APPENDIX 12: ASSESSMENT OF GEO-ARCHAEOLOGY

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1. Introduction

1.1 Monolith samples were taken from five features on the site:

- through peat deposits associated with Iron Age or Roman timber and brushwood, within a relict western stream channel
- from the ditch that was sealed by make up deposit for the moated site.
- from the eastern moat arm (first phase moat fill/mound extension)
- from the northern moat arm
- from the eastern stream deposits

1.2 The aim of the monolith assessment was to determine the potential of the samples to reconstruct the changing environment and landscape, especially in relation to agricultural activities and the clearance of the 'Wealden Wild Wood'. It also aimed to examine the potential for studying the impact of the Medieval occupation and abandonment of the moated site on the surrounding landscape and the nature of the moat and its landscape setting when the site was in use.

1.3 The monolith tins (each 50x50x500mm) were hammered into cleaned section faces. The sediments and stratigraphy visible in section were described and drawn by the excavators on site. The monolith samples were marked on the section drawing and a level, relating to ordnance datum was taken on the top of each tin. Each tin was wrapped in cling film and plastic bags, labelled and stored in the MoLAS fridge prior to assessment.

2. Methodology

2.1 The sediments sampled in each tin were cleaned and described using standard sedimentary criteria. This attempts to characterise the visible properties of each deposit, in particular relating to its colour, compaction, texture, structure, bedding, inclusions, clast-size and dip.

2.2 For each profile, every distinct unit was given a separate number and the nature of the contact between each unit was noted. Where several units appeared to belong to the same depositional episode or event they were grouped together into a zone, designated by a letter. The characteristics of the units identified during monolith description are set out below. These tables also relate the geo-archaeological sequence to the contexts described on site and to any environmental samples taken from them. Where possible, the discussion in section 4 refers to the deposits by their context numbers, to allow comparison with the data from other specialist appendices.

2.3 With the exception of sample <54> the monoliths are well preserved and any pollen or diatom remains that exist within them are likely to survive.

3. Quantification

Western relict stream channel

3.1 Monolith sample <1> section 5 and monolith sample <2> section 7.

3.2 These samples were taken from the north-west part of the site, in the valley of the western stream. They were taken from different profiles, but together characterise the sequence of deposits associated with the timber, brushwood and peat of contexts [227 and 247].

Eastern stream channel

3.3 Samples <38 & 39>: two monoliths from section 11; pre to post medieval levels

Ditch or water mill race

3.4 This feature was parallel to the eastern stream and pre-dated the moated site. Samples <53 & 54>: two monoliths from section 25.

3.5 These samples were taken about 1m apart through the fills of the possible mill-race or ditch. It was not possible within the time constraints of the assessment to securely relate these samples to their precise location within the sequence of recuts and deposits that are associated with this feature. This must be done before any further work is carried out on the monolith samples.

Eastern moat arm (first phase moat fill/mound extension)

3.6 Sample <43>: two monoliths through deposits on the eastern side of the mound. These deposits are probably associated with the filling of a primary moat cut (associated with medieval Building 1) in advance of the construction of medieval Building 2.

Medieval moat – northern arm

3.7 Sample <42> one monolith through primary fill of moat in the northern arm, section 23.

4. Provenance

Western relict stream channel (Figure 6): Dated prehistoric to medieval

- Samples <1> and <2>

Table 23: Assessment of Geo-Archaeology: relict stream channel <1> and <2>

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
		58.92	Top of sequence sampled		
292	A1	[0.16m thick]	Brown 10YR4/3 very compact and hard sandy silt. The unit coarsens upwards to a medium sand at the top, from a silty fine sand at the base. Frequent iron staining of the matrix in the upper part of the unit. Occasional flint pebbles, also towards the top. Distinct irregular contact to:	1	

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
183	A2	0.08m thick]	Dark brown 10YR3/3 compact and moderately hard sandy humic silt. Occasional flint and charcoal granules. Possible increase in sand content downwards.	1	<11>
		58.68	Distinct horizontal contact		
227	B1	[c.0.08m thick]	Greyish brown 10YR5/2 loose humic sand with frequent twigs and inclusions of humic silt and peat. Diffuse contact (less sand downwards) to:	1	
	B2	[c.0.10m thick]	Very dark brown 10YR2/2 soft moderately sandy peat. Well humified, with frequent twiggy plant remains and fine roots. Occasional pebbles. Clear contact to	1	
	B3	[c.0.08m thick]	Greyish brown 10YR5/2 loose humic sand with frequent twigs, wood and inclusions of humic silt and peat (ie: similar to B1).	1	
		58.42	In monolith 1, slightly further downstream than monolith 2, context [227) overlies fine gravel (mostly granule-sized) which may be part of [270] ie: correspond with unit C.		
?227	B1-3	[>0.20m thick]	In monolith 2, context [227] is more compact with slightly less sand than B3 and a more reddish colour (Very dark brown 7.5YR3/1) with more wood fragments. Clear sloping contact to:	2	
?242	B4	[0.09m thick]	Black, 7.5YR2.5/1 soft, very slightly sandy peat. Very well humified: matrix is almost a humic silt. Frequent wood and plant remains.	2	<9>
?247	B5	[0.06m thick]	Very dark brown mottled with greyish brown 2.5Y5/2 and dark yellowish brown 10YR4/6 humic silty sand. Frequent wood and plant remains. Frequent flint granules and occasional pebbles.	2	
		c.58.15	Distinct, irregular contact		
270	C		Greyish brown 2.5YR5/2 slightly silty sand. Frequent iron-stained root channels and occasional orange mottling of the matrix. Some channels still contain woody roots, others are humic filled.	2	
		58.41	Base of profile sampled		

4.1 The sediments sampled in the palaeochannel, together with the morphology of the contexts, as recorded in the sections, suggests that the western valley floor is likely to have contained a meandering river or stream(s) in the later prehistoric period. These appear to have migrated across the valley floor. This has caused deposits characteristic of flowing-water, standing-water and vegetated, relatively dry land surfaces to be interspersed through the profiles.

4.2 The samples can be sub-divided into three main episodes.

Lowest fluvial sand and gravels, dated prehistoric to Late Iron Age

4.3 The lowest deposits are fluvial sand and gravels (context [270]). These are of unknown age but are likely to represent fast flowing water carrying a coarse bed-load, derived from the Greensand, Gault Clay and Clay with Flints deposits of the North Downs. The uppermost part of this context appears to be gravelly, implying that a lag deposit exists, from which fines have been winnowed, during an episode of faster water flow. It is therefore likely that during the early part of the sequence this part of the site lay within the channel of the western stream. It is likely that the sand was deposited as sand-banks (in-channel bars or as point bars, on the inside of meander bends).

4.4 There is evidence for rooting in the sand and gravel of context [270]. This, together with the humic content and gradual transition to the inter-bedded peat of Zone B (context [247]) implies a stable period of plant growth and a cessation of water flow, at least in this part of the valley floor. This may be because the level of water flow fell and the channel bars became dry surfaces above the water flow. Or it might suggest that the main channel flow migrated away from the monolith location, to another part of the valley floor. This level is associated with the lower cut timbers dated by pottery c 50BC to AD 50.

Peat deposits, dated Late Iron Age to medieval

4.5 The overlying peat suggests that the valley floor was damp, or becoming wetter. Lenses of humic clay-silt within the lowest peat deposits (B4: [?242]) indicate that flooding, or pools of standing water, may have existed within a possibly wooded valley floor at this time.

4.6 The higher incidence of sandy lenses within the peat in context [227] implies that (possibly in episodic events) water was flowing across the wooded or vegetated valley floor. This may indicate that the main water flow was migrating back towards the sample location, or else that increased water was flowing down the valley at this time. This level is associated with the upper cut timber and appeared to be cut by a medieval wicker-lined ‘drain’.

4.7 It is not entirely clear, however whether the peat represents *in-situ* plant growth and decay, or an accumulation of wood, carried to this location by human and water transport. A combination of both is possible, as rooting certainly extended from or through [247] into the underlying sand, but the disturbed nature of the sandy units B1 and B3, within [227] suggest localised water flow possibly in a channel-edge location.

4.8 The context descriptions suggest that there is some lateral variation within context [227] and the morphology of the contexts, represented in section, indicate that they merge laterally into one another. These characteristics imply that different deposits were accumulating at the same time in different places as a result of the same event (ie: facies variation). This would be likely to result from slight differences in distance to the main water channel and in elevation. This suggests that [227], [242], [247] and [183] (zone B in the monolith descriptions) all accumulated above a former sand and gravel channel bar.

4.9 The cut timber in contexts [247] & [227] appear to correspond to the initial period of plant growth in this sand bar [247] and to a renewed period of water flow across the vegetated sand bar [227]. However, the time period between these two events is not known. They could be almost contemporary, or be separated by decades or centuries. It is also possible that the two timber layers represent the construction [247] and later abandonment [227] of a riverine structure. This, or associated activities may have influenced the pattern of water flow. Dating of these events (ie: the bottom and top of the peaty deposits) perhaps by radiocarbon should be attempted. This could be related to the date of the pottery in context [183] and indicate the timespan during which the peat accumulated and during which the activity in this location occurred.

4.10 Context [183] was described as peaty on-site but would appear to be a humic silt. It is likely to represent the gradual inundation of the vegetated peat surface by minerogenic sediment derived either from sluggish floodwater (ie: from the river) or else from surface wash and slope processes, given its valley edge location. This process appears to have subsumed the vegetated surface and buried it by further, increasingly coarse grained sedimentation [292].

Hillwash deposits, dated medieval to post-medieval

4.11 The upper part of the profile sampled (zone A) may be interpreted as accumulation from hillwash processes. Slope deposits can be transported by water or gravity and rills and gulleys flowing into the valley might also have eroded the peat and accumulated fans of gravel. The period of this activity can be dated fairly well due to the presence of the underlying medieval wicker drain and overlying topsoil (removed by mechanical excavator). It is likely this hillwash material accumulated as a direct result of tree clearance and agricultural activities on the nearby slopes.

Ditch or water mill race (Figure 4), dated 11th to early 13th century

- Samples <53 & 54>

Table 24: Assessment of geo-archaeology: samples <53 & 54>: section 25

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
			Sample <53>		
		c.58.5	Top of sequence sampled	53	none
1145	A1	[0.06m thick]	Olive brown 2.5Y4/3 silty sand. Hard and compact. Frequent iron stained root channels. One larger humic stained root channel extends through this unit and to the base of A2. Diffuse contact (becomes finer and darker downwards) to:		

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
?1145	A2	[0.12m thick]	Darker olive brown 2.5Y4/3 sandy clay-silt. Hard and compact. Moderately frequent iron stained speckles. A humic stained root channel extends from A1 to the base of this unit. Occasional charcoal flecks. Diffuse contact (marked by more clay and darker colour downwards) to:		
?1137	A3	[0.06m thick]	Still darker olive brownish grey silty clay. Frequent angular and sub-angular granule and pebble sized flint gravel.		
[1136]			Distinct contact		
1139	B		Soft, friable interdigitating lenses of pale brown 10YR6/3 fine sand and dark yellowish brown 10YR4/4 more clayey silty sand.		
		c.58.0	Base of sample <53>		
			Sample <54> This sample had dried out very badly and had become very hard and cracked. This made accurate description very difficult.		
		c.58.75	Top of sample <54>	54	none
1145	A1	[0.16m thick]	Dark greyish brown 2.5Y4/3 compact and hard sandy clay-silt. Moderate iron concretions along fine root channels. Fine angular blocky structure riddled with fine holes <1mm (root holes?). Occasional granular and grit sized flint gravel. Contact appears to follow crack associated with a humic, soil-like lens.		
?1145 ?1158	A2	[0.24m thick]	Dark greyish brown 2.5Y4/3 compact and hard sandy clay-silt. Slightly less sandy than overlying unit. Frequent and larger iron concretions than in A1. Similar fine angular blocky structure riddled with fine holes <1mm (root holes?). Occasional granular and grit sized flint gravel. Possible crushed snail shells.		
		c.58.25	Base of profile sampled		

4.12 These samples were taken about 1m apart through the fills of one or several of the (re)cuts of the ditch or mill-race feature. Unfortunately sample <54> had dried out very badly and any surviving pollen and diatom assemblages are unlikely to have remained well preserved. This also prevented accurate description of the sediments.

4.13 Both samples <53> and <54> appear to represent the fills of a primary cut, and then fills of a subsequent re-cut

4.14 Initial observations suggest that the earliest fill sampled <53: unit B> was the result of episodic water flow through the feature with periods of faster flow and periods of still, standing or draining water. Diatoms assemblages examined from the finer lenses may provide information about the nature of the water flowing through the cut. Pollen from the same lenses may suggest the nature of the local environment at this time and perhaps the source of the water.

4.15 The later fills are finer grained and indicate more sluggish flow, or silting up. It would appear that plant growth and soil formation eventually occurred within the damp conditions of the ditch.

4.16 Samples for pollen and diatoms from the base and top of sample <53> would provide material with which to examine landscape and environmental change within the catchment of the site from the 11th to 13th centuries. This should be undertaken in conjunction with similar information from the western and eastern stream channels.

Eastern stream channel: samples <38 & 39> two monoliths from section 11 *(Figure 6), dated pre- 13th century to modern*

Table 25: Assessment of Geo-Archaeology: Sample <38 & 39> Section 11

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
		57.65	Top of sequence sampled		
716	A1	[0.04m thick]	Hard and compact, light yellowish brown 2.5Y6/3 sandy silt. Diffuse contact (over 30mm) to:	38	
719	A2	[0.10m thick]	Greyer sandy silt with manganese flecks	38	
720	A3	[0.02m thick]	Flint gravel rich band, forms contact of A2 and A4.	38	
741	A4	[0.06m thick]	Greyish brown 10YR5/3 sandy silt. Frequent angular granule and pebble sized flint clasts.	38	
?721	A5	[c.0.04m thick]	Darker greyish brown sandy silt with frequent flint pebbles.	38	
			(There is probably a gradual increase in humic content down the profile through Zone A)		
		57.43	Sharp slanting contact		

Context	Zone & unit	Elevation of contact (m OD)	Description and contacts	Tin	Assoc. enviro samples
830	B		Interbedded yellowish green sand with blue-grey silty clay. Beds / laminations are slanting, sub-parallel and mostly about 10mm thick. The upper 0.20m iv very iron stained, especially along root channels. Iron concretions occur throughout he unit. The sandy beds contain frequent (green) glauconite clasts, probably derived from the Greensand of the Weald. The unit is penetrated by frequent woody roots (> c.10mm diam.) and a larger stake-like wood fragment.	38 / 39	<28>
		56.89	Base of profile sampled		

4.17 This sequence was divided into three main zones.

Undated lowest deposits (pre-13th century):

4.18 The lowest, zone C (context [830] pre-dates the moat cut [726] and is undated. Context records indicate that it pre-dates all the cut features within the eastern stream valley. It therefore probably accumulated prior to the Saxo-Norman period and may be of prehistoric age.

4.19 It probably represents overbank flood events: interspersed episodes of water washing more rapidly from the river during fast flood flow and then standing or draining more slowly away (when the silty clay was deposited) and may have formed a raised levee adjacent to the river channel.

4.20 It is expected that there will be good preservation of diatoms and pollen within the silty clay overbank bands, due to their waterlain nature. These microfossils are good indicators of water quality and local ecology and hold potential for various avenues of further research on the site (section 7).

4.21 The iron-staining at the top of the fluvial sediments [830] and especially associated with large root channels suggests that the earlier river sediments were vegetated immediately prior to a clearance episode, probably associated with the manor construction. The lack of bedding in this upper part of context [830] is also indicative of bioturbation and implies that the ground surface was not far above.

Faster flowing water, gravelly deposits, dated medieval to post-medieval:

4.22 The gravelly contexts of Zone B (contexts [720], [741] & [721]) may represent a period when shallow faster flowing channels were flowing, eroding the earlier, finer fills.

Upper hillwash deposits, dated post-medieval to modern

4.23 Zone A [contexts [716] & [719] appears to represent flood or hillwash events or the dumping of a brickearth type material into the stream channel (perhaps culminating with recent agricultural activity or the bulldozing of parts of the site in the 1960s).

Sample <42> one monolith through fill of northern moat arm, section 23(Figure 6), dated 13th century

Table 26: Assessment of Geo-Archaeology: sample <42> primary fill of moat

Assoc. with context	Zone & unit	Thickness of unit as sampled (m)	Description and contacts (Elevations and correlation with the site matrix to be done at analysis stage)	Tin	Assoc. enviro samples
1049 +			Top of profile sampled: to obtain from S.23	42	<40+41>
1050	A	0.10	Very dark greyish brown sandy humic clay-silt (loam). Moderately soft, occasional gravel and iron concretions.		
			Clear irregular contact following root channels		
	B1	0.15	Brown 10YR4/3 very sandy clay silt, but becomes less sandy downwards. Occasional iron concretions and staining along root channels. Occasional diffuse, humic stained root channels. Diffuse contact over 0.10m to:		
	B2	0.15	Greyish brown 2.5T5/2 compact, moderately soft silty clay. Strong iron staining within the lowest 20-30mm of unit.		
			Diffuse contact (marked by an increase in sand) to:		
	C	0.10	Dark yellowish brown 10YR3/4 medium to coarse sand. Very iron stained matrix. Friable. Angular flint and ironstone clasts.		
			Base of profile sampled		

4.24 The lowest sediment sampled (zone C) was an iron stained gravelly sand. It was probably deposited through erosion of the sandy natural deposits into the moat. The iron staining is likely to be the result of ground water fluctuations and the precipitation of ferric iron at the contact of the permeable sands of the former river channel and the less permeable overlying clay (unit B2) of the moat.

4.25 The clayey (B2) sediment is likely to represent still and deep water and is probably the main primary moat fill in this location. The increase in sand within the matrix upwards suggests that water flow became swifter and probably shallower through time (B1). Perhaps the eastern stream was partly re-directed through the moat arm during this period and the arm was starting to silt up.

4.26 Zone A represents plant growth and soil formation at the surface of / into the moat sediments. This soil formation and rooting appears to have extended into unit B1, as indicated by the humic and iron-stained root channels in this zone, but not into the lower part of zone B (B2). This shows that the moat arm had ceased to contain flowing, or standing water.

4.27 The shallowness of the moat deposits seen in this tin appears to suggest that the silting up and soil formation was a fairly rapid process. Above this level stratigraphic descriptions indicate a collection of brushwood had been dumped into the moat arm.

Sample <43> two monoliths through section 20 at edge of the first moat on the eastern side of the site (Figure 5), dated 13th century

Table 27: Assessment of geo-archaeology: sample <43> section 20 (at edge of moat)

Context	Zone &	elevation of contact (m	Description and contacts	Tin	Assoc. enviro

	unit	OD)			samples
		58.76	Top of profile sampled		none
1065	A1	[0.14m thick]	Light olive brown 2.5Y5/4 compact sandy silt. Frequent iron staining as concentrations associated with root channels. Occasional charcoal flecks. Diffuse contact to:	1	
1065	A2	[0.06m thick]	Light olive brown 2.5Y5/4 compact slightly sandy silt. Occasional iron staining and becomes greyer (less oxidised) downwards. This unit is marked by distinctly less sand and more clay-silt than A1 & A3.	1	
1065	A3	[0.12m thick]	Light olive brown 2.5Y5/4 moderately compact sandy silt. Frequent iron staining. Occasional charcoal flecks. Occasional flint gravel.	1/2	
		58.44	Diffuse contact (marked by a decrease in sand downwards)		
1066	A4		Greyish brown 2.5Y5/2 slightly sandy silt. Compact and hard. Occasional iron concretions, possibly associated with root channels.	1/2	
		58.16	Diffuse contact (marked by an increase in sand downwards)		
1093	B1	[0.14m thick]	Brownish grey, compact, silty gravelly sand. Occasional iron staining possibly following moderately large root channels. Occasional charcoal. Distinct contact to:	2	
1093	B2	[0.05m to base of profile]	Pale whitish grey medium to coarse sand occasional flint clasts of granule to pebble size. Non compacted.	2	
		57.97	Base of profile sampled		

4.28 These monoliths were taken from the inner side of the first moat cut.

4.29 Context [1093] was sub-divided in the monolith sample description into a lower, 'clean' whitish grey gravelly sand (B2) and an upper, 'dirtier' and darker coloured silty gravelly sand (B1). The upper surface of [1093] appeared to be irregular and undulating on the section drawing. It is possible that the upper part of the gravel (B1) represents the reworking of the former stream bed or channel-edge bar during moat construction. However the iron stained root channels within B1 and its greyer more humic appearance and the concentration of gravel at its surface, point towards former plant growth within it. It is therefore possible that [1093] represents an abandoned bedform or gravelly sand bar associated with the earlier stream. It is quite possible that a considerable expanse of sand and gravel accumulated at the confluence of the eastern and western streams. It would appear that, by the time the moat was constructed, this area had been abandoned by the streams and had become vegetated.

4.30 As a result of moat construction (and stream channel manipulation) the formerly vegetated confluence zone was flooded. Zone A: contexts [1066] and 1065] are sandy clay-silts. They represent fluctuating water flow within the eastern stream. It is likely that the flow was predominantly slow or sluggish, but sandier lenses (such as A3, within [1065]) indicate that occasional more turbulent episodes occurred.

4.31 Pollen and diatom analysis of these sediments should be able to provide information with which the changing medieval landscape can be reconstructed and the role of human activities in accelerating this change.

4.32 Evidence of rooting and oxidation at the top of the profile, especially in context ([1065]: zone A1) indicate that the moat sediments have become weathered, aerated and bioturbated in their upper parts. This probably indicates that pollen and diatom preservation will become worse towards the top of the profile, where differential preservation might be expected, with only the more robust species surviving.

5. Conservation

5.1 If thin sections are made of the monolith blocks they will take up less storage space, stand a better chance of long term preservation and be amenable to a similar method of archiving to that for finds and environmental samples. As monoliths the samples are not easily stored, need to be kept in a cool to cold and dark environment and will be likely to deteriorate with time. In addition thin sections are easily available for further research and can be examined frequently without loss of information. Stored monoliths are less accessible and will gradually loose their potential for preserving information, especially as each time they are examined further cleaning will wear away the surface.

5.2 In the same way, processed sub-samples taken from the monoliths will be easier to store and less likely to deteriorate than the original soil material.

5.3 Long term storage as monolith samples is likely to be costly and is not an efficient use of space or archive material. After analysis, for those monoliths not impregnated with resin and converted to thin sections, what remains of the samples should be discarded. Sample <54> should also be discarded

6. Comparative material

6.1 Valley sediments have been recorded and sampled from several of the CTRL sites. As such they record sequences and chronologies for periods of landscape stability and instability that might be compared with each other and to other evidence for human settlement and activity across the Wealdon landscape. In terms of the present site the main periods of interest focus on Iron Age and Roman activity and medieval expansion and abandonment.

6.2 This data should be compared to published research on the impact of human activities and the resulting accumulation of valley sediments, derived from both slope and river processes (Bell & Walker, 1992; Bell & Boardman 1991; Needham & Macklin 1992).

6.3 It should also be compared to more local evidence for human impact and abandonment on the environment recorded on other sites in south-east England. In particular, the silting up of the Walbrook in London, in the Iron-Age Roman Also to evidence for prehistoric deforestation and agriculture (Bell 1983). Also comparison might be made to geoarchaeological samples taken by MoLAS during excavation of the moated medieval site at Low Hall, Walthamstow and Finsbury Manor, just north of the City of London.

7. Potential for further work

7.1 The monolith samples have potential to address the following landscape zone and fieldwork aims:

- *Establish the presence/absence extent and morphology of any moat or other water course*
- *Determine the landscape setting of the site and interaction with the contemporary local environment*

7.2 As no wells were found on site it is probable that the inhabitants of the moated settlement drew their water from the streams themselves. Diatoms (algae) are sensitive to salinity, nutrient levels and acidity (amongst other things) and are best preserved in silt and clay sediments. It is possible that examination of diatom assemblages from the moat and pre-moat waterlain sediments will provide data with which the changing water quality in the valley can be reconstructed. Changes in the quality of the water supply and the likely effect of occupation on the water passing on downstream might then be investigated.

7.3 The recommendations for further work are outlined below, with respect to the feature they relate to.

Western relict stream channel

7.4 These monoliths have potential to provide information with which the impact of prehistoric and early historic human activity on the surrounding landscape might be reconstructed. Pottery from [183] together with radiocarbon dating of the peat sequence would enable these activities to be placed within a more secure chronological framework for the site and the region.

7.5 Thin sections for soil micromorphology will enable the interpretation of the sediment sequence discussed in section 4 to be tested. This technique should also be able to determine the process by which context [183] & [292] accumulated (fluvial or colluvial) and suggest whether agricultural activity on the slopes may have been responsible (Macphail *et al* 1990, Macphail 1992). Or whether this disturbance was taking place within the stream catchment but not on the site itself.

7.6 Pollen analysis through the fine-grained organic sediments of contexts [247], [242], [227], [183] should enable the nature of the surrounding landscape to be reconstructed. It may suggest the extent to which the woodland had been cleared by this time and indicate the role of human activities subsequent to clearance (ie: whether for arable or grazing).

7.7 Further work on the monoliths from the palaeochannel would therefore have potential to determine the landscape setting of the site and human interaction with the contemporary local environment.

Ditch or water mill race

7.8 Samples for pollen and diatoms from the base and top of sample <53>, especially as these contexts are roughly dateable (almost certainly the latest fills are soon before the construction of the medieval manor in the 13th century), would provide material with which to examine landscape and environmental change within the catchment of the site prior to development. This should be undertaken in conjunction with similar information from the stratigraphically later moat and eastern channel fills.

Medieval moat: northern and eastern arms, eastern stream channel

7.9 The monoliths from the moat have very good potential for the reconstruction of:

- the changing landscape and environment during the medieval period
- the possible role of human activities in this change
- changes in the quality of water supply as a result of human activities during the medieval period and also (together with samples from the palaeochannel and mill race) throughout the prehistoric and historic period of site occupation.

7.10 The data on which to base these reconstructions might be obtained from pollen, diatom and limited sedimentological and soil micromorphological analysis of the samples.

7.11 Initial assessment indicated that the samples were taken through both pre-moat construction fluvial deposits (eastern arm and eastern stream channel) and also through overlying moat fills. It is initially thought that sample <43> pre-dates sample <42> by perhaps half a century and the comparison between the pollen and diatom remains could reveal differing environmental indicators.

7.12 Recommendations for further work:

Western relict stream channel
Radiocarbon Radiocarbon dates from the top and bottom of the peat
Pollen Analysis of 16 pollen sub samples
Soil micromorphology
a) Supporting sedimentary techniques: Carry out x-ray and loop sensor magnetic susceptibility determination on the monolith inserts. Sub-sample the 2 monoliths at 2cm intervals for LOI / particle size / phosphates prior to stage (b) and carry out this analysis as appropriate (in discussion with the soil micromorphologist) Provide data (but not report text) for stage (c).
b) thin section preparation Set what remains of the 2 monoliths in resin Manufacture 4 thin sections to cover the 292/183; 183/227; 227/242/247 and 247/270 interfaces.
c) *Description and interpretation of 4 thin sections* Use supporting data obtained in (a) as required Prepare report text
Geoarchaeological synthesis Integrate the results of the dating, pollen and sedimentary / soil micromorphological techniques in the light of data obtained from the stratigraphic record and other specialist reports, to attempt to reconstruct the sequence of events represented by the palaeochannel sediments; and the likely impact of human activity on landscape change.

Ditch or water mill race
Pollen Analysis of 12 samples from <53> at c.40mm intervals
Diatoms Analysis of 12 samples from <53> at c.40mm intervals
Geoarchaeological synthesis Integrate the results of the pollen, diatoms, monolith assessment and stratigraphic data from the mill-race samples with similar evidence from the relict channel and moat in order to reconstruct changes in the quality of water supply and environmental change, for the period of site occupation.

Medieval moat: northern and eastern arms, eastern channel
Pollen *Subsamples to be taken from the monoliths before they are set in resin!* Analysis of 24 pollen sub samples (at c.40mm intervals): 4 from the 'primary fill' <42> 12 from <43> 4 from the upper part of <38> and 4 from the clayey laminations of the pre-moat deposit <39>
Diatoms *Subsamples to be taken from the monoliths before they are set in resin!* Analysis of 24 diatom sub-samples from (at c.40mm intervals): 4 from the 'primary fill' <42> 12 from <43> 4 from the upper part of <38> and 4 from the clayey laminations of the pre-moat deposit <39>
Soil micromorphology
a) Supporting sedimentary techniques: Carry out x-ray and loop sensor magnetic susceptibility determination on the monolith inserts of samples <42, 43, 38+39> (6 monoliths). Sub-sample monoliths: <38>: top half (8) <39>: selected sand & silt laminae from top / middle / base (6) <42>: lower 0.30m (15) <43>: entire 0.80m profile (40) (Total: 69 sub-samples) at 20mm intervals for LOI / particle size / phosphates prior to stage (b) and carry out this analysis only as appropriate (in discussion with the soil micromorphologist and see (b) below. Provide data (but not report text) for stage (c).
b) thin section preparation Set all monoliths in resin Manufacture the following thin sections (c.40mm x 100mm): <38>: top half (2) <39>: (1) <42>: unit C, lower B, B/C contact (3) <43>: A1/A2 contact, A3/A4 contact, A4/B1 contact, B1/B2 contact (4) Total thin sections manufactured: 10 The samples will be stored as thin sections as this is likely to be the best way of preserving the geoarchaeological record of these deposits.
c)*Description and interpretation of 10 thin sections* Use supporting data obtained in (a) as required Prepare report text
Geoarchaeological synthesis Integrate the results of the dating, pollen and sedimentary / soil micromorphological techniques to attempt to reconstruct the sequence of events and geoarchaeological implications of the moat sediments; and the likely impact of local medieval activity on landscape change.

8. Bibliography

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