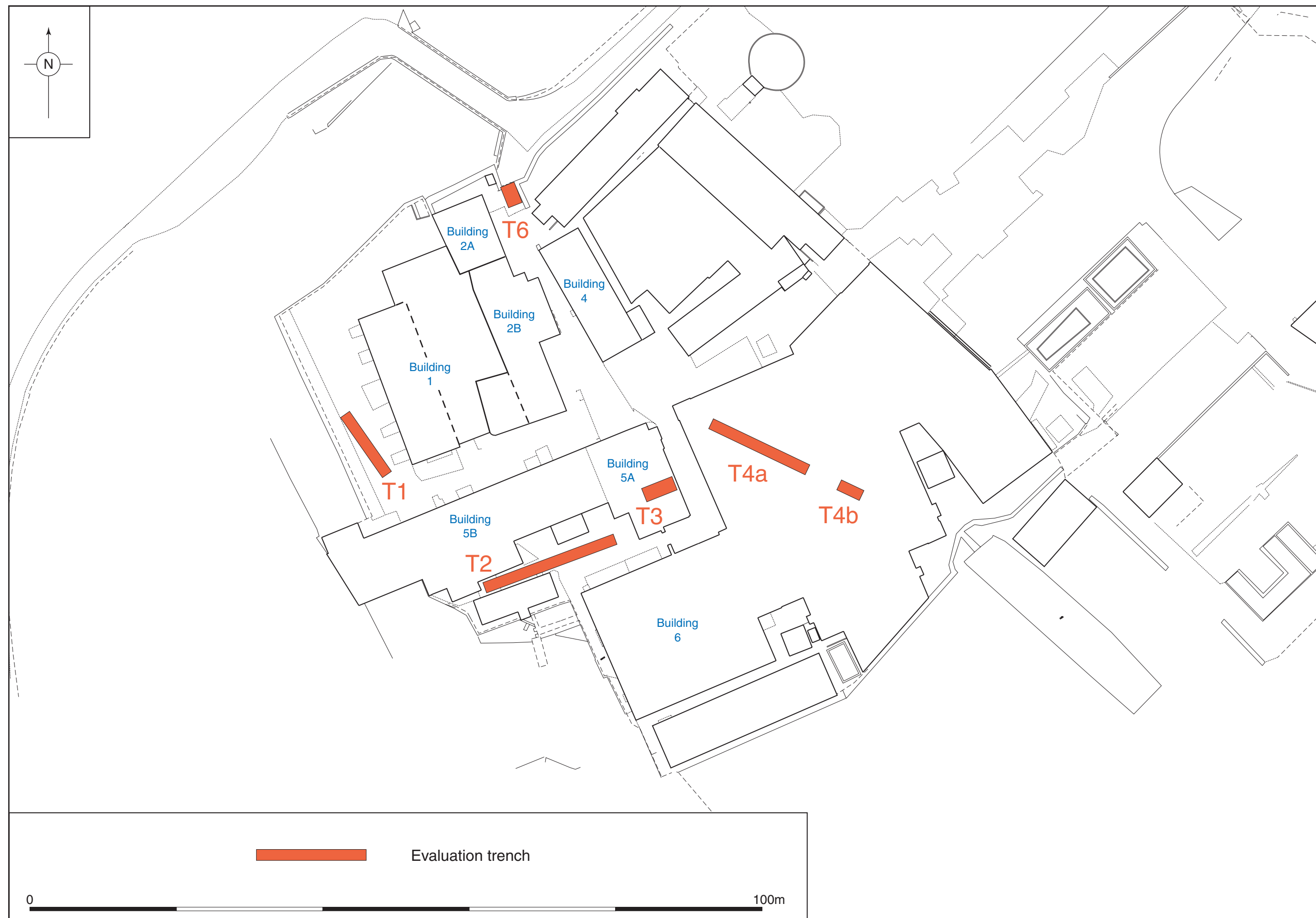


Fig. 2 Trench location plan

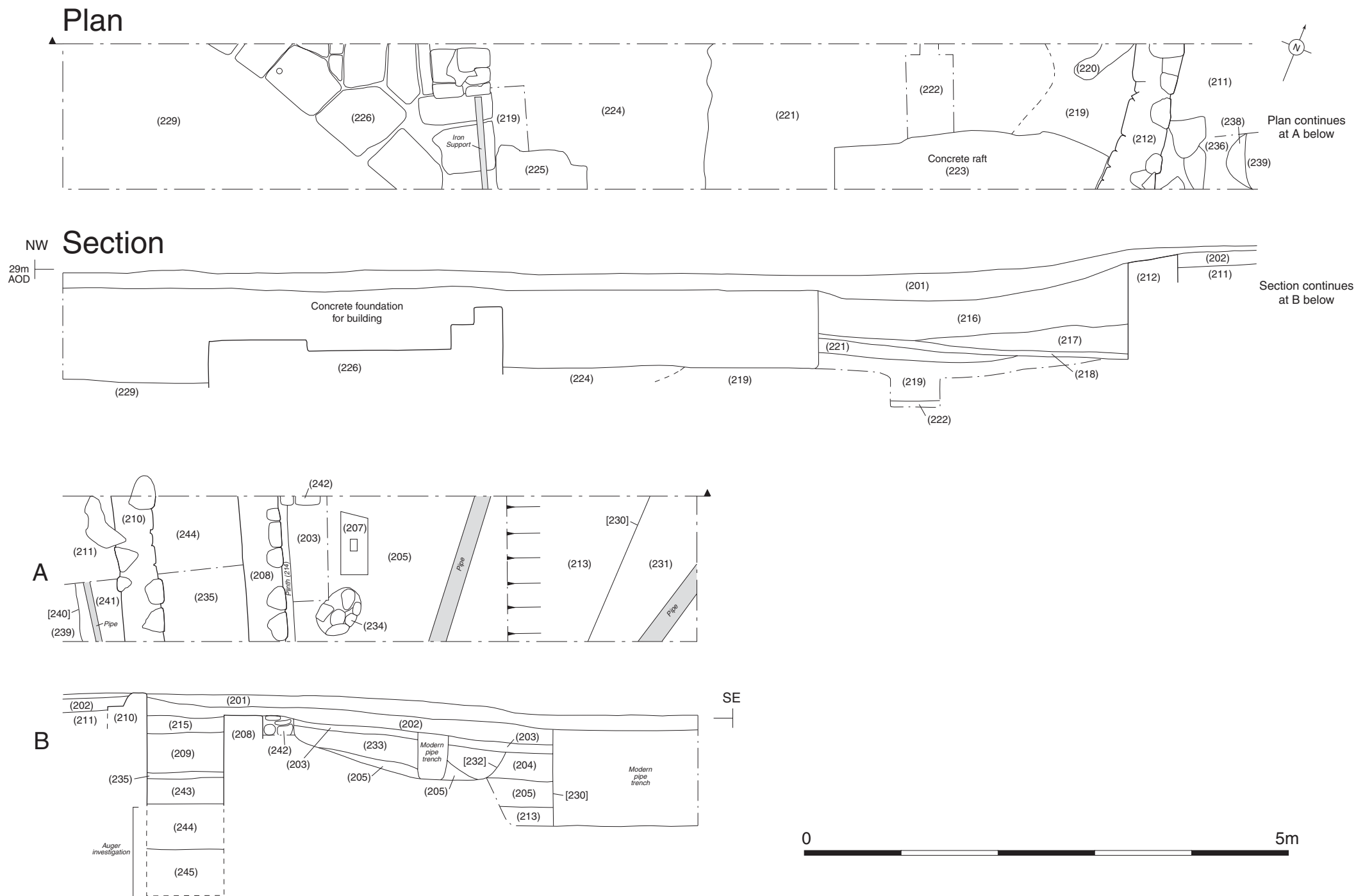
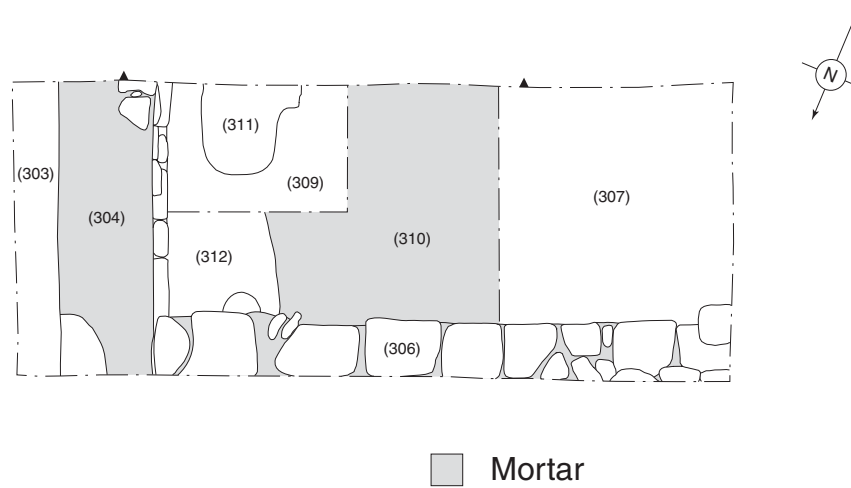


Fig. 3 Trench 2; plan and section (1:50)

Plan



Section

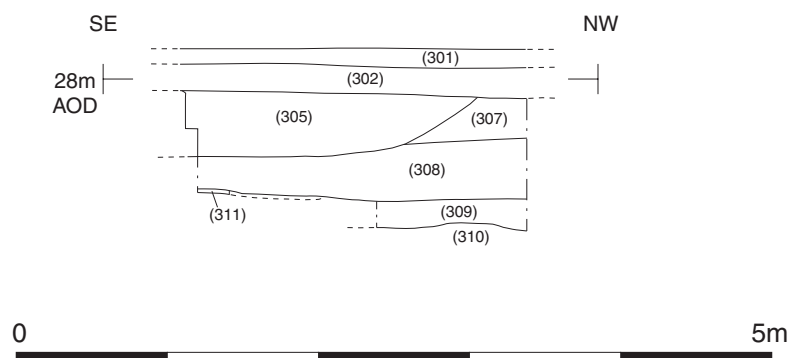


Fig. 4 Trench 3; plan and section (1:50)

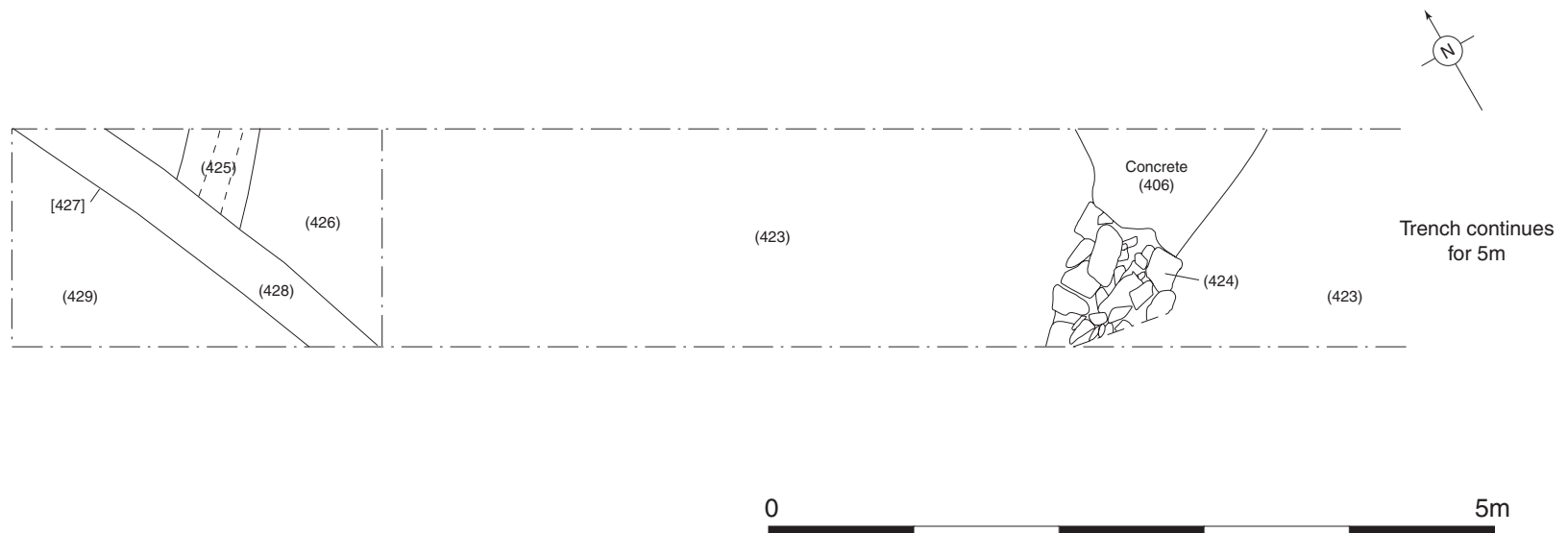
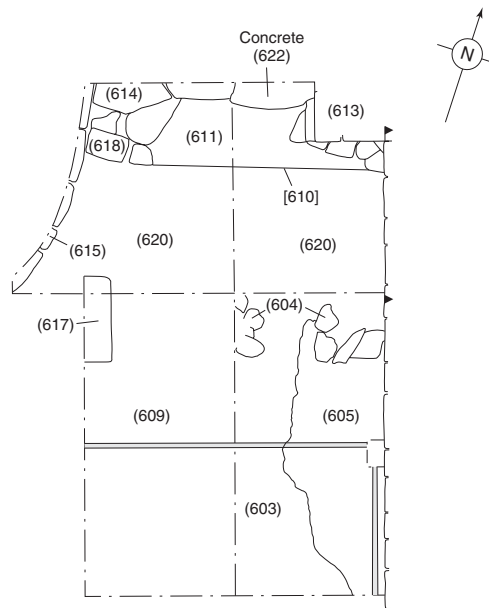
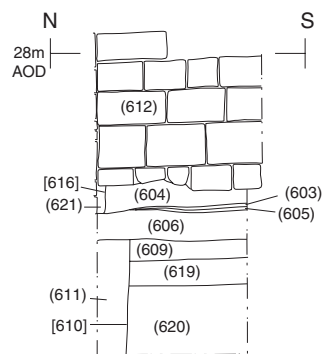


Fig. 5 Trench 4A; plan (1:50)

Plan



Section



0 5m

Fig. 6 Trench 6; plan and section (1:50)



Plate 1: Building 1, west elevation (centre)



Plate 2: Building 1, north gable elevation



Plate 3: Building 2a, east elevation



Plate 4: Building 2b, west elevation



Plate 5: Building 2b, detail of furnace



Plate 6: Building 4, west elevation



Plate 7: Building 4, detail of fireplace



Plate 8: Building 5a, north elevation



Plate 9: Building 5a, south-west corner



Plate 10: Building 5a, interior showing survival of original fabric

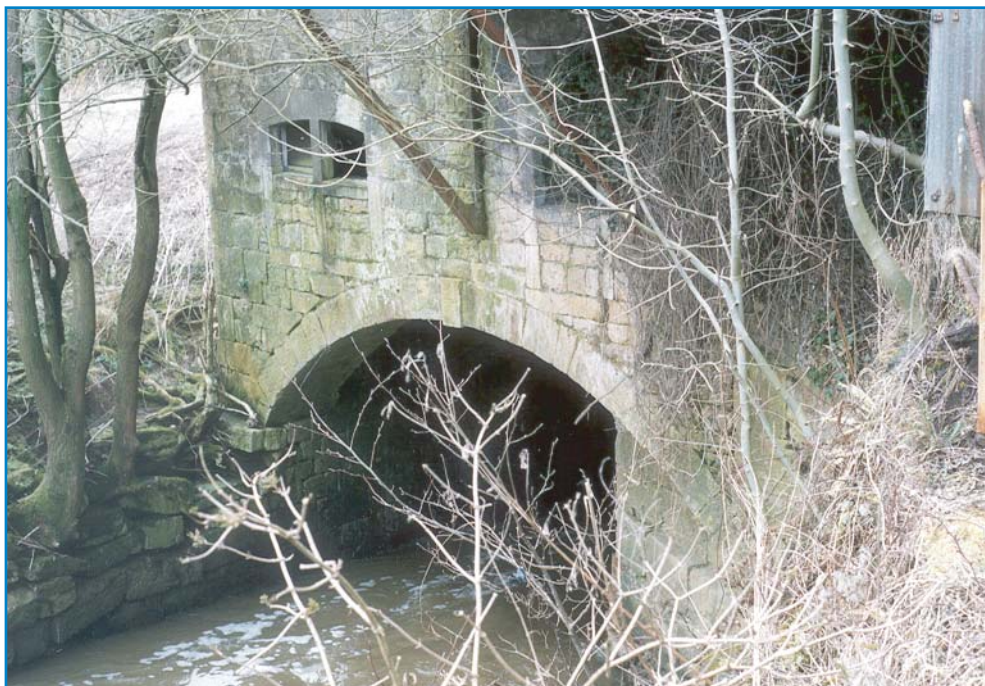


Plate 11: Building 5b, mill race and overshoot building



Plate 12: Building 5b, detail of wheel mountings and housing in east wall of overshoot building



Plate 13: Building 5b, west elevation detail showing blocked opening and wheel mountings in east wall of overshoot building



Plate 14: Building 5b, detail of upper part of wheel housing (internal face of west wall)