Geoarchaeology at Marcham 2004

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Introduction

A great deal of progress has been made in assessing the geoarchaeological potential of the Marcham site. Soil micromorphology samples from 2003 showed that future work on use of space and room function in the various structures under excavation would be of great benefit in better understanding the Roman period buildings on the site (de Vareilles 2004). Additional micromorphology sampling from Trench 18 was undertaken, along with sampling for a suite of soil chemical and physical properties, to further explore this potential. A study of the hydrology and geology of the area revealed new opportunities to relate the site to the River Ock and its landscape (Langford 2004). In particular, future palaeoenvironmental work on a palaeochannel of the Ock, and on newly discovered deposits, including a peat bed, is strongly recommended, especially if dating reveals that these are temporally related to the Roman temple complex. The extensive excavations carried out in 2004 have uncovered further Roman period hydrological engineering works, which clearly link the arena building to a second 'palaeochannel', and suggest that if the latter is a natural feature, it may have been modified in relation to drainage of the arena building. Further work is required to explore the possibility that this channel is actually a ditch or canal of Roman construction. In this report, the results of all geoarchaeological work to date will be summarised, and future directions proposed.

The River Ock palaeochannel and river edge deposits

On the basis of modern maps, it is clear that the River Ock has seen extensive historic canalising, draining and minor diversion in the location of the Roman period site, and ancient meanders have been found through recent auger survey; some of these could be seen to relate to features on historic maps, while others appear to predate the 19th century maps consulted (Langford, 2004, 20-22). Aerial photography has also provided evidence of abandoned meanders, one of which runs through the Trendles field, in a roughly east-west direction, and exploration of this palaeochannel began in 2004.

Trench 21 was located in the centre of the Ock palaeochannel, and aimed to provide information on the landscape and river history through examination of channel deposits and palaeoenvironmental sampling. Although the trench was dug to explore the nature of the channel deposits, the deposits revealed were almost wholly archaeological. Layers of fill of a ditch or large pit/well were partially uncovered, but not enough to understand the feature, nor whether some of the deeper deposits exposed were fills or actually channel deposits. An area of possible stone paving was revealed adjacent to the dug feature, which Langford (2004) interprets as a possible causeway, but again too little was revealed in 2004 to expand upon that possibility. Interpretations on the last day on site ranged from a well with a stone paved area around it, to a sump, to a pathway marking a channel crossing-point. With time running out, and labour needed elsewhere, it was not possible to further clarify this area, and I would recommend re-opening, expanding and going deeper in this trench.

Although it seems clear that the east-west running cropmark is a palaeochannel proper, on the basis of aerial photographs and Mike Langford's auger survey (2004), we still have neither

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determined the date, history nor characteristics of this previous incarnation of the River Ock. One thing that I am particularly interested in is the date of this channel. Was this river channel open water or simply boggy ground during the Roman period? The drain/'palaeochannel' leading from the arena towards the river seems to meet this linear cropmark in aerial photographs, and the relationship of these two waterways has become a more important issue in light of the findings from the arena excavations this year. Further work on this area should aim at 1) hitting channel deposits proper in the Ock palaeochannel, 2) exploring the interaction between the palaeochannel and the drain/channel running from the arena, and 3) further investigating the archaeological features uncovered in 2004.

Mike Langford carried out further work on hydrology and landscape on the site, the results of which have since been presented in his dissertation (Langford 2004). Auger surveys, trench excavations and river bank section cleaning provided a great deal of information on ancient and modern deposits. At the modern Ock's river banks, a shell bed exposure underlying artefactual and bone remains has been dated on the basis of wood and bone inclusions to the Medieval period; although I still have doubts about taking dates on artefacts without a sequence, particularly from a section adjacent to an active stream, both dates have overlapping ranges of less than 300 years each (95% confidence level) (Langford 2004, 19). The underlying shell bed proves to be rather extensive, being found in several other exposures up and down the river; analysis by Claire Sampson suggests that this deposit represents quickly flowing fresh water between steep banks (cited in Langford, 2004, 19). Within this shell bed sequence, worked flint, ceramics and fragments of wood were found, although again it must be remembered that this is from exposed sections at the edge of the river, and contextual integrity has not been demonstrated at this time.

A potential river crossing point was identified by Langford (2004, 27), located above a rock shelf found in trench 20B at the edge of the modern river channel, and possibly linked to an Iron Age routeway running from the south into the area (Hearne 2000).

Other findings from Langford's research in 2004 included an alluvium-buried thin peat bed preserved at the current water level of the Ock, on the other side of the stream from the Roman site. This peat should be analysed by an archaeobotanist and dated, if possible; at present, the easiest interpretation is that the peat marks a phase of later Holocene boggy ground, presumably near or in the old floodplain, which the current river is cutting back into. However, an early date on this peat could substantially alter our understanding of the area; in one exposed riverbank section, gravel deposits were found overlying a thick peat deposit, which Langford suggests could be early Holocene or even earlier in date (Langford, 2004, 20-22). If there are peat beds dating to the earlier Holocene (or earlier), the site will take on significance beyond its own landscape on this basis alone, and these deposits will have to be investigated by a specialist and put into the context of research on the early development of the Thames River valley as a whole. It is very important that all of the peat layers found be dated.

The exposed alluvial deposits show a variety of depositional environments, with some slow-flowing (silt and clay), while others were stronger energy (gravels), suggesting that this particular location in the alluvial landscape has seen several changes in river flow and/or stream bed location, including some phases of high energy flow, which may be related to substantial flooding. While this complex sequence is not unexpected in the area, phasing, and hopefully dating these events or changes in flow pattern is greatly needed, both to get a better understanding of what the river and its surrounds were like during the Roman period, and to develop more complete history of the River Ock, its relationship to other, better studied rivers, such as the Upper Thames, its environment from pre-Holocene through to recent historic times,

and its presence in the landscape and significance for the substantial Roman religious complex located at Marcham.

Hydrology, drains and the Roman arena

The 2004 season saw significant advances in understanding the relationship of the arena to local hydrology and drainage, as well as recovering an interesting sequence of construction deposits, including stone-built drains running underneath the central area. The large round structure is located in a topographic hollow, and related to a bizarrely straight channel cropmark running across the topography, from the arena down towards the River Ock. The cropmark 'disappears' where this linear meets the east-west running palaeochannel discussed above. Interpretations in 2003 suggested that the arena was located on a natural hollow, related to a possible aquifer (but not a spring) where water would seep up into the soil profile (see Lewis 2003). The status of the 'channel' in relation to this was unclear – did this aquifer at some time produce a stream? Was there open water running down to the river in the Roman period?

Some effort was expended by the team at exploring this 'palaeochannel' running down to the Ock. Trench 8 was dug in the middle of the southward-running cropmark. The trench is mentioned to contain channel deposits by Langford (2004), but no description of those deposits is given. This urgently needs to be revisited through the archives before suggestions as to future work are given. It appears that Trench 8a/b, dug in 2003 to catch the edge of this channel, was not actually located within the proposed feature, thus explaining the lack of channel deposits revealed within it.

We have still to determine whether the channel running from the arena towards the river is a natural palaeochannel or a man-made channel. Given the level of drainage engineering revealed this year in the arena itself, the straight nature of the cropmark, and the fact that the feature runs against the topography, I still think that the latter is a strong possibility. At the very least, it seems possible that this channel has been canalised, if not completely constructed, by Roman engineers. The degree to which the builders of the arena both utilised and modified the natural topography and drainage of the area is impressive and it would not be surprising if other features connected with channels were not part of the same planned drainage and use of water seen in the arena itself.

It became clear over the 2004 season that the 'royal box' and arena, whatever other social or symbolic purposes they served, are major works of hydrological engineering. A large covered drain found in the 'royal box' in 2003, and excavated in 2004 (Trench 9), connects up to a large ditch with complicated construction and fills running in the same direction as the channel identified through aerial photography, and presumably functionally related to the latter. In addition, a number of other covered drains were exposed through a major area excavation in the centre of the adjacent round structure. Although I do not know the latest interpretation of the series of deposits exposed in the central area, there was an area of laid orange sand in between deposits containing bricks, pottery and other cultural material, and it was clear that the majority of the deep, wet deposits exposed in a deep sounding dug in 2003 were actually dumps, build-up and/or construction contexts.

Mike Langford suggests that the drains and clay capping layers found over them within the arena and just outside of the 'royal box' are related to management of sub-surface and surface flow during the Roman period (2004, 19). The series of stone-built drains found demonstrates a serious engineering focus on water; whether these drains served to take water away from the hollow, and channel it down to the River Ock, to mover water around within the arena structure, or even to bring water into the arena, is still unclear and needs serious investigation from a

hydrological engineering and architectural perspective. It would make sense to have drains taking water away from this damp location, and the discovery of these drainage features make me re-think the arena as a single-phased, massive and highly sophisticated construction event, instead of the multi-phased development I was thinking of last year (Lewis 2003). Indeed, in my previous report I suggested that much of what underlay the centre of the amphitheatre would probably turn out to be geological in origin. Although in certain locations this has proved to be the case (thick deposits of clean sand underlying the sides of the 'entranceway' in Trench 1 appear to be part of the Corallian Beds sequence), in the centre itself much of what I saw was clearly archaeological, and several contexts of dumped sediments and/or collapsed structural remains were revealed in addition to obviously laid drains and sand layers. As in 2003, I still have no good understanding of how this building 'worked', but have a great appreciation for Roman efforts at hydrological engineering, and hope that the archaeological reports will bring more clarification and detail.

The 'ponding' deposit identified in 2003 near the entranceway to the arena in Trench 1 was not revealed in the 2004 excavations, but micromorphological study of deposits in this area show that black deposits are full of manganese and iron micro-nodules, with relatively little organic matter identified (de Vareilles 2004), which means that besides 'punctuations', there is no significant botanical component. Archaeobotanical study of this deposit also revealed no significant organic component (greater than the sieve size) (Claire Sampson, pers. comm.). This suggests that the deposit is not related to 'ponding' water, but actually to oxidation of the sediments. It was unclear to me in the field in 2004 whether any further information about the entranceway and its functions would be revealed from the new trenching, but there are still great complications in the stratigraphy of that area. It would be interesting to do further work in Trench 1 in regard to the history of this entranceway and how it relates to the structures and use of the central arena.

Soil micromorphology, use-of-space and buried soils

A set of samples were taken in 2003 for soil micromorphological analysis of floor levels in the large Roman period structure in Trench 18, from the arena floor in Trench 1, from sods in the arena bank in Trench 9, and the pre-bank buried soil sequence as exposed in Trench 1 (Table 1). Thin sections from these samples were produced through Marcham project funding by Julie Miller at the McBurney Geoarchaeology Laboratory, University of Cambridge, and analysed by Anne de Vareilles as part of an MPhil dissertation (de Vareilles 2004), under the supervision of Dr. Charles French, and in consultation with myself. Her study is one of very few aimed at understanding Romano-British settlement remains, and particularly floor sequences, through soil micromorphological investigation of use-of-space, although it fits into other research aimed at understanding ancient floor layers, room use, and building construction/destruction sequences (eg. Matthews *et al*. 1996; Ge *et al.* 1993; Boivin 1996 & 2000; Wallace 2000).

De Vareilles found that there is an argument for looking to Roman buildings for the beginnings of 'dark earth' accumulation (Macphail 1981, 1983, 1994, Yule 1990), and that there should be mileage in exploring use-of-space in Romano-British buildings in this regard. Microscopic evidence of splashing water on floors and trampling were implicated in the strong compaction seen of some mortar surfaces in Structure 18, and there was no evidence of animal stabling nor of any pre-mortar floor use of this structure. Differences between the mortar floors examined from different locations in Trench 18 were suggested to possibly relate to different room usage or function. De Vareilles (2004) suggests that a detailed use-of-space study would be a successful approach to better understanding the various rooms in this structure, and that this should included phosphate analysis to look at function and 'cleanliness' of the various rooms.

Table 1 Soil micromorphology samples from 2003[2]

Sample	Trench	Contexts
1.11	Trench 1	*'Ponding' deposit at amphitheatre entrance* [1162] – ponding deposit of compact black clay [1163] – loose to compact grey gritty sand loam with charcoal flecks and plaster fragments
1.12	Trench 1 Section 1.23	*White floor layer of amphitheatre* [1189] – laid floor of amphitheatre, gritty greyish-white mortar ([1160] – compact reddish-brown sandy loam with manganese flecks)[3] [1163] – as above
1.13	Trench 1 Section 1.18	*Lower amphitheatre bank & upper buried A horizon* [1185] – compact yellowish brown sandy clay; bank material [1153] – friable reddish brown sandy loam; buried soil
1.14	Trench 1 Section 1.18	*Lower amphitheatre bank & upper buried A horizon* [1185] – as above [1153] – as above
1.15	Trench 1 Section 1.18	*Lower buried A and upper B horizons* [1153] – as above [1165a] – natural clay above bedrock
1.16	Trench 1 Section 1.18	*Turf layer in bank deposits* [1184] – bank material, compact yellowish brown sandy clay [1183] – compact mid grey, gritty sandy loam; turf layer in bank
9.25	Trench 9 Section 9.25	*Turf layer in bank, upper buried A horizon* [9057] – friable yellow and greyish brown friable sandy loam, with a lens of concentration of iron flecking above [9058]; turf layer at base of bank [9058] – friable yellowish-brown sandy loam with clay patches [9064] – friable greyish-brown sand with charcoal flecks and tile, upper buried A horizon under bank
18.09	Trench 18 Section 18.15	*White mortar floor and soil layers in Roman building* [18013] – mid to dark brown silty loam, compact [18101] – compact white mortar, tightly packed floor [18102] – friable reddish-brown silty clay, possible floor
18.10	Trench 18 Section 18.15	*White mortar floor and soil layers in Roman building* [18013] – as above [18101] – as above
18.11	Trench 18, Section 18.13	*Mortar floor, soil layers with burning in Roman building* [18027] – compact yellowish-grey sandy mortar, limestone inclusions [18050] – dense black layer of burning with yellow mortar inclusions [18051] – compact red loam, possible floor level
18.12	Trench 18, Section 18.13	*Red stony layer, 'soil' in Roman building* [18052] – dark brown loam; reddish stony layer [18053] – described as 'soil' by excavators

In light of de Vareilles' early findings, as discussed in the field and lab before she submitted her dissertation, I decided to take further floor samples from intact mortar and other laid floor levels exposed during the 2004 season for future soil micromorphological analysis (Table 2). Patrick Daly was also very keen to look at use-of-space across the structures in Trench 18, and so we

[2] Section numbers sorted out in collaboration with Anne de Vareilles, Sheila Raven and Paula Levick. Some sections were redrawn by de Vareilles in August 2004 – see de Vareilles (2004). Context descriptions are a mixture of site staff field notes, the author's notes from 2003 (Lewis 2003), and de Vareilles descriptions (2004, 21).

[3] This layer was not originally recorded as being in the sampled profile, but de Vareilles (2004, 21) identifies the upper layer as this deposit.

also took a series of small bulk soil samples for future textural and geochemical analyses (Table 3). The former samples are currently stored at the McBurney Laboratory in Cambridge, while the latter remain at the Institute of Archaeology at Oxford, all awaiting processing. I would recommend that these be analysed as soon as possible, dependant on funding, and that the bulk samples see at least five types of analyses: texture, total phosphates, pH, magnetic susceptibility and loss-on-ignition. All of these relate to each other and to amount and types of organic matter, and in some cases to past burning activities. If enough funds were available, it would also be interesting to do elemental analyses regarding activity areas, and possibly to better identify any industrial activities happening within the structures.

Table 2 Soil micromorphology samples taken from Trench 18 floor contexts in 2004[4]

Sample No.	Contexts
18.17	[18178] – hard white silty clay; 4th (upper) in sequence of constructed floors [18027] – compact yellowish-grey sandy mortar, limestone inclusions (same mortar floor as in 18.11)
18.18	None given: clay over mortar over earthen floor(s) (same mortar floor as in 18.11 – [18027], see above)
18.19	[18079] – (description forthcoming) [18084] – mortar floor 'outside' of South building [18109] - (description forthcoming)
18.20	[18092] – 'fill' of 'courtyard' between buildings, grey brown soil [18130] – brown soil with patches of yellow sand; floor or pavement 'footing' [18137] – pre-Roman construction soil layer, over bedrock = 18166
18.21	[18080] – (description forthcoming) [18143] – compact silt & gravel, layer of finds overtop; 'outdoor' surface? [18166] – pre-Roman construction soil layer, over bedrock
18.55	[18179] – yellow-white mortar; 3rd in sequence of constructed floor layers No number – ash lens [18181] – orange sand & yellow mortar (possibly in sample), 2nd floor layer [18220] – yellow mortar; 1st in a series of constructed floors [18228] – mid brown loam layer, overlain by burnt patches of charcoal

From the arena floor samples, de Vareilles (2004, 45-46) suggests that the floor was laid over water-logged sediments, and continued to be affected by fluctuations in the water table, suggesting that the area was not fully drained before the floor was laid down. The bank samples showed local turf was used in construction, and that some of the soil may have seen temporary reduced conditions. Finally, the buried soil samples fit with the field interpretation of a brown calcareous soil which may have seen agricultural land use (Lewis 2003). A pre-burial surface turf horizon (*ibid.*) was confirmed through lensed concentrations of fine manganese and iron nodules, which are typical of turf rooting layers. While these soils and deposits were not sampled for bulk physical and chemical analyses, they should be sampled in 2005 as a background for studies of Structure 18, and to learn more about their histories. De Vareilles (2004, 46) suggests comparing the buried soil to any soils found under alluvium near the River Ock, and this would fit within the auspices of any continuation of Mike Langford's work on the river's history.

Table 3 Soil bulk samples taken from Structure 18[5]

Sample	Context	Comments	Sample	Context	Comments
18.23	18000	Sector 13	18.37	18023	Sector 11, plan 1887

[4] Some descriptions are from Patrick Daly, 2004, pers. comm. See appendix for full descriptions.
[5] Information provided by Patrick Daly, 2004, pers. comm.

18.24	18027	Sector 13	18.38	18165	Sector 8, section 18.28
18.25	18057	Sector 13, plan 1869	18.39	18131	Sector 8, section 18.28
18.26	18050	Sector 13, plan 1869	18.40	18165	Sector 8, section 18.28
18.27	18202	Sector 13, plan 1869	18.41	18137	Sector 8, section 18.28
18.28	18191	Sector 16, plan 1873	18.42	18130	Sector 8, section 18.28
18.29	18156	Sector 18, plan 1867	18.43	18060	Sector 10, plan 1843
18.30	18197	Sector 14, plan 1885	18.44	18031	Sector 10, plan 1843
18.31	18168	Sector 14, plan 1885	18.45	18116	Sector 10, plan 1843
18.32	18050	Sector 14, plan 1885	18.46	18091	Sector 6, section 18.17
18.33	18213	Sector 14, plan 1885	18.47	18103	Sector 6, section 18.15
18.34	18050	Sector 14, plan 1885	18.48	18102	Sector 6, section 18.15
18.35	18050	Sector 14, plan 1885	18.49	18046, 18101	Sector 6, section 18.15
18.36	18224	Sector 11, plan 1887			

Finally here, Ann-Maria Hart from the University of Cambridge visited the site over two days to take soil micromorphology samples, bulk samples for chemical and moisture content analyses, and field moisture readings of iron panning lenses in various contexts for comparison to other sites as part of her PhD research. She focused on the ditch/channel forming part of the drain sequence in Trench 9 (the 'royal box'), and on Trench 21 deposits (Table 4). Hart's PhD explores the impact of oxidation and iron oxide formation on the preservation of organic remains in Northern European archaeological contexts. The data from Marcham will be used as comparative archaeological information on types of organic preservation and how iron oxide relates to preservation. Her thin section data should also provide further information on the deposition, cultural inclusions and post-depositional processes involved in the drain running from the arena towards the river.

Table 4 Micromorphology and bulk samples taken by A. M. Hart from Trench 9[6]

Sample	Type	Context
9.29	Micromorphology	[9245]/[9254] - part of a sod & orange-brown sandy fill
9.30	Bulk	As above
9.31	Micromorphology	[9245] - base of exposed ditch, a slightly more organic area in [9245]
9.32	Bulk	As above
9.33	Micromorphology	[9255]/[9256] – Fe/Mn pan, either part of a sod, or a boundary separating different channel construction/fill phases
9.34	Bulk	As above
21.1	Bulk	[21004]
21.2	Bulk	[21011]
21.3	Bulk	[21015]
21.4	Bulk	[21016]
21.5	Micromorphology	[21004]
21.6	Micromorphology	[21011]
21.7	Micromorphology	[21015]/[21016]

Conclusions and recommendations for future work

The first two seasons of preliminary geoarchaeological investigations at the Marcham Roman complex have shown the great potential of a variety of different approaches in providing a better understanding of site-based issues, such as use-of-space, engineering, and the importance of

[6]Hart (2004).

natural features in the landscape to Roman site development. There are still, however, many unanswered questions, and many potentially fruitful lines of research to follow up.

It is increasingly clear that the River Ock, its floodplain palaeochannels, topography and drainage were very important in the siting and organisation of the Roman site at Frilford, and that massive hydrological engineering works form an integral part of the construction and presumably use of the large arena building. Exactly how the engineering features were designed and functioned is an issue for future excavation. The Romans and Romano-British are known to have been very interested in water, both for religious and civic purposes, and the issue of why such an incredible structure was built over the aquifer and hollow at Frilford is perhaps not so mysterious in this light. It ties in with the religious nature of the temple buildings found in previous excavations, and presumably with the numerous beautiful small finds found through the recent excavations, which led to the question of whether the arena was a nymphaeum of some sort. The temple complex obviously was at least in part focused on the presence and control of water, as witnessed by its location as well as the substantial and, in places, elaborate, drainage structures built. There is obvious potential for the aquifer hollow and the nearby river Ock to also have been an important place in pre-Roman times, and the find of Iron Age material on the southern part of the site shows at least use of the location before the Romans arrived. Further investigation of the nature of the decidedly straight 'palaeochannel' running from the arena towards the Ock, and now known to have a major, built drain feeding it from the arena, is greatly needed. To my mind, there is potential that this 'palaeochannel' is actually a canal or man-made channel, or at least substantially canalised, and directly related to cultural activities associated with the arena.

The finding of features within the east-west running palaeochannel also merits further investigation. Although this channel is more 'normal' for an ancient river channel or meander of the modern Ock (*vs*. the arena 'palaeochannel'), both in shape, direction, and location in the landscape, at least parts of it have also seen use in Roman times. It would be very interesting to know whether this ancient channel was already silted up or was an open streambed during the Roman period. For one thing, while the straight, southward running channel from the arena definitely runs down to this palaeochannel in aerial photographs, it is not clear that it goes all the way to the present-day Ock streambed, lying further to the south. Could the Trench 21 palaeochannel be the Roman river course? Should we be looking for river crossings along this crop mark, rather than at the modern river bank? Dating the exposed deposits along the modern river and from the palaeochannels, and constructing a detailed history of all of the deposits found through excavation and augering needs further work. I would also recommend greater attention being paid to the junction of the arena channel and the Ock palaeochannel.

Geoarchaeological studies of use-of-space within Roman structures at the site have only just begun, but de Vareilles' (2004) investigation of a few thin sections from Structure 18 and arena deposits and buried soils suggests that there is great potential for further use of soil micromorphology to look at how buildings were built, used, abandoned, destroyed and preserved over time. The samples taken in 2004 should be produced and analysed in comparison to de Vareilles' work. In 2004 it was decided to expand the study of rooms in Structure 18 through chemical and physical analyses of bulk samples from many types of deposits across the space of the structure. These samples should be analysed by a suite of methods, including loss-on-ignition, textural, magnetic susceptibility, pH and total phosphate analyses. If possible, it would be very interesting to also carry out elemental analyses of the samples; the combination of these approaches has proven useful in looking at activity areas as well as localised industrial production on many sites from later periods (eg. Milek 2003; Simpson *et al*. 1998). Using Structure 18 as a guinea pig, I hope to produce results leading to a better understanding of that structure, and also providing a baseline for future comparison to the other structures on the

site, many of which have produced only a rudimentary understanding of function and history through excavation (eg. Structure 2).

Finally here, although Ann-Maria Hart's work on site materials is aimed at providing comparative data for other studies, it is hoped that she will be able to tell us something additional about site preservation, as this is another line of enquiry which has great potential. The site has both oxidising and reducing micro-environments, with fluctuating hydrological regimes, and burial under a number of types of deposits (banks, construction layers, colluvium and alluvium), providing opportunities for a number of different types of environmental analyses based on preservation of a variety of materials. An estimate of the degree to which Roman construction and engineering practices have influenced and changed the preservation environment within structures and across the local landscape would help greatly in both predicting where to carry out further environmental work, and in producing a preservation strategy for the site as a whole.

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Appendix – Contexts sampled for soil micromorphology in 2004[7]

Sample 18.17 (Sector 2)

[18178] *Plan:* *Sections:*
Type: Layer *Matrix*:
Relationships: overlies [18027]
Description: Hard white silty clay
Interpretation: 4th (upper) in sequence of constructed floors

[18027] *Plan*: *Sections:*
Type: Layer *Matrix*:
Relationships: underlies [18178]
Description: Compact yellowish-grey sandy mortar with limestone inclusions
Interpretation: Mortar floor, same as sampled in 18.11

Sample 18.18 (Sector 2)

[18178] *Plan*: 1863 *Section*s: 18.32, 18.33
Type: Layer *Matix*: before [18000], after [18181]
Relationships: Overlain by [18000]; cut by [18229]; overlies [18181], [18182]; abuts [18123]
Description: Compact hard dense greyish white silty clay with limestone gravel inclusions, *c.* 3cm thick, but truncated by ploughing.
Interpretation: 4th (upper) floor surface located in eastern part of the south building. The layer was applied over prior floor surfaces possibly as a means of repairing older worn surfaces ([18181] and [18182])

Sample 18.19 (Sector 6)

[18079] *Plans* *Section*: 18.16
Type: Layer *Matrix:*
Relationships: Overlies [18084]
Description: (Forthcoming)
Interpretation:

[18084] *Plans* *Section*: 18.16
Type: Layer *Matrix:*
Relationships: Overlies [18109]; underlies [18079]
Description: (Forthcoming)
Interpretation: mortar floor, apparently 'outside' of south building.

[18109] *Plans* *Section*: 18.16
Type: Layer *Matrix:*
Relationships: Underlies [18084]

[7] After Patrick Daly, 2004, pers. comm..

Description: (Forthcoming)
Interpretation:

Sample 18.20 (Sector 8)

[18137] *Plans*: *Sections*: 18.30, 18.31
Type: Layer *Matrix*:
Relationships: Overlies [18130]; same as [18166]
Description: (Forthcoming)
Interpretation:

[18130] *Plans*: 1846, 1845 *Sections*: 18.29, 18.30, 18.31
Type: Layer *Matrix*: Before [18097], after [18137]
Relationships: Overlain by [18097]; same as [18092], [18096]; overlies [18166]
Description: compact brown soil with patches of friable yellow sand and hand rust patches (traces of very badly preserved nails?), 5-10cm thick, extending over the southern half of sector 8, and with frequent finds, but no rocks. The layer seems to come down on a grey or green clay layer below
Interpretation: Laid sand floor or footing for pavement. It is unclear whether [18130] is older/younger or the same age as [18132]

[18092] *Plans*: 1830; 1836; 1842 *Sections*: 18.30; 18.31
Type: Layer *Matrix*: Before [18016], after [18130]
Relationships: Overlain by [18003], [18016], [18014], [18081], [18094]; cut by [18093]; same as [18130], [18096]; overlies [18130]
Description: medium brown/grey soil, fairly soft and easy to excavate. Context produced several small finds and a great deal of pottery and bone
Interpretation: seems to be a continuation of the sub-plough surface represented by [18003]. Fill of 'courtyard' between buildings, possibly related to [1896], [18070], [18127], [18132]; all of these contexts represent a range of different materials being deposited in a courtyard

Sample 18.21 (Sector 8)

[18166] *Plans*: 1848, 1854 *Section*s: 18.28; 18.29; 18.30; 18.31
Type: Layer *Matrix:* Before [18143] and after [18165]
Relationships: Overlain by [18143], [18136]; same as [18186], [18146]; overlies [18165]
Description: Dark brown soil, no inclusions, soft to trowel, 5-10cm thick
Interpretation: pre-Roman construction soil level. Described by J. Ayres (local geologist) as soil horizon above bedrock formed from a riverine deposit.

[18143] *Plan*: 1854 *Sections*: 18.28; 18.29
Type: Layer *Matrix*: before [18135] and after [18166]
Relationships: Overlain by 18135
Description: compact layer of silt and gravel (30–50%), 2–5cm thick, with a layer of artefacts immediately below it, mainly horizontally oriented.
Interpretation: The fragmentary nature of the ceramics suggests that the area was regularly cleaned. The gravel could be an attempt to re-new the surface of courtyard. The generally fairly fine quality of the pottery suggests a well-off area.

[18080] *Plans* *Section*: 18.16
Type: Layer *Matrix:*
Relationships:
Description: (Forthcoming)
Interpretation:

Sample 18.55

[18228] *Plan*: 1891 *Section:*

Type: Layer *Matrix*: Before [18220], after [18251]
Relationships: Overlain by [18179], [18220]; cut by [18229]; same as [18182]; overlies [18251], [18250]; abuts [18223], [18123]. In plan it was partially separated by [18250] – but following further excavation it seems most likely that [18228] and [18182] are both part of the same deposit
Description: Mid-brown lightly compacted loam covering *c*. 50% of the north-eastern half of the east room [south building]. Surface is overlain by burnt patches of charcoal.
Interpretation: Forms a 2nd pre-floor soil layer, associated with the 1st phase of activity in the east room of the south building

[18220] *Plans*: 1880, 1884 *Sections*: 18.28; 18.29
Type: Layer *Matrix*: Before [18181], after [18228]
Relationships: overlain by [18181]; cut by [18229]; abuts [18223]
Description: Yellow mortar, small (*c.* 1cm) limestone pebbles and gravel in central area of eastern room, covering *c*. 1/5 of floor surface
Interpretation: 1st constructed floor surface in eastern room of the south building. This is the second phase of activity within this room, and is the initiation of a series of constructed floors

[18181] *Plans*: 1863, 1884 *Section*:
Type: Layer *Matrix*: Before [18179], after [18220]
Relationships: Overlain by [18179], [18178]; cut by [18229]; abuts [18123], [18223]
Description: Mixed gravel, yellow/orange mortar and soil, on eastern side of south building, covers about one third of the area of the room
Interpretation: 2nd floor surface in the south building sequence. No one floor is complete, and they appear to be the result of a series of renovations, rather than a discrete floor surface

[18179] *Plans*: 1863, 1880, 1884 *Section*:
Type: Layer *Matrix*: Before [18178], after [18181]
Relationships: overlain by [18000], [18178]; same as [18113]; overlies [18222], [18181], [18220], [18223]
Description: Yellowish white, loose mortar layer with limestone pebbles and small stones, and some brown loam patches. The floor has been truncated and does not spread all over the rooms; it is found on the northern side of the south building
Interpretation: A floor layer used to level the irregular lower surface, *i.e.* to repair surface [18181]. 3rd constructed floor in sequence of constructed floors in eastern part of south building