

**ARCHAEOLOGICAL EXCAVATIONS AT  
FORMER THURLOW NUNN STANDEN SITE  
LISLE LANE  
ELY  
CAMBRIDGESHIRE**

**NGR: TL 554522 280295**

**POST-EXCAVATION ASSESSMENT AND  
UPDATED PROJECT DESIGN REPORT**

**Planning Reference: 11/01129/FUM**

**ASE Project No: E2569**

**Event No: ECB3761**



**September 2013**

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**ASE Report No: 2013208  
OASIS ID: 158470**

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**September 2013**

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## **Abstract**

*This report presents the results of the archaeological excavations carried out at the former Thurlow Nunn Standen in Lisle Lane, Ely, during June to July 2012. The fieldwork was commissioned by The Harris Partnership on behalf of Aldi PLC in advance of the redevelopment of the site.*

*This work was preceded by a trial trenching evaluation of the wider development area in 2008. This located the below-ground remains of a moat or substantial enclosure ditch of possible medieval or early post-medieval date at what was once the edge of the historic town. The current excavation further investigated this feature and its immediate surrounds toward the Lisle Lane frontage of the site.*

*The excavations have revealed significant evidence of medieval and later land use within the eastern part of the historic urban core of Ely. The moat/ditch feature has been established to in fact be a pair of linked ponds of likely later medieval origin, backfilled in the late 15th to mid-16th centuries and finally levelled by the 18th century. Although no other features of similar date were found to provide insights into surrounding land use, the ponds' fill sequences contained both contemporary domestic rubbish and substantial quantities of brick, tile and stone debris evidently deriving from the demolition/clearance of one or more medieval buildings. The pond fills also contained significant plant macrofossil remains from which the environment within the ponds and their immediate surrounds can be inferred. Cartographic study indicates that the site was undeveloped until modern times, by the 19th century being orchards. It is probable that the cluster of pits and possible structural features cut into remnant soil layers recorded over part of the excavation area relate to his period of use and prior to its 20th century development as agricultural machinery show rooms and yards.*

*The report is written and structured so as to conform to the standards required of post-excavation analysis work as set out in Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (English Heritage 2008). Interim analysis of the stratigraphic, finds and environmental material has indicated a provisional chronology, and assessed the potential of the site archive to address the original research agenda, as well as assessing the significance of those findings. This has highlighted what further analysis work is required in order to enable suitable dissemination of the findings in a final publication. It is proposed that this should take the form of an article in the county archaeological journal.*

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## **1.0 INTRODUCTION**

### **1.1 Site Location**

- 1.1.1 Ely is situated on an 'island' of high ground, formerly surrounded by fen, some 23km north of Cambridge.
- 1.1.2 The former Thurlow Nunn Standen (TNS) site consists of a c0.8ha irregular-shaped parcel of land along the north-western side of Lisle Lane (Figure 1), toward the eastern edge of the historic core of Ely, Cambridgeshire (TL 554522 280295). Bounded to the north by The Vineyards, the River Great Ouse lies to its east and Ely cathedral and the site of the former cathedral priory are situated c.500m to its west.

### **1.2 Topography and Geology**

- 1.2.1 The site occupies a southeast facing slope, of approximately 1 in 25, down to the River Great Ouse.
- 1.2.2 Prior to the excavation, the site was used as an agricultural sales and service yard until 2008. The yard was terraced into the slope when it was constructed in the early 1970s, resulting in its northwestern part being truncated by c.2 to 3m.
- 1.2.3 The c.500sq m excavation site was situated in the south-western corner of the TNS site and was covered by topsoil beneath hardcore and concrete.
- 1.2.4 The height of the watertable within the site appears to fluctuate as it lay at c.6m OD when the evaluation took place in May 2008 and at c.6.6m OD (*i.e.* immediately below the stripped surface) during open area excavation in June 2012.
- 1.2.5 The northern half of the TNS site is crossed by a geological boundary (DTS Raeburn 2007) running northwest to southeast between bedrock deposits of sandstone (Woburn Sands Formation) to the north and bedrock deposits of mudstone (Kimmeridge Clay Formation) to the south ([www.bgs.ac.uk](http://www.bgs.ac.uk)). Waterlain (*i.e.* fenland) deposits cover the un-truncated part of the site and comprise bands of brownish yellow soft-sticky-plastic sandy silt clay, separated by infrequent layers of dark grey / black soft-sticky sandy clay silt, and pale greenish grey soft-sticky silt clay. The layers contain infrequent sea shells and gravel stones.
- 1.2.6 The overlying topsoil (where present) contains modern artefacts and is c.0.4m thick.

### **1.3 Scope of the Project**

- 1.3.1 A site evaluation undertaken in 2008 established the site's potential for the presence/survival of significant below-ground archaeological remains.
- 1.3.2 Consequently, following the submission of a planning application (11/01129/FUM) in 2011 to East Cambridgeshire District Council for the construction of a foodstore and associated infrastructure including parking, landscaping, services and drainage, the CCC HET recommended that an archaeological condition be placed on any grant of planning consent.

- 1.3.2 This advice was based upon guidance given in PPS5: Planning for the Historic Environment, now replaced by the National Planning Policy Framework (NPPF) and the condition stated that:

*No development shall begin until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the local planning authority. The written scheme will include the following components, completion of which will trigger the phased discharge of the condition:*

- i) Approval of a written scheme of investigation;*
- ii) Fieldwork in accordance with the agreed written scheme of investigation;*
- iii) Completion of a post-excavation assessment report and approval of an approved updated project design to be submitted within six months of completion of fieldwork, unless otherwise agreed in advance with the local planning authority.*
- iv) Completion of analysis, preparation of site archive ready for deposition at a store approved by the planning authority, production of an archive report, and submission of a publication report to be completed within two years of the completion of fieldwork, unless otherwise agreed in advance with the local planning authority.*

- 1.3.2 This archaeological condition was duly placed by ECDC on the planning consent for the development. In accordance with this, the former Essex County Council Field Archaeology Unit (ECC FAU) was commissioned by the Harris Partnership, on behalf of Aldi, to undertake a programme of archaeological excavation and monitoring.

- 1.3.4 The excavation was carried out during the period 25 June to 15 August 2012.

- 1.3.5 Since then, ECC FAU has ceased to exist - becoming part of Archaeology South-East (ASE), the contracting division of the Centre for Applied Archaeology (CAA), Institute of Archaeology (IoA), University College London (UCL), in May 2013. The post-excavation work has been completed by ASE.

#### **1.4 Archaeological methodology**

- 1.4.1 The excavation area was removed of its overlying modern topsoil, concrete and hardcore by using a small dump truck and a mechanical excavator equipped with a concrete breaker (where appropriate) and a 1.6m wide, toothless ditching bucket. The removal of the overburden was carried out under archaeological supervision.

- 1.4.2 Archaeological monitoring was also undertaken on the excavation of two pits for attenuation tanks for drainage, the provision of a small extension to the excavation site's north-western corner, and the removal of the rest of the overburden from the un-truncated south-western two thirds of the TNS site. The stripping of the south-western two thirds of the site was not under archaeological control. This groundwork was not conducive to inspection and so no archaeological remains were observed and recorded.

- 1.4.3 Machine excavation was carried out to the surface of natural geology whereupon archaeological features were exposed. Care was taken not to

machine off seemingly homogenous layers that might have been the upper parts of archaeological features. The resultant surfaces were cleaned as necessary and a pre-excavation plan prepared using Global Positioning System (GPS) planning technology in combination with Total Station surveying. Site planning was regularly updated as necessary and augmented with hand drawings.

- 1.4.4 Following the cleaning and planning of the excavation area the sampling of archaeological remains was undertaken as per the written scheme of investigation. Where appropriate, the CCC HE officer was consulted regarding excavation strategy.
- 1.4.5 All excavated deposits and features were recorded according to current professional standards using standard ECC FAU context record sheets.
- 1.4.6 Plans and section drawings were created by hand, at appropriate scales, and located in relation to the national grid.
- 1.4.7 A full digital photographic record of all features was maintained.
- 1.4.8 All finds recovered from excavated deposits were collected and retained for processing, analysis and reporting.
- 1.4.9 The excavation area and spoil were metal detected for artefact recovery.
- 1.4.10 Samples were collected from suitable excavated contexts, including dated/datable buried soils, well-sealed slowly silted features, and sealed features containing evident carbonised remains, peats, water-logged or cess deposits.
- 1.4.11 The archaeological work was carried out in accordance with the Institute for Archaeologists' standards, Code of Conduct and by-laws (IfA 2008 and 2010) and the *ALGEO Standards for Field Archaeology in the East of England* (Gurney 2003). Both the ECC FAU and Archaeology South-East was/is a registered archaeological organisation with the Institute for Archaeologists.

## **1.5 Organisation of the Report**

- 1.5.1 This post-excavation assessment (PXA) and updated project design (UPD) has been prepared in accordance with the guidelines laid out in Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (English Heritage 2008).
- 1.5.2 The report seeks to place the results from excavation within the TNS site within the local archaeological and historical setting; to quantify and summarise the results; specify their significance and potential, including any capacity to address the original research aims, listing any new research criteria; and to lay out what further analysis work is required to enable their final dissemination, and what form the latter should take.
- 1.5.3 Following on from previous archaeological evaluation conducted by ECC FAU (Germany 2008), work was undertaken as an open area excavation, with some monitoring of specific construction groundworks. All context, finds and environmental archives were recorded under a single site code / event number: ECB3761.



- 1.5.4 Supporting appendices and figure illustrations are presented at the rear of the report.

## **2.0 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND**

### **2.1 Prehistoric and Roman**

- 2.1.1 Due to its island location the area has been a focus for settlement since the Prehistoric and Roman periods, and finds of this date are recorded from Brays Lane, some 100m to the northwest, while further Roman remains are known from the fringes of the city, at West Fen Road and Prickwillow Road.

### **2.2 Saxon**

- 2.2.1 Ely was an island surrounded by fen up until post-medieval times and has been an important focus for settlement since at least the Middle Saxon period, following the foundation of its first monastery by Etheldreda in c.673.
- 2.2.2 Saxon remains have been found within the neighbourhood of its cathedral, within the area between Broad Street and the river, and within the western part of the town along West Fen Road (Cessford *et al* 2006; Mortimer *et al* 2005). Most of the Saxon remains are of Middle and Late Saxon date, although no such remains have previously been discovered within Lisle Lane and Forehill. The nearest known Saxon remains to the TNS site lie south of Forehill and comprise Middle / Late Saxon ditches at Jewsons on Broad Street and Late Saxon ditches at The Paddocks (Cessford *et al* 2006, 5-6).

### **2.3 Medieval and later**

- 2.3.1 Numerous archaeological evaluations and excavations across Ely have uncovered evidence for medieval and early post-medieval urban settlement.
- 2.3.2 Archaeological excavations carried out between the river and Broad Street discovered building remains and over 2m of vertical stratigraphy dating from the 12th century onwards (Cessford *et al* 2006). The development along Broad Street began during the late 12th century and was always less intensive than in other parts of the town.
- 2.3.3 Trial trenching of a section of the Forehill street frontage and the site of a former brewery immediately south of the TNS site in 1993 (Wait 1993) revealed a 1.2m accumulation of vertical stratigraphy and occupation remains along the Forehill street frontage, but very few remains within the area of the former brewery, probably because much of it had been severely truncated. Trench D, the single exception to this, exposed early post-medieval remains, comprising a wall, several surfaces and three ditches. The trial trenching found no archaeological remains in the areas closest to the TNS site, although a subsequent and more detailed examination of the Forehill street frontage site uncovered a well-preserved continuous sequence of roadside occupation dating from the 12th century onwards (Alexander 2003).
- 2.3.4 An archaeological excavation carried out in advance of the construction of the Post Office sorting office, directly opposite the TNS site, uncovered property boundaries, a trackway, intercutting pits and a possible 13th to mid-14th-century timber building (Oakey and Connor 1999). It found no layered

stratigraphy or post-medieval remains, and the site appeared to have been unoccupied during the mid-14th to the mid-18th/19th century.

- 2.3.5 The TNS site was the subject of an archaeological desk-based assessment, undertaken by Northamptonshire Archaeology (Foard-Colby 2007), which concluded that, although the site contained no known archaeological remains, it still had the potential to be archaeologically productive.
- 2.3.6 The cartographic record for Ely suggests the TNS site was open ground and devoid of buildings and occupation from at least 1610 onwards (DTS Raeburn 2007; Foard-Colby 2007). Later maps show the TNS site divided up for horticulture during the majority of the 19th and 20th centuries. Documentary records suggest that the area immediately north-west of the site was used as a vineyard by the abbey during the medieval period (Foard-Colby 2007). The first edition Ordnance Survey map labels the site as The Vineyards and records it as having been covered by orchards, minor structures and glasshouses.
- 2.3.6 The results of the evaluation by trial trenching which preceded the archaeological excavation suggested the presence of over 1.4m of waterlain deposits in trenches I and J in the TNS site's south-western corner, cut at or just below the surface by a 14th to 16th-century gully and two very large 15th/16th-century ditches (ECC FAU 2008). The gully ran perpendicular to Lisle Lane and was concluded to have been part of a property boundary, while the two ditches were suggested to have been part of a moat or a large-ditched enclosure. Environmental remains indicated the ditches to have held stagnant water and to have been situated within scrub and poorly-maintained weedy grassland. The trenching produced a wide variety of finds, although the overall quantity was not large. The rest of the TNS site contained a small number of post-medieval and modern features, probably relating to its 19th and 20th-century use for horticulture.

### **3.0 ORIGINAL RESEARCH AIMS**

- 3.1 The main aim of the excavation was to further investigate and preserve by record the gully and supposed moat or large-ditched enclosure which had been partly revealed within Trenches I and J during the preceding evaluation.
- 3.2 The original key objectives formulated for the investigation were to:
- investigate the form, use and validity of the possible moated enclosure
  - investigate the developmental and environmental history of the site
  - place the site within the wider context of Ely and its urban development

### **4.0 ARCHAEOLOGICAL RESULTS**

#### **4.1 Summary**

- 4.1.1 The excavation and the archaeological monitoring revealed two ponds, a single gully, seventeen modern pits and post-holes (comprising forty-six fills) and sixteen layers (Figures 2, 4 and 5). Further context detail is presented in Appendix 1. The edges of the layers were mostly amorphous in plan, but clearly defined in section. Other modern features comprised a concrete-

capped drain pipe and three concrete pad building supports. The gully and ponds were partially investigated by trenches I and J during the trial trenching evaluation in 2008 (ECC FAU 2008), though the latter had been postulated as a moat or large-ditched enclosure.

- 4.1.2 The excavation of both ponds proved difficult due to the high water table and very soft, wet, muddy conditions, leading to some likely cross-contamination of finds between adjacent contexts. The soil samples were extracted from section faces and are uncontaminated.
- 4.1.3 No remains earlier than medieval date were present within those parts of the site investigated, other than underlying layers identified as naturally deposited; probably waterlain.
- 4.1.4 The earliest recorded remains appear to be the two pond cuts, their primary fills and possibly a couple of remnant soil layers in close proximity. These seem likely to be of late medieval date. The ponds were linked by a gully; presumably to allow overflow between them. Here is no evidence for the nature of land-use surrounding them.
- 4.1.5 Although there is an absence of intercutting relationships with dated features to provide a *terminus post quem* for the creation of the ponds, accumulation within Pond B could begin as early as the mid-15th century. Cultural debris appears to begin to be deposited in Pond A in the late 15th to mid-16th centuries. Both ponds pass out of use and are used for the dumping of domestic rubbish that also includes significant quantities of ceramic and stone building debris of medieval date.
- 4.1.6 The redundant ponds were finally in-filled and levelled with further domestic rubbish and building rubble in the early/mid-18th century for Pond A, but slightly earlier in the mid-16th to 17th centuries, for Pond B.
- 4.1.7 A cluster of pits, some potentially structural, attest to 19th century activity though the nature of his late land-use is undetermined. A remnant post-medieval topsoil survived in the northernmost part of the site. The site was developed in the 20th century, from which a concrete-capped drain and a number of concrete foundation pads derive.
- 4.1.8 The contents of the primary site archive is quantified in table 1, below.

Type	Description	Quantity
Context sheets	Individual context sheets	90
Section sheets	A1 Multi-context permatrace sheets 1:10	4
Plans	Multi-context DWG plans	1
	A1 permatrace sheets 1:20 or 1: 50	4
Photos	Digital images	82
Enviro sample sheets	Individual sample sheets	15
Context register	Context register sheets	3
Enviro sample register	Environmental sample register sheets	1
Photographic register	Photograph register sheets	2
Drawing register	Section register sheets	4
	Plan register sheets	1
Small finds register	Small finds register sheets	1

Table 1: Site archive quantification table

## 4.2 Pond A

- 4.2.1 Pond A extended into the north-western part of the site and was a large, sub-rectangular feature measuring 1.6m deep, 7.12m wide and more than 12.5m long. It had clearly defined edges and was investigated within three excavated segments, recorded separately as cuts [52], [69] and [73].
- 4.2.2 Segment [52] was positioned toward the northwest end of the exposed extents of Pond A, and across its width (Figure 6). As hand-excavated within this segment, the pond cut had a moderately sloping north-east side, a broad flat base, and a deposit sequence of eight fills (Figure 3, section 1; Figure 7). The first three fills in the sequence were waterlain and consisted of pale greyish brown soft clay silt [60], a thin horizontal deposit of black silt and compressed plant remains [59], and a slightly undulating deposit of grey soft sand silt [58]. These were covered in turn by two deposits of orange brown plastic silt clay [53 and 54], a dark greyish brown / black soft clay silt [50], a brownish yellow plastic sand silt clay [48] and a dark reddish brown friable sand silt clay [47]. Fills [53] and [54] were deposited down each side sides of the pond cut and were broadly similar in colour and composition to fill [48] which occupied its middle. Fill [50], in between, was distinctively dark and humic.
- 4.2.3 Pond Segment 69 (section not drawn) was revealed in a c.6m sq area, machine-excavated in order to more clearly define the ends of both Pond A and B. Excavated to a depth of c.0.30m, this established that the southeast end of Pond A was sub-square in plan. A single fill [55], comprising dark brownish grey friable silt clay, was exposed within it.
- 4.2.4 Segment [73] was subsequently positioned along the length of Pond A and investigated its southeast end within a 1.8m-wide machine-cut trench (Figure 8). Closely-datable finds were collected from machined pond deposits as unstratified finds context [74]. Excavated to a depth of only 1.0m, the base of the pond was not reached. Although partially truncated by the machine reduction undertaken to clarify the pond ends, the upper portion of the pond cut [73] was recorded in section and was evidently stepped (Figure 3, section 2; Figure 9). A sequence of six fills was recorded. The earliest had accumulated on the stepped edge (or is it a recut?) and was a brownish yellow soft/sticky silt clay [80]. Much more substantial grey silt clay [79] occupied the majority of the cut, with a sequence of thin deposits of grey-brown clay silt [78 and 77] and brownish yellow soft/sticky silt clay [76] appearing to fill a slump hollow in the middle of the pond. A truncation event across the top of the in-filled pond can be inferred, with overlying deposit of dark brownish grey friable silt clay (75) representing a final infilling / levelling of the feature.
- 4.2.5 The lowest fills within Pond A appear to be waterlain and to have accumulated naturally, hence the absence of artefacts within them. The upper, dryer and often more substantive, fills contain increasing quantities of finds primarily deposited someone in the late 15th to mid-16th centuries with final in-filling taking place in the early/mid-18th century as represented by uppermost fills [47, 49 and 55] across the three excavated segments. Context assemblages mostly comprise pottery, brick, tile, stone, animal bone and shell, with occasional metalwork, glass and coal fragments.

4.2.5 Soils samples <7> and <8> collected from the lower fills of Pond A contained remains of aquatic plant seeds and water flea egg cases, indicating that they accumulated within still water conditions in the open pond. Wet grassland/bankside and marshy ground plants evidently grew on the upper slopes of, or else in close proximity to, the pond. Soil samples <3>, <4> and <5> from the upper fills contain less numerous and diverse plant remains but demonstrate deposition and accumulation in a generally drier pond environment. Carbonised crop remains were present in uppermost fill [47].

### **4.3 Pond B**

4.3.1 Pond B extended into the south-eastern part of the site where it was exposed for a length of c.12m. Varying between 5-6m wide, it was slightly less substantial than Pond A, though on the same NW-SE alignment and separated from it by a small gap of 2.4m. This pond was investigated within two excavated segments [66 and 68].

4.3.2 Segment [66] was hand-excavated across the full width of the pond, toward its southeast end as exposed (Figure 10). The 1.3m-deep pond cut had moderately sloping sides and a broad, flat base and contained a relatively simple sequence of four fills (Figure 3, section 3; Figure 11). The lower three fills are likely to have accumulated through natural silting. They consisted of greyish green soft sandy clay [65], and dark greyish brown and greyish brown friable sandy silts [64 and 67]. The deposition of the primary fill [65] probably took place under anaerobic conditions in standing water as it was greyish green in colour and therefore not oxidised (*i.e.* brown and 'rusty'). Uppermost fill [57] comprised pale orange brown soft sandy clay and was possibly backfill deposited after the pond had passed out of use. The deposit sequence had compressed and slumped as it formed, leaving the four fills with slightly concave profiles.

4.3.3 Segment 68 was within an area of general machine reduction undertaken to clarify pond edges (see section 4.2.3). Excavated only to a depth of c.0.3m, only Pond B's northwest end and uppermost exposed fill (56), a brownish grey friable silt clay, were recorded in plan.

4.3.4 Finds collected from basal fill [65] are restricted to small quantities of shell and brick/tile, which may in fact be intrusive from the layers above. Concerted deposition of cultural material appears to commence from the mid-15th century, though the presence of later glass in [64] might hint that this was in fact later – perhaps late 15th to mid-16th as for Pond A? Final in-filling seems to be undertaken earlier than for Pond A, in the mid-16th to 17th centuries, showing that the histories of the two ponds were not necessarily parallel.

4.3.5 Similar to Pond A, soil sample <15> from basal fill [65] indicates accumulation within still water conditions in the open pond, with wet grassland/bankside and marshy ground plants growing on its upper slopes and/or immediate surrounds. Again, preserved plant remains from the upper deposits, in samples <12-14>, attest to a drier depositional environment.

### **4.4 Gully 71**

4.4.1 Gully [71] was 4.4m long, curving and extended between Ponds A and B (Figure 12). It had been inadvertently truncated by c.0.25m during the

stripping of trench I in 2008, but originally would have been 06.m wide and 0.5m deep (Figure 3, section 4). It contained a primary fill of dark yellowish brown firm silt clay [72] and a later fill of yellowish brown / grey plastic silt clay [83], apparently overlain by uppermost pond fill [56]. The stratigraphic relationship between the gully and ponds suggests that the gully was in use before or, more likely, at the same time.

- 4.4.2 The gully fill contained two sherds of 13th-14th century pottery along with small quantities of animal bone, shell and medieval brick and tile. However, the pottery is interpreted as being residual and the gully contemporary with the functioning of the ponds.

#### **4.5 Layers**

- 4.5.1 Ponds A and B cut through surface and below-surface layers of yellowish [2, 4, 8, 61, 62 and 81], greyish [49, 63 and 70] and pale greenish brown [84] sandy silt clays and sandy clay silts. The extents of layers [2, 4, 8, 49 and 70] were unable to be clearly defined because they were amorphous in plan.

- 4.5.2 Many of these deposits [2, 4, 8, 61, 62, 63, 81, 84 ] were 'clean', undisturbed and contained no finds, and were most likely naturally laid in waterlogged conditions. Layer 63 contained occasional patches and streaks of black, organic-like, silt and extended beneath the base of pond A. Analysis of soil sample <9> collected from it revealed the presence of only low levels of aquatic and marsh habitat plant remains (see section 6.13).

- 4.5.3 The remains of brownish grey sandy silt clay layers [49] and [70] were recorded in the central part of the site. Most significantly, both were apparently cut by the ponds though it was not possible to determine whether these deposits had in fact accumulated/formed before or during the creation/use of the ponds. It is unclear whether the post-medieval pottery retrieved from [70] dates the layer or is intrusive.

- 4.5.3 Further thin remnant layers of brownish grey and dark brownish grey sandy silt clay [7, 32 and 36] partially covered the seemingly natural deposits in the north-eastern part of the site. These contained 19th century pottery, clay tobacco pipe, brick/tile and glass fragments and are likely to be the remnants of a post-medieval topsoil that presumably covered some or all of the site until its 20th century development.

#### **4.6 Modern pits and post-holes**

- 4.6.1 Seventeen pits and post-holes clustered in the north-eastern corner of the site. All were less than 0.35m deep and the majority contained only a single fill each. They generally cut later post-medieval soil layers [32] and/or [36], and some were themselves cut by modern concrete pads and a drain. None intercut one another, which may hint at their contemporaneity. However, little meaningful spatial patterning can be discerned.

- 4.6.2 Sub-square pits [11] and [15] (Figure 13), and rectangular cuts [39] and [41] may have had a structural function. All could be construed to be aligned upon the modern drain which runs east-west across this northwest corner of the site. The square pits contained similar dark grey-brown clayey silts while the rectangular cuts contained dark greyish-brown sand silts.

- 4.6.3 Six larger, though variably-sized and shaped, pits [9, 17, 27, 29, 33] and ?root-hole [25] clustered further toward the northern corner. Ranging between oval, to elongated and tapering, all were around 0.1m deep and contained silt clay fills (Figures 14 and 15).
- 4.6.4 Small circular to oval cuts [13, 19, 21, 23, 37, 43 and 45] were seemingly scattered amongst the above features. General under 0.5m diameter, these too were established to be only c.0.1m deep (where excavated) and filled with dark grey-brown clay silts (Figure 16).
- 4.6.5 The fills of the majority of these pits and post-holes contained small, but consistent, quantities of pottery, clay tobacco pipe, brick/tile and glass fragments that indicate their 19th century date. The medieval pottery in pit [26] is judged to be residual. Larger pit [33] could be earlier, possibly being in-filled in the 17th century. Pit [9] could be late 17th/early 18th century or later.

#### **4.7 Attenuation Tank pits 1 and 2 monitoring**

- 4.7.1 The 4m sq pit excavated for Attenuation Tank 1 was sited c.5m north-west of the site entranceway on the Lisle Lane frontage (Figure 1). Machine-cut to a depth of 3.55m a sequence of four layers was recorded (Figure 17). The lowest deposit was a pale greenish grey soft/sticky silt clay and gravel [90] overlain by a 1m thickness of dark brownish grey/black sticky clayey silt [89]. Above, was a c.0.3m-thick layer of pale greenish grey soft/sticky silty clay [88], and finally a c.2m-thick layer of brownish yellow plastic/firm silt clay [87]. No finds were retrieved from any of these deposits and all are likely to be natural.
- 4.7.2 The Attenuation Tank 2 pit was c.7.5m x 3.75m and was machine-excavated to a depth of 0.6m (Figure 1). It was located partially overlying the northwest end of Pond B and largely intruded into parts of it already investigated in evaluation Trench J or else as segment 68 (Figure 18). The excavated spoil contained pieces of brick, tile, pottery and animal bone, although these were not collected as they were all un-stratified and were heavily cross-contaminated with artefacts from the backfilling of evaluation trench J. Being a relatively shallow groundwork, no further useful insight into Pond B was gained.

## **5.0 DOCUMENTARY RESEARCH**

### **5.1 Results**

- 5.1.1 Initial searching of historical documentary records for site-specific information, indicates that Ponds A and B were probably in use during the late 15th/ early 16th century. Ely Priory rentals dating from 1522-23 and 1524-25 enable partial reconstruction of the relative locations of the tenements and their occupants along the west side of Lisle Lane during the early 16th century. The rentals record one of the properties to have contained two ponds and an orchard, and to have been occupied by a William Rudston.
- 5.1.2 It is possible that the ponds referred to, are those recorded within the excavation area, as the rentals mention no other ponds along Lisle Lane. If this can be substantiated, they provide a fixed point for the William Rudston tenement and for those to either side of it.

5.1.3 Even if this cannot be proven, the descriptions of the Lisle Lane tenements provide a picture as to the nature of the layout and use of the locality and help place the site and its recorded archaeological remains into historical context.

## **5.2 Further work**

5.2.1 It is judged that there is potential for further information regarding the past use of the site and its locality to be gained through more detailed study of historic primary records and consultation of secondary sources.

5.2.2 In particular, there is scope to re-examine the cartographic evidence (e.g. DTS Raeburn 2007; Foard-Colby 2007) to identify long-lived property boundaries. These can then be compared to the descriptions of the tenements of the 1522-23 and 1524-25 rentals (e.g. Holton-Krayenbuhl 2011) with a view to identifying them more precisely in relation to the excavated evidence from this site.

5.2.3 Consultation of Diocesan records held in the Cambridge University Library may also be worthwhile, perhaps providing insights into the construction, modification and clearance of major (brick-built?) buildings in the town contemporary with the site and its development.

## **6.0 FINDS AND ENVIRONMENTAL ASSESSMENTS**

### **6.1 Medieval and post-medieval pottery** by Paul Blinkhorn

The pottery was initially bulk-sorted and recorded on a computer using DBase IV software. The material from each context was recorded by number and weight of sherds per fabric type, with featureless body sherds of the same fabric counted, weighed and recorded as one database entry. Feature sherds such as rims, bases and lugs were individually recorded, with individual codes used for the various types. Decorated sherds were similarly treated. In the case of the rimsherds, the form, diameter in mm and the percentage remaining of the original complete circumference was all recorded.

The terminology used is that defined by the Medieval Pottery Research Group's Guide to the Classification of Medieval Ceramic Forms (MPRG 1998) and to the minimum standards laid out in the Minimum Standards for the Processing, Recording, Analysis and Publication of post-Roman Ceramics (MPRG2001). All the statistical analyses were carried out using a DBase package written by the author, which interrogated the original or subsidiary databases, with some of the final calculations made with an electronic calculator. Any statistical analyses were carried out to the minimum standards suggested by Orton (1998-9, 135-7).

#### **6.1.1 The Pottery**

The pottery assemblage comprised 613 sherds with a total weight of 8982g. The following fabric types were noted:

F301: Ely Ware, mid 12th-15th century (Spoerry 2008): Generic name for a quartz sand and calcareous tempered group of pottery fabrics mainly manufactured in Ely, but also with a second possible source in the Hunts. Fenland. Jars, bowls and jugs dominate the assemblage. Earlier vessels



hand-built and turntable finished, later vessels finer and usually wheel-thrown. wide distribution, including King's Lynn, where it was originally identified as 'Grimston Software'. 73 sherds, 861g.

F302: Bourne 'A' Ware: 13th-14th century (McCarthy and Brooks 1988, 259). Manufactured in the eponymous south Lincolnshire village. Wheel-thrown, reduced, grey fabric with sparse sand and calcitic inclusions, vessels sometimes with a green or brownish glaze. Full range of medieval vessel types. 1 sherd, 12g.

F303: Toynton Ware, late 13th-14th century (McCarthy and Brooks 1988, 259). Hard, sandy ware, abundant fine quartz. Red to buff, often with a dark grey core. High proportion of jugs, often with ornate slip decoration. 1 sherd, 4g.

F310: ?French/German Whiteware, ?late medieval. Fine white fabric with few visible inclusions other than sparse clear quartz c 0.5mm. Bright yellow glaze, applied pellet in a brown slip. 1 sherd, 8g.

F324: Brill/Boarstall Ware: c.AD1200-?1600 (Mellor 1994). Wheel-thrown. Hard buff, orange, pale pink, or yellow-grey fabric, sometimes with fine 'pimply' surface. Rare to common sub-angular to sub-rounded orange, clear and grey quartzite up to 0.5mm, rare sub-rounded to sub-angular red ironstone up to 1mm. Mottled pale to dark glossy green exterior glaze, often with copper filings. Applied rouletted strips common, sometimes in red-firing clay, rosettes, spirals also occur. Later vessels plainer. 1 sherd, 4g.

F327: Hedingham Ware: Late 12th-14th century. Fine orange micaceous glazed ware, mainly glazed jugs (McCarthy and Brooks 1988, 300-2). 3 sherds, 6g.

F335: Cambridgeshire Sgraffito Ware: 14th-15th century (McCarthy and Brooks 1988, 424-5). Fairly hard, smooth red fabric, outer surface of vessels covered in a white slip through which designs were incised to reveal the body clay, the whole covered in a yellow glaze which occasionally has green copper-spotting. Fairly common in Cambridgeshire, although the production source is thought to be in Essex. 1 sherd, 3g.

F401: Bourne 'D' Ware: c.1450-1637 (McCarthy and Brooks 1988, 409). Production as the 'A' ware. Fairly hard, smooth, brick-red fabric, often with a grey core. Some vessels have sparse calcitic inclusions up to 2mm. Full range of late medieval to early post-medieval vessel forms, jugs, pancheons, cisterns, etc. Vessels often have a thin, patchy exterior white slip, over which a clear glaze had been applied. 22 sherds, 732g.

F402: Late Medieval Ely ware. 15th-16th century. Hard orange sandy ware in a range of utilitarian forms, some with a dark green glaze (Spoerry 2008, 13-14). 144 sherds, 3435g.

F403: Tudor Green Wares: 15th-mid 16th C. Green-glazed whitewares produced at several centres in the south of England, such as Farnborough Hill, Hants (McCarthy and Brooks 1988, 450). c AD1380-1500. 9 sherds, 62g.

F404: Cistercian Ware: c.AD1470-1550. Hard, smooth fabric, usually brick-red, but can be paler or browner. Few visible inclusions, except for occasional quartz grains. Range of vessel forms somewhat specialized, and usually very thin-walled (c. 2mm). Rare white slip decoration. Manufactured at a number of centres, including Ely (Hall 2001, 7). 25 sherds, 150g.

F405. German Stonewares: AD1480+. A range of hard, grey, salt-glazed fabrics produced at numerous sites in the Rhineland and beyond (cf Gaimster 1997). 21 sherds, 199g.

F410: Anglo-Dutch Tin-glazed Earthenware 17th - early 18th century (Orton 1988). Fine white earthenware, occasionally pinkish or yellowish core. Thick white tin glaze, with painted cobalt blue or polychrome decoration, . Range of table and display wares such as mugs, plates, dishes, bowls and vases. 8 sherds, 72g.

F411: Metropolitan-type Slipware: 17th-18th C. Similar fabric to Red Earthenware, with geometric designs in white slip under the glaze. Produced at a number of centres, but particularly Harlow in Essex (Davey and Walker 2009). 9 sherds, 112g.

F412: Midland Blackwares: AD 1550-1700. (Brears 1969). Hard. Brick-red fabric with sparse to moderate quartz up to 0.5 mm. Glossy black glaze, usually on both surfaces. Distributed throughout the south midlands of England. Manufactured in a range of utilitarian forms, particularly mugs and tygs. 17 sherds, 120g.

F413: Cologne/Westerwald Stoneware: 17th century+ (Gaimster 1997). Hard, grey fabric with clear salt glaze. Vessels include jugs with moulded decoration and chamber-pots, often with blue and purple manganese and cobalt decoration. 2 sherds, 6g.

F415: Border Ware: AD1550-1700. Wide range of utilitarian and tablewares in a fine, white fabric with a bright green, yellow or brown glaze. Manufactured at a number of centres on the Surrey/Hampshire border and the main coarseware pottery type in London in the post-medieval period (Pearce 1988). 3 sherds, 11g.

F425: Glazed Red Earthenware: 16th-19th century. Fine sandy earthenware, usually with a brown or green glaze, occurring in a range of utilitarian forms. Such 'country pottery' was first made in the 16th century, and in some areas continued in use until the 19th century. 200 sherds, 2866g.

F427: Staffordshire Manganese Mottled Ware: Late 17th-18th century. Hard buff fabric with distinctive purplish-brown glaze. Usually fine drinking pottery, but chamber pots and other more utilitarian vessels also known. 16 sherds, 102g.

F428: Staffordshire Slipware: AD1640-1750. Fine cream fabric with white slip and pale yellow lead glaze, commonest decoration is feathered dark brown trailed slip. Chiefly press-moulded flat wares, although small bowls and mugs etc are known. 6 sherds, 33g.

F438: English Stoneware: 1680+. Hard, grey fabric, often with a brown, iron-rich exterior wash. Range of utilitarian vessels, particularly mugs. 8 sherds, 36g.

F443: Staffordshire Salt-Glazed Stoneware: AD1720-1780 Hard, white fabric with a distinctive white 'orange peel' textured glaze. Range of fine tablewares such as mugs, tea bowls and plates. 12 sherds, 46g.

F1000: Miscellaneous 19th and 20th century wares: Mass-produced white earthenwares, stonewares etc. 28 sherds, 82g.

F1001: Romano-British Grey Ware: 1 sherd, 13g.

F1002: Bronze Age/Early Iron Age Flint-tempered Ware: Moderate angular white burnt flint up to 2mm. 1 sherd, 7g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Appendix 2. The veracity of the dating has been confirmed by reference to the stratigraphic record.

The range of fabric types is typical of sites in the region (eg. Hall 2001), although the sherd of French/German Whiteware from context 50 is somewhat unusual. Pottery with yellow glaze and red/brown pellet decoration is a well-known product of North French kilns, although the fabric of the sherd from this site more closely resembles Beauvais-type Ware (Brown 2002, 30). The pellet decoration is atypical of that tradition, but brown slip decoration is known from some German White ware vessels. The latter is very under-researched however (Hurst et al. 1986, 227), and so the origins of this sherd remain obscure. Given the fact that other late medieval German pottery in the form of Raeren Stoneware is present here, and other French wares are not, suggests that a German source for the Whiteware sherd seems the most likely.

### 6.1.2 Chronology

Each context-specific pottery assemblage was given a seriated Ceramic Phase (CP) date based on the range of fabric types present. The chronology of these, and the pottery occurrence per ceramic phase, is shown in Table 2, with the occurrence by phase per major fabric type is shown in Table 3.

<b>Ceramic Phase</b>	<b>Date</b>	<b>Defining Wares</b>	<b>No</b>	<b>Wt</b>	<b>Mean Sherd Wt</b>
M1	M 12th – E 13th C	F301	5	26	5.1g
M2	13th – 14th C	F302, F324, F327	10	118	11.8g
M3	E -M 15th C	F402, F403	18	227	12.6g
M4	M -L 15th C	F401	0	0	0
M5	L 15th - M 16th	F404, F405	90	2010	22.3g
PM1	M 16th – 17th C	F412, F425	95	2020	21.3g
PM2	E-M 17th C	F410, F411, F413	22	379	17.2g
PM3	M – L 17th C	F428	12	56	4.7g
PM4	L 17th – E 18th C	F427, F438	2	5	2.5g
PM5	E – M 18th C	F443	206	2585	12.5g
MOD	19th C +	F1000	81	486	6.0g
U/S	U/S		72	1070	14.9g

		Total	613	8982	14.7g
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Table 2: Pottery occurrence by ceramic phase, all post-Roman

The data in Table 2 shows that the main periods of activity in terms of pottery deposition were in the late medieval to early post-medieval period (late 15th – mid 17th century) and again in the early-mid 18th century.

The data in Table 3 shows that there were fairly noticeable levels of residuality in most of the ceramic phases examined, apart from CP PM1. In ceramic phases M5, PM2, and PM5, residual pottery made up around 17 – 22% of the major ware assemblages, and around 85% of the material from the modern phases. This suggests that there was considerable disturbance of earlier strata throughout the life of the site. The physical state of the pottery also suggests that much of the stratified material was the product of secondary deposition. Data in Table 2 shows that the mean sherd size was fairly low throughout the life of the site, and there were few refitting sherds in any of the context-specific assemblages. A large fragment of a tall drinking jug was present in context 48 (CP M5), and is the only vessel from the site that can be regarded as well-represented.

All the material appears to be of a domestic nature. The earlier medieval material comprises fragments of jars, jugs and bowls, while the later medieval and post-medieval material includes developed vessel types associated with the storage, transportation, preparation, serving and consumption of food and drink.

	M5	PM1	PM2	PM5	MOD
F301	17.8%	0.5%	3.2%	5.0%	1.6%
F402	50.7%	78.7%	14.0%	12.6%	0.2%
F403	0	0.5%	0	0.2%	0
F401	28.7%	5.5%	0	1.7%	0
F404	1.8%	0	12.9%	0.9%	1.2%
F405	0.4%	4.8%	14.5%	0.7%	3.7%
F412	-	2.4%	0	1.2%	3.5%
F425	-	7.4%	40.1%	68.8%	62.6%
F410	-	-	0	1.1%	0
F411	-	-	12.7%	1.8%	3.7%
F427	-	-	-	2.5%	7.2%
F428	-	-	-	0.81%	0
F438	-	-	-	0.6%	0
F443	-	-	-	1.5%	1.2%
F1000	-	-	-	-	15.6%
Total	2010	2020	379	2585	486

Table 3: Pottery occurrence per ceramic phase, major late medieval and post-medieval groups, by major fabric type (Shaded cells = residual material)

### 6.1.3 Assessment

The assemblage is nearly all somewhat fragmented, and the chronology of the individual groups suggests that activity at the site was somewhat sporadic. A few unusual sherds were present, such as a fragment of an imported Langerwehe mug, a bodysherd of French or German White Ware, and a sherd from a Cistercian Ware cup decorated with a human face rendered in applied white slip. A few other sherds are likely to be worthy of illustration.

## 6.2 Glass by Elke Raemen

A small assemblage of glass consisting of 37 fragments (wt 246g) was recovered from 12 individually numbered contexts. Fragments were largely hand-collected with just one small chip collected from the environmental residues. Pieces mostly derive from pits and layers and only six shards were recovered from ponds A and B. Glass dates range from early post-medieval through to Victorian, however, the majority of the assemblage dates to c.1650-1750. Included are 22 vessel pieces and 14 window pane fragments. All glass was recorded in full on pro forma sheets for archive and data was entered onto Excel spreadsheet. The following overview provides a summary by period and by category.

### 6.2.1 Early Post-medieval Glass

#### Bottles

Shaft-and-globe bottle fragments, 14 in total and dated to c.1650-1750, were recovered from five different contexts. No complete profiles survive. In addition, a green glass case bottle shard was found in Pond B (fill [57]). The fragment dates to c. 1575-1700.

#### Drinking Vessels

A goblet fragment was found in Pond A (fill [47]). The piece now appears to be almost opaque black, though closer examination reveals it to be translucent red. The fragment is decorated with marvered blue trails (*vetro a fili*) and represents a high quality import (Venice or *façon de Venise*) in probable soda glass. It is likely to be of mid-16th to mid-17th century date, although an earlier date cannot be ruled out.

#### Other Vessels

An amber dish rim fragment, probably of soda glass, was found in layer [49]. The piece likely dates to c.1600-1750, although an earlier date can again not be excluded.

#### Window panes

Six window glass fragments are of early post-medieval date, including both colourless and pale green glass. Fragments are too small to refine dating, however, several edges are included, revealing both a fragment from a rounded (pit [15], fill [16]) and from a rectangular pane (layer [49]).

### 6.2.2 Late Post-medieval Glass

#### Bottles

Three green glass wine bottle fragments are included, amongst them a fragment dated to c.1750-1850 (layer [32]) and two small and undiagnostic pieces dating to between c.1650-1800 (layer [36]).

A 19th century green panelled bottle fragment, which would have contained either medicinal or alcoholic liquids, was recovered from pit [11] (fill [12]). An aqua body fragment from a rectangular bottle, dated to c.1750-1900, was found in layer 32, whereas Pond B (fill [57]) contained a tiny intrusive chip from a cylindrical amber bottle of mid-19th to early 20th century date.

#### Window panes

A small group of 12 pieces of window glass is of late post-medieval date. Fragments are all colourless. Where identifiable, they derive from rectangular window panes (i.e. pit fills [12] and [24], fragments from the former fill date to the mid-19th to early 20th century; fragments from the latter fill are of 19th century date).

### 6.3 Clay Tobacco Pipe by Elke Raemen

A small assemblage consisting of 224 clay tobacco pipe fragments (wt 1062g) was recovered from sixteen individually numbered contexts. Fragments were mostly hand-collected, with just one bowl recovered from the environmental residues.

Pipes were all recorded in full on pro forma sheets for archive and data was entered onto Excel spread-sheet. Bowls were principally classified according to the London "Chronology of Bowl Types" (prefix AO) by Atkinson and Oswald (1969, 177-180). This was complemented with the 'Simplified General Typology' (prefix OS, Oswald 1975), to refine dating of the 18th-century clay pipes.

Pipes were recorded following guidelines as set out by Higgins and Davey (2004). A total of three pipes were marked and/or decorated and were assigned accession numbers (RF <17>-<19>).

#### 6.3.1 Overview of the Assemblage

A total of 29 bowls and bowl fragments was recovered as well as 192 stem fragments and three mouthpieces. The vast majority of bowls dates to c.1680-1710, however, bowls as early as c.1640-1670 and as late as c.1800-1820 are also included (Table 4). Only four bowls are complete. However, none are abraded, suggesting little reworking took place. The largest group, comprising nine bowls, was recovered from Pond A (fill [47]).

Type	No of bowls
AO12	1
AO13	1
AO18	1
AO19/21	1
AO20	8
AO20/21	2
AO21	2
AO21/22	5
AO22	1
AO25/26	1
OS10	1
OS12	2
AO27/28	1
UNK	2
<b>Total</b>	<b>29</b>

Table 4: Clay tobacco bowl types

The only decorated bowl was recovered from surface cleaning [1] and consists of an AO27/28 dated to c.1800-1820 (RF <19>). Decoration consists of flutes as well as leaf-decorated seams.

Stem fragments including many examples with external soot as well as two covered in red ?paint. None of the fragments conjoin within or across contexts.

Three mouthpieces were recovered, all of which are straight cut.

Of interest are the ten "seconds" amongst the stem fragments. One of the mouthpieces is also included. They are covered in finger prints, often have an

irregular “lumpy” surface and in one instance has been clumsily repaired (layer [49]). These pipes could still have been smoked and “seconds” were often sold hidden amongst better-finished products. Kiln waste was also recovered, consisting of two stems, both burst during firing, rendering them unusable. Both seconds and kiln waste date to the mid/late 17th to early/mid-18th century.

Only two bowls contain moulded maker’s marks on the heel or spur sides. Both were recovered during surface cleaning [1]. Initials consists of ?WW and DF, neither of which are from known local makers.

#### 6.4 Ceramic building materials by Susan Pringle

A total of 2,122 fragments of medieval and post-medieval ceramic building materials and mortar weighing 123.442kg was examined from 27 contexts. Of these, nine contexts [1, 47, 48, 49, 50, 51, 55, 57 and 64] were very large (more than 50 fragments) and three were large (25-50 fragments); the remainder contained fewer than 25 fragments. The material was predominantly of medieval and early post-medieval date with a small amount of later tile. The total weight and number of fragments from each period is set out in Table 5. The assemblage was in poor condition, with a substantial proportion of the brick and tile showing signs of having been burnt.

<i>Period</i>	<i>No. of items</i>	<i>% of total count</i>	<i>Weight kg.</i>	<i>% of total weight</i>
Medieval roof tile	1232	58%	65.576	53%
Medieval/early post-med brick	226	11%	32.396	26%
Medieval floor tile	11	1%	1.384	1%
Post-medieval roof tile	3	<1%	0.148	<1%
Unidentified tile	588	28%	22.544	18%
Mortar, plaster and daub	56	3%	1.394	1%
Total	2122	100%	123.442	100%

Table 5. Summary of building materials

All the ceramic building material was recorded on a standard recording form. The tile was quantified by fabric, form, weight and fragment count with the exception of that from contexts 1, 47, 48 and 64. A 50% sample of the tile from these contexts was quantified by fabric, the remainder being scanned and quantified by form, weight and count only. Fabric descriptions were compiled with the aid of a microscope. Environmental samples 47 <3>, 50 <5>, 57<12>, 58 <7>, 59/60 <8>, 63 <9>, 64 <14>, 65 <15> and 67 <13> were scanned. The information on the recording sheets was entered onto an Excel database. Samples of the fabrics and items of interest were retained; the remainder of the material (approximately 90%) was discarded.

##### 6.4.1 Dating

The broad date range of the material in each context is summarised in Table 6. Peg tile and brick dates are approximate; the early peg tile types could be slightly earlier than 1200 AD.

<b>Context</b>	<b>Date range</b>	<b>Contents</b>
1	1630-1900, resid med/early pmed	pan-tile, residual brick and peg tile
10	1200-1500	Flemish-type brick, tile
12	1200-1600	tile
14	1200-1600	tile
16	1200-1500	Flemish-type brick, tile
18	1200-1500	brick, tile, mortar
20	1200-1500	peg tile, mortar
22	1200-1500	tile, mortar
24	19th c., resid 1350-1500	Flemish-type brick, mortar, 19th c porcelain
26	Pmed, resid 1200-1500	PMED pot, med tile, mortar
28	1200-1500	tile
31	1250-1500	peg tile, tile
32	1350-1500	Flemish-type brick, tile
34	1700-1800, resid med	brick, tile, wall plaster
36	1200-1500	peg tile, tile, mortar
47	1200-1600	?local brick, Flemish-type brick, peg tile, mortar/plaster wall render, ?paving stone
48	1200-1600	Flemish-type and ?local brick, peg and ridge tile, stone ?paving, daub
49	1200-1600	Flemish-type and other brick, peg tile
50	1200-1500	Flemish-type brick, peg and ridge tile, mortar/plaster wall render
51	1200-1600	Flemish-type and ?local brick, peg and decorated ridge tile, mortar/plaster wall render
55	1200-1500	Flemish-type brick, peg and ridge tile, lime mortar
56	1200-1500	peg tile
57	1200-1600	Flemish-type and ?local brick, peg and ridge tile, Flemish-type floor tile, mortar/painted plaster wall render, sandstone roofing/paving, chalk rubble, ?Millstone grit
64	1200-1600	Flemish-type and ?local brick, peg tile, Flemish-type floor tile, mortar
65	1200-?1700	Flemish-type brick, tile
70	1200-1500	peg tile, mortar
72	1200-1500	peg tile, Flemish-type brick

*Table 6: Broad dates of building material contexts*

#### **6.4.2 Brick and tile**

##### Medieval roof tiles:

The majority of the assemblage consisted of roof tile. Because of the prevalence of burnt material in the assemblage, over 20% of the roof tile being extremely reduced or vitrified, fabric analysis was not easy, but three broad groups were identified consisting of calcareous, red and sandy fabrics. It could not always be determined whether the reduced cores in some of the



fabrics were a characteristic of that fabric or a result of exposure to fire. Detailed fabric descriptions are set out in Appendix 3.

The most abundant fabric, possibly because it was distinctive even when burnt, was calcareous fabric T1 which contained abundant coarse to very coarse calcium carbonate inclusions. Two finer lime-rich fabrics were identified as T3 and T3; tiles in these fabrics had white surfaces. The red fabric group consisted of tiles with a smooth orange-red matrix with moderate inclusions of quartz and calcium carbonate. Fabric T2 had the fewest inclusions, T5 contained sparse to moderate quartz and T6, the most common version, had more quartz and calcium carbonate; it was not clear to what extent the differences in this group were due to vitrification. Silty orange fabric T8, poorly mixed with pale orange to buff clays containing fine to medium quartz and calcium carbonate. 2-nail hole type; nail-holes vary from round, polygonal to square set diagonally.

The sandy fabrics were the least abundant group and were initially all recorded as fabric T7, later sub-divided when fabrics T9, T10 and T11 were identified. Fabric T9 had common medium quartz with some very coarse quartz. Fabric T10 was distinctive as it had orange surfaces, a thick greyish black core and a silty texture with fairly fine quartz; some examples contained white shell. Fabric T11 may have been a variant of fabric T9 with rose or red quartz.

<b>Fabric</b>	<b>Number of fragments</b>	<b>Percentage of total count</b>
T1	177	23%
T2	122	16%
T3	94	12%
T4	41	5%
T5	52	7%
T6	143	19%
T7	21	3%
T8	71	9%
T9	9	1%
T10	28	4%
T11	2	<1%
Total	760	100%

*Table 7: Relative quantities of tile fabrics by number of fragments*

The best typological evidence for the peg tiles came from tiles in fabric T1. A near-complete tile 245 mm long by 146 mm wide and c. 15 mm thick came from Pond B [57], and incomplete tiles in the same fabric from Pond B and layer 70 had similar widths in the range 144-147mm and were from 12-15mm thick. All the fabric T1 tiles seemed to have had a single centrally-placed nail-hole and the better-preserved examples seemed to be slightly narrower at the top than the bottom. This was a feature of some early peg tiles which was not seen after the early 13th century when the rectangular two-hole type became generally used. Most of the peg tiles appeared to have had two nail-holes, although this was only confirmed on tiles in fabrics T2, T6 and T8. Areas of

glaze were noted on a few tiles but all appeared to be accidental, due to vitrification of moulding sand or mortar as a result of exposure to intense heat. The relative quantities of the positively identified peg tile fabrics are set out in Table 7.

Ridge tiles:

Ridge tile fragments were identified in fabrics T1, T2, T7, T8, T10, T11; they were probably under-represented in the quantification because of the similarity of the flat areas to peg tile. A few small fragments of decorated ridge were noted; the best example, from Pond A [51], had horizontal streaks on both surfaces which could be slip decoration (fabric reduced, possibly T10). A plain fragment from Pond B [57] appeared to have decayed glaze on the upper surface. The glazed and decorated ridge tiles were usually of 13th or 14th century date.

Shaped tile:

An unusual tile fragment which appeared to be from the corner of a thick tile, 21 mm thick, with a knife-cut circular aperture too large to be a nail hole came from context [55].

Bricks:

The brick assemblage contained less vitrified material than the roof tile assemblage, although many bricks were reduced in part or sooted. The assemblage was dominated by 'Flemish-type' bricks with fine fabrics differentiated by the size of their calcareous inclusions; fabric B1 had fairly coarse calcium carbonate, fabric B6 was finer, and fabric B5, a Flemish-type 'silt' fabric, contained silt-sized calcium carbonate. Bricks in these fabric formed 75% of the identifiable bricks. They were characterised by indented margins and heavily grass-marked bases and sides. No complete bricks survived, but analysis of width and thickness suggested that they may have represented three groups measuring 107-114 mm x 45-50 mm, 105-114mm x 55-5 mm and 120-126mm x 50-57mm. The largest and smallest groups contained bricks in all three fabrics and occurred in both ponds; the intermediate group contained only bricks in fabric B1 from Pond B. Bricks of this type were being imported from at least the 1260s, but the larger bricks in this assemblage could probably be dated to c.1350-1400 and the smaller types to the 15th century (Drury 2000, 59). Full descriptions of the brick fabrics are set out in Appendix 2.

Smaller quantities of what may be locally produced bricks were represented by heavily calcareous fabrics B2 and B7, silty orange fabric B3 and sandy iron-rich fabric B4. Bricks in B2 were grass-marked, a feature of early production, and a brick in B7 had indented margins; these bricks were likely to have been early post-medieval with dates in the range c. 1450-1650.

Medieval floor tiles:

Eleven fragments of glazed floor tile in calcareous fabrics were recorded from two contexts in Pond B, [57] and [64]. The tiles had knife-cut bevels and were unkeyed. Although the tiles were mainly reduced and burnt, the glaze where visible was green; one tile had an oval nail hole in one corner. All the fabrics were calcareous, although with slight variations in the size and frequency of quartz. No complete tiles were present; thickness was in the range 30-36 mm which suggested that they dated from the 15th century.

**Pantiles:**

Three fragments of pantile in orange-red fabrics were recorded from contexts [1] and [34]. The fragment from context [34] was black-glazed. Pantiles were introduced to south-east England from the Low Countries in the 1630s, and from c.1700 they were frequently used on domestic and industrial buildings. The black glaze is fairly uncommon; Dutch black-glazed tiles were used on the Dutch House at Kew in 1631 (Lucas 1998, 91, note 19). In 1760 'common and black-glazed pantiles' from a kiln at Gunton near Lowestoft were for sale in Norwich (*ibid.*, 88).

**Daub:**

One small piece of daub with a fine sandy fabric and an imprint of a flat-bladed plant such as grass or reed came from Pond A [48].

**Mortar:**

Pond A produced 14 fragments of loose lime mortar and plaster; ?brick imprints were noted on material from 47, 50 and 51; white painted or lime washed render came from 50 and 51. Pond B contained 21 fragments, most of which seemed to be wall render; one may have been white-painted or lime washed [57]. There were two fragments of interest from the same context; one was mortar render with impressions containing a trace of 'Flemish' brick fabric B1, the other had a stepped impression, probably from a timber construction. Six fragments of mortar came from layers 36 and 70, and another 14 fragments came from more recent pits and post-holes.

**6.4.3 Summary**

The building materials from the site ranged in date from c.1200 AD to the later post-medieval periods. The majority of the material was medieval and early post-medieval; only two contexts, [1] and [34], contained identifiable 17th century or later tile. The medieval assemblage included early peg tile and decorated ridge tile, some of which was glazed, and imported Flemish-type brick and glazed floor tiles. There were only minor differences between the assemblages from Pond A and Pond B, such as the glazed floor tile from Pond B, but essentially both ponds contained similar types with a similar date range of c.1200 AD to c.1600. The building materials included types such as the very early peg tiles, the decorated ridge tiles, imported Flemish-type bricks and floor tiles, the use of which would have been confined to buildings of high status. A likely source for this type of material would have been a monastic structure, possibly a service building, which was damaged by fire and demolished in the early post-medieval period, perhaps around the time of the Dissolution.

Context [72], fill of Gully 71, contained only four pieces of peg tile and a flake of Flemish-type brick which suggested the date of deposition was not earlier than the late 13th century.

Layer [70] contained peg tiles in fabrics T1, T3 and T10 and a lump of yellow sandy mortar; the T1 tiles had early features and the material could have been deposited in the late 12th or, more probably, the 13th century. Layer [49] contained Flemish-type and ?local bricks, material which was unlikely to have been deposited before c.1500 AD. The similarity of the building materials in

the ponds and in [49] suggests that the ponds were not cut, or re-cut, very long before the demolition material was deposited.

## 6.5 **Geological Material** by Luke Barber

The archaeological work recovered just 72 pieces of hand-collected stone, weighing 10,750g, from 12 individually numbered contexts. In addition the residues from the environmental samples produced a further 71g of very small coal and coal shale pieces. Most of this material was recovered from contexts that had already produced similar types in the hand-collected assemblage but one context only produced coal/coal shale from the residues (10g from fill [65] of Pond B). The single largest context group was from fill [57] of Pond B (dated by ceramics to the mid-16th to 17th centuries) that produced 19 pieces of stone, weighing 5194g. The next largest group, consisting of 12 pieces (2308g), was recovered from fill [48] of Pond A (dated by ceramics to the late 15th to mid-16th centuries). However, the degree of longevity or residuality within these deposits is difficult to assess considering the slightly mixed nature of the associated pottery. Provisional stone identifications were undertaken with the aid of a x20 hand lens. This established 20 different stone types in the assemblage, though many of these may represent variations within a single geological outcrop. The assemblage has been listed for archive on pro forma, with the data being input into an excel database during the assessment. The assemblage can be considered under four functional headings.

### 6.5.1 **Building Stone**

This makes up by far the largest proportion of the assemblage and can be divided into two groups: walling and roofing material. Two stone types were clearly used in walling judging by either signs of having been shaped or, more commonly, from traces of adhering lime mortar. The former consist of two fragments of Oolitic limestone, probably from the outcrops west of Peterborough, one of which has the remains of a carved roll though too little is present to establish the piece's function. Both pieces were recovered from Pond A, though from different fills (contexts [47] worked and [48] dated by ceramics to the early/mid 18th and late 15th to mid-16th centuries respectively). The other stone type represented is a glauconitic coarse sandstone (5/1586g), quite probably natural to Ely, which sits on an outcrop of Lower Greensand. All pieces are unworked but some show traces of mortar (Ponds A and B only). It is highly probable that many of the rubble stones considered under 'miscellaneous' (see below) were also pressed into service in wall construction.

The other type of building stone consists of material used in roofing (22/3922g). With the exception of a 68g fragment of West Country-type slate (unstratified) all fragments are from stone roofing slabs in one of four types of stone. All are apparently very fine-grained thinly-bedded sandstones of various hues (buff, dull red and grey) that probably derive from a similar geological source. Three are notably calcareous, the fourth (and less common) is decalcified. Stone roofing slabs from the Wealden Clays around Horsham are strikingly similar but it is likely a more local source supplied the current examples. The stone slabs vary between 10 and 18mm thick, though only a single complete width (120mm) was recorded in fill [48] of Pond A. This piece also has a neatly drilled 10mm diameter peg hole. The earliest deposits to contain these slabs were from Pond A and dated to the late 15th to mid-16th centuries.

### **6.5.2 Fuel**

The assemblage has a notable element of unweathered pieces of coal that range from under 1g to over 50g in size. In all coal, and associated coal shale, account for 23 pieces totalling 376g. The earliest spot-dated context to produce coal was [26] (dated by the ceramics to the mid-12th century), but the five pieces present, weighing only 3g in total, are probably intrusive. Three contexts dated to the late 15th century and one of the 16th century also produced coal/coal shale (contexts [48] 4/34g; [50] 1/18g; [51] 2/11g (Pond A) and [57] 5/238g (Pond B) respectively). The remaining coal fragments were recovered from early 18th-century deposits (contexts [47] 3/42g of coal shale and [49] 2/7g coal shale, 1/23g of coal).

### **6.5.3 Tools**

Six pieces can be grouped under this section as they are related to specific functions. The assemblage includes two fragments from German lava querns (722g). That from layer [49] (cut by Pond A:476g) is from a 38mm thick stone with pronounced grooving on its grinding face. The other piece is from a 32mm thick stone in fill [50] of Pond A. Both pieces are too small to establish whether upper or lower stones are represented. Considering the post-medieval ceramic dates of these deposits both these fragments are clearly residual Saxon or medieval pieces.

There are also two dark silver grey schist whetstone fragments in the assemblage (fills [47] of Pond A and [64] of Pond B, dated early/mid-18th and early/mid-15th century respectively). That from [47] (18g) measured in excess of 75mm long but no complete dimensions survive. The 54g rectangular-sectioned example from [64] is apparently nearly complete (125mm long) with notable tapering giving it a wedge-shaped appearance. Although these stones are not the typical Norwegian Ragstone, the stone is of a similar general type and these may be of medieval pieces.

Fill [50] of Pond A produced a 320g ovoid 'cobble' of chalk (85 x 65mm) with a man-made circumferential 5mm wide, 5mm deep groove. The groove is almost certainly to secure twine used to suspend the piece and as such the piece is most likely to represent a somewhat crude loom or net weight. Whether it is contemporary with the late 15th to mid-16th century pottery that it was associated with is uncertain, though perhaps unlikely.

The final piece of worked stone consists of a small fragment from a 19th century polished welsh school slate (pit [21]).

### **6.5.4 Miscellaneous stone**

The remaining 13 pieces of stone (3274g) consist of a range of fine to coarse sandstones and fine and fossiliferous limestones with no obvious signs of human modification/use. These may well have been put to use in walling or in yard surfacing and the two fossils (fills [48] Pond A – an oyster and [57] Pond B – an ammonite) could have been picked up as curiosities. How these stones came to be in Ely is less certain as only one type can be placed as probably local (a Greensand variant). It is quite possible they came in as ballast on boats and, when dumped on the quayside to take on cargo, were moved into the town and pressed into service.

**6.6 Nails** by Trista Clifford

6.6.1 A total of 24 nails were recovered from 13 individually numbered contexts. The assemblage as a hole is in reasonable condition although most nails retained a large amount of adherent corrosion product, soil and stones; c.45% are incomplete. Types include both general purpose (L31-60mm) and heavy duty (L42-94mm) nails. Two stud type nails (pond A fills [47] and [50]) were also recovered, together with a small tack (Pond B fill [64]). A large masonry nail came from pond A fill [47]. An overview is shown in Table 8.

Type	Period					Total
	U/S	12th-14th C	15th-16th C	17th-18th C	Modern	
Heavy Duty	2	1	1	4	2	10
General Purpose		2	3	3	3	11
Stud			1	1		2
Tack			1			1
Masonry				1		1
Total	2	3	6	9	5	25

Table 8: Overview of the nail assemblage by period

**6.7 Fired Clay** by Trista Clifford

6.7.1 Pond fill [64] produced 14 amorphous pieces of fired clay in a sandy, poorly mixed fabric with moderate organics and infrequent rounded pebbles/calcined flint inclusions. The fragments have no diagnostic features and are most likely to derive from daub.

**6.8 Metallurgical Remains** by Luke Barber

6.8.1 Context [1] produced a 319g fragment of quite dense grey/orange iron slag. Although not particularly diagnostic of process, it is suspected to derive from smithing, though its date is unknown. The only other hand-collected industrial waste consists of four pieces (11g) of 18th to 19th century black aerated clinker (4/11g) from context [26].

6.8.2 Five environmental residues produced tiny slag pieces. By far the most common type consists of 18th to 19th century black clinker some of which is certainly intrusive (recovered from [47] 10g; [50] 13g; [58] 1g and [59/60] 1g). However, contexts [57] and [67] produced small quantities of undiagnostic iron slag (14g and 35g respectively) and context [47] produced 1g of fuel ash slag and a couple of hammerscale flakes from iron smithing. Although this deposit is dated to the early 18th century the degree to which the waste is residual is uncertain.

**6.9 Leather** by Trista Clifford

6.9.1 Seven pieces of waterlogged leather were recovered from context [51]. This material has been recorded for the archive. The leather retains some patches of hair on the grain side and is of probable bovine origin. No signs of working were apparent.

### 6.10 Mammal, bird and fish bone by Gemma Ayton

Excavations at Lisle Lane, Ely produced an animal bone assemblage containing 561 fragments from medieval and post-medieval deposits including ponds, pits, post-holes and gullies. The assemblage has been hand-collected and is in a good to moderate state of preservation.

The mammal and bird assemblage has been recorded onto an Excel spreadsheet in accordance with zoning system outlined by Serjeantson (1996). Wherever possible the fragments have been identified to species and the skeletal element represented. Mammalian elements that could not be confidently identified to species, such as long-bone and vertebrae fragments, have been recorded according to their size and identified as large or medium mammal. The state of fusion has been noted as well as evidence of butchery and burning.

In order to distinguish between the bones and teeth of sheep and goats a number of criteria were used including those outlined by Boessneck (1969), Boessneck *et al* (1964), Halstead *et al* (2002), Hillson (1995), Kratochvil (1969), Payne (1969, 1985), Prummel and Frisch (1986) and Schmid (1972). Red and fallow deer bones and antler were identified with reference to Lister (1997) and Hillson (1996).

Metrical data has been taken in accordance with von den Driesch (1976) and tooth eruption and wear has been recorded according to Grant (1982). The state of fusion has been noted and each fragment has then been studied for signs of butchery, burning, gnawing and pathology.

#### 6.10.1 Assessment

The assemblage contains a total of 561 fragments of mammal, bird and fish bone of which 454 were identifiable to taxa. A range of domestic and wild taxa have been identified including, cattle, caprine, pig, fallow deer, horse, hare/rabbit, domestic fowl, crow and perch (Table 9).

<b>Taxa</b>	<b>Medieval (12th-15th)</b>	<b>Post-medieval (mid-16th-mid 18th)</b>
Cattle	10	69
Sheep/Goat	1	100
Sheep	2	22
Pig	1	29
Horse	1	8
Fallow Deer		1
Leporid		1
Large Mammal	5	121
Medium Mammal	5	59
Domestic Fowl	3	11
Crow		2
Bird	1	1
Perch		1

Table 9: NISP (Number of Identified Specimens) counts

The majority of the bone derives from post-medieval contexts with the bulk of the assemblage deriving from two ponds (Pond A and Pond B). The medieval assemblage is too small to warrant further analysis though the post-medieval bone has the potential to answer a number of important research aims. An examination of element representation and butchery marks will shed light on

the function of the ponds whilst local husbandry techniques may be inferred by examining the relative frequency of both domestic and wild species. Information regarding age-at-death will be obtained from tooth eruption and wear as well as epiphyseal fusion data. The assemblage contains a number of measurable bones which will provide withers heights.

**6.10.2 Further work**

A small number of mammal, bird and fish bones were retrieved from soil samples and these will need to be identified and analysed alongside the hand-collected material prior to the writing of a publication report.

**6.11 Shell** by Trista Clifford

6.11.1 A total of 573 fragments of marine mollusc weighing just under 4.2kg was hand collected from twenty separate contexts. Small amounts were also collected from the bulk environmental samples. Rapid assessment and recording of the assemblage on pro forma archive sheets and Excel was undertaken.

6.11.2 Four different edible species are represented: Edible oyster (*Ostrea edulis*), Common cockle (*Cerastoderma edule*), Common mussel (*Mytilus edulis*) and Common whelk (*Buccinum undatum*). Table 10 shows an overview of the assemblage by ceramic phase/ minimum number of individuals (MNI). Edible oyster is the most numerous species by both MNI and weight. The sample retained displays evidence of parasitic activity and of overcrowding; juvenile examples are noticeably present in the larger groups.

Species	Ceramic Phase										Total
	M 1	M 2	M 3	M 5	PM 1	PM 2	PM 3	PM 5	MO D	Undat -ed	
<i>Ostrea edulis</i>	1	6	24	10 9	42	10		23	7	11	233
<i>Cerastoderma edule</i>		1	3	8	5	1		3	4	1	26
<i>Mytilus edulis</i>	2	1	5	19	15		1	5		1	49
<i>Buccinum undatum</i>									1		1
<b>Total</b>	3	8	32	13 6	62	11	1	31	12	13	309

Table 10: Shell MNI per species, by ceramic phase

**6.12 Registered Finds** by Trista Clifford

A total of sixteen Registered Finds were recovered, predominantly from the fills of Ponds A and B. Registered finds are washed, air dried or cleaned by a conservator as appropriate to the material requirements. Objects have been packed appropriately in line with IFA guidelines (2001). All objects are assigned a unique registered find number (RF<00>) and recorded on the basis of material, object type and date (shown in Table 2). Stone Registered finds are reported on separately.

Il finds were assessed for conservation requirements. Registered finds <6>-<16>were x-rayed by the Conservation department at Fishbourne Roman Palace. As a result, RF<11> and <16> were deaccessioned. Unless indicated



in the relevant section no further conservation for stabilisation or analytical purposes is required. Metal work is boxed in airtight Stewart tubs with silica gel. The registered finds assemblage is summarised in Table 11, below:

<i>RF</i>	<i>Context</i>	<i>Type</i>	<i>Date</i>	<i>Object</i>	<i>Material</i>	<i>Period</i>
1	1	U/S	-	COIN	SILV	PMED
2	1	U/S	-	TOKEN?	LEAD	PMED
3	1	U/S	-	WAST	LEAD	PMED
4	47	Fill Pond A	18th	PIN	COPP	PMED
5	50	Fill Pond A	15-16th	COIN	LEAD	PMED
6	56	Fill Pond B	13-14th	HING	IRON	MED-PMED
7	1	U/S		TOOL	IRON	PMED
8	48	Fill Pond A	15-16th	CHAP	COPP	PMED
9	57	Fill Pond B	16-17th	SPUR	IRON	PMED
10	50	Fill Pond A	15-16th	KNIF	IRON	PMED
12	56	Fill Pond B	13-14th	TOOL	IRON	MED-PMED
13	55	Fill Pond A	17th	HOOK	IRON	PMED
14	57	Fill Pond B	16-17th	KNIF	IRON	PMED
15	57	Fill Pond B	16-17th	UNK	IRON	PMED
17	64	Fill Pond B	E-M 15th	HOOK	COPP	PMED
18	57	Fill Pond B	16-17th	PIN	COPP	PMED

*Table 11: Registered Finds*

The assemblage covers a number of functional categories. Finds are discussed within their functional category in chronological order.

### **6.12.1 Dress accessories**

#### Pins

Two pins were recovered. RF<18> recovered from pond fill [57] consists of a small section from the shaft of a copper alloy dress pin. The pin could date between 16th-19th century. RF<4> is the spring from a large copper alloy wire 'safety' type pin of late post medieval date. The catch is now missing but would have been a composed of simple hook.

### **6.12.2 Fixtures and fittings**

#### Hinge

Pond B, fill [56] contained a shaped iron plate, possibly one wing of an iron pinned butterfly hinge (RF<6>). This fairly small example (L51mm) could have been utilised on an item of furniture. Similar hinges recovered from, for example, Ospringe and Stonar (Goodhall 2011 Fig 9.21 H460 and H470) are of 13th-16th century date; larger examples from London are of 16th century date (Egan 2005, 68).

### Curtain hook

A single copper alloy curtain hook, RF<17> came from Pond B fill [64]. This type of hook is of 13th-15th century date (Egan 1998, 62).

### **6.12.3 Knives**

Pond A fill [50] contained RF<10>, an iron scale tanged knife fragment. Both the handle and blade are incomplete, however the x-radiograph revealed an inlaid non-ferrous cutlers mark on the blade in the shape of an anvil. An iron shoulder plate attached with a single rivet is also evident. Parallels exist from London dating to the late 14th century (Cowgill *et al* 1998, 64.122)

A later iron knife, RF<14>, was recovered from Pond B fill [57]. A lack of makers mark, together with solid bolster/ whittle tang construction, suggests a 16th-17th century date (Brown 2001, 69; 79 fig.a-c).

An unstratified bladed tool, RF<7> is possibly a knife. It is highly corroded and the x-ray sheds little light on its' form beyond the suggestion of a blade and ?tang.

### **6.12.4 Domestic equipment**

#### Swivel hook

Pond A fill [55] contained a fairly large (L105mm) iron hook with expanded terminal from a swivel mechanism. Comparable examples of 13th and 15th century date (Goodhall 2001, J262 and J263) are described as being used for cauldron suspension or as cart/ plough shaft fittings.

### **6.12.5 Tools**

A possible spud or reamer was recovered from Pond B fill [56], RF<12>. The object measures 104mm in length with a subrectangular section at one end and flat rectangular section at the 'blade' end. The form is unclear from the x-ray but the object appears to be a fragment.

### **6.12.6 Coins**

A silver groat of Edward III (1327-77) to Richard III (1483-85) was recovered unstratified (RF<1>). The coin is in very poor condition with both faces virtually illegible. Further research should enable the coin to be dated more precisely.

Pond A fill [50] contained a lead token/ ?contemporary copy of a silver groat (RF<5>). The 'coin' copies the shield over long cross groats issued by Henry VII (1485-1509) to Edward VI (1547-1553); the obverse bust is very crude and the legend clipped.

### **6.12.7 Horse equipment**

RF<9>, an iron rowel spur, was recovered from Pond B fill [57]. The spur is straight necked with the branches terminated by breaks (total L110mm). The rowel has six points, two of which are broken. Similar examples from Castle Rising (Morley *et al* 1997, 96) and London (Egan 2005, 1053 and 1054) are of 16th -17th century date.

### **6.12.8 Arms and Armour**

#### Chape

A fragmentary folded sheet copper alloy chape (L42mm) with single rivet in situ, RF<8>, came from Pond A fill [48]. Similarly roughly made chapes of 13th-14th century date were found at Castle Rising Castle (Morley *et al* 1997, Fig 59); later examples come from London (Egan 2001, 192-3).

### 6.12.9 Other finds

#### Token

cast lead ?token, RF<2>, was recovered unstratified. The object consists of an incomplete circular plaque measuring 41.1mm in diameter. Approximately 60% of the object remains. One face depicts a ?figure holding a crozier; the other a mitre surrounded by a simple foliate motif (possibly palm leaves). The foliate motif is also depicted either side of the remaining legend which reads E[--]M[--E]: . The token may be associated with the shrine of St. Etheldreda, or with the Cathedral.

#### Waste

A rectangular strip of lead with a circular perforation, RF<3> is probable waste. The object is unstratified and not inherently dateable.

#### Unidentified

A curved iron plate measuring 82x58mm with a circular recess in one long edge was recovered from Pond B fill [57]. The fragment appears to be part of a larger object however this object remains unidentified.

## 6.13 Environmental samples by Karine Le Hégarat

### 6.13.1 Introduction

In total, ten bulk soil samples with individual volumes of 30 to 100L were collected to establish the presence of environmental indicators such as wood, macroplant remains, bones and shells. Samples were processed by the then ECC FAU in a flotation tank and the residues and flots were retained on 500 and 300µm meshes and air dried. Sub-samples of between approximately 10 and 33L were retained from each deposit for further potential analytical work. The dried flots as well as the plant remains, bones, shells and non- organic material extracted from the residues were subsequently assessed by ASE. The material originated principally from two ponds with five samples coming from Pond A (context [52]) and four samples from Pond B (context [66]). An additional sample was extracted from layer [63]. While the latter deposit is currently undated, both Ponds A and B contained pottery assemblages ranging in date from the medieval to the post-medieval period (Table 12). This assessment aims to ascertain the potential of the samples in providing information about the economy of the site and the diet of the population as well as the past vegetation and aspects of human activities in the vicinity of the ponds.

Context / deposit type	Context type	Provisional date	Context	Parent context	Sample Number	Sample Volume litres	Sub-Sample Volume litres (approx.)
Pond A	F	Early/mid 18thc.	47	52	3	30	20
Pond A	F	Late 15th-mid 16th c.	48	52	4	30	20
Pond A	F	Late 15th-mid 16th c.	50	52	5	30	20
Pond A	F	Late 15th-mid 16th c.	58	52	7	30	20

Context / deposit type	Context type	Provisional date	Context	Parent context	Sample Number	Sample Volume litres	Sub-Sample Volume litres (approx.)
Pond A	F	Currently undated	59/60	52	8	100	66
Layer	L	Currently undated	63	63	9	30	20
Pond B	F	Mid 16/17th c.	57	66	12	30	20
Pond B	F	Currently undated	67	66	13	30	20
Pond B	F	Early/mid 15thc.	64	66	14	30	20
Pond B	F	Currently undated	65	66	15	100	66

Table 12: Bulk soil sample provenance, size and provisional dating

### 6.13.2 Methodology

All the dried flots were measured and weighed before being scanned under a stereozoom microscope at x7-45 magnification and an overview of their contents recorded (Appendix 4). The organic and non-organic remains from the residues were re-bagged, weighed and their contents recorded (Appendix 5). Preliminary identifications of macrobotanical remains have been made with reference to modern comparative material and taxa documented in reference manuals (Cappers *et al.* 2006, Jacomet 2006, NIAB 2004). Abundance, diversity and preservation of the macrobotanical have been recorded to establish their potential for further analysis. Nomenclature used follows Stace (1997).

### 6.13.3 Results

Overall, sampling produced small flots (ranging in size from 5ml to 40ml), with only two flots measuring over 60ml. A total of ten samples were assessed: a sample from layer [63] and nine samples from two ponds (five samples from successive sedimentary deposits in Pond A and four samples from successive sedimentary deposits in Pond B). Sampling produced two types of botanical remains. It produced a small amount of charred remains which are likely to have been dumped with the settlement waste. It also produced a large quantity of uncharred macroplants which relate mainly to the past local vegetation.

#### Artefacts

The residues contained a wide range of artefacts. Appendix 5 lists the material recorded in each sample. Artefactual remains were present in each deposit although they were far less numerous in the primary fills of the ponds and in layer [63]. Nonetheless, primary fill of Pond A produced a tile fragment which may be suitable for dating the deposit. The remains indicate the presence of industrial waste, building material demolition debris as well as general domestic refuse (pottery, clay pipes, glass, CU pin, nails, metal objects including a hook). Coal was recorded in four samples including the lower fill (65) of Pond B. The artefacts and the coal collected from the samples have been included in the relevant specialist reports.

#### Faunal remains

A wide range of faunal remains were present in the samples. Unburnt and burnt mammal bones were recorded in all the samples. Bones were

particularly numerous in the residues from sample <05> (Pond A) and samples <13 and 14> (Pond B). All the samples produced small quantities of fish remains. Marine molluscs were present in varying quantities in all the samples except in the lower fill of Pond B (sample <15>). Fill (64) in Pond B and fill (50) in Pond A produced moderate quantities of marine mollusca. All the samples apart from sample <14> fill (64) Pond B contained small to moderate amounts of land snail shells. Insect remains were evident in small quantities in four flots. The bones (mammal and fish bones) as well as the marine molluscs have transferred to the relevant specialists (see sections 6.10 and 6.11).

#### *Charcoal and uncharred wood*

Charred wood fragments were recorded in each sample. The remains were generally uncommon and very fragmented, but sample <14> taken from secondary fill (64) in Pond B produced a larger assemblage of charcoal including pieces >20mm in size. The charcoal in sample <14> was poorly preserved as a result of sediment percolation and concretion, and therefore no identifications have been obtained. Sediment particles within the charcoal fragments suggest fluctuations in water level and indicate that Pond B might have been periodically dried out. Uncharred wood were also recorded, although they very occasionally reached a size exceeding 4mm. Slightly larger fragments were noted in the secondary fill (58) of Pond A (sample <07>). Overall uncharred wood fragments were uncommon and mainly restricted to degraded wood debris.

#### Charred macroplants

Charred crop remains were present in only low numbers in five deposits. No charred crop remains were evident in layer [63], and while they occurred only in the uppermost fill (47) sample <03> of Pond A, they were recorded in all the deposits of Pond B. Four of these five samples contained less than 10 crop remains and sample <14> was slightly richer (between 15 and 20 items). The remains tended to be abraded. The assemblage comprised several indeterminate cereal (Cerealialia) grains as well as occasional charred grains of hulled barley (*Hordeum vulgare*) and wheat (*Triticum* sp.) some of which displayed a round appearance typical of free-threshing wheat (bread or rivet wheat). No chaff was present. A small amount of cultivated pulses was recorded in the residues from samples <14> and <12>. The small assemblage comprised Celtic / broad (*Vicia faba*) beans and large seeded vetch / bean / pea (*Vicia / Pisum* sp.) >5mm. Two small charred hazel (*Corylus avellana*) nutshell fragments in sample <14> could provide evidence for the use of wild food. Charred weed seeds were present in very small quantities in six samples including possible oat (cf. *Avena* sp.), bedstraw (*Galium* sp.) and grass (Poaceae) caryopses.

#### Uncharred macroplants

Uncharred macroplant remains were recorded in low to very high concentration in each sample. They were more commonly found and more varied in the lower deposits of each ponds than in the upper fills, and they were only occasionally found in layer [63]. The uncharred macroplant remains originate from plants associated with a number of habitats including wetland environments (true aquatic and damp grassland) as well as disturbed ground and waste places, and woodland / hedgerows / shrubs environments.

Seeds of true aquatic plants were recorded in four samples. They were numerous in the basal fill (context (65) sample <15>) of Pond B and in the basal and primary fills (contexts (59/60) sample <08> and (58) sample <07> respectively) of Pond A. They were also recorded in layer [63], but more sporadically. The assemblage comprised seeds of crowfoot (*Ranunculus* subg. *Batrachium*), duckweed (*Lemna* sp.), horned pondweed (*Zannichellia palustris*), water-plantain (*Alisma plantago-aquatica*) and pondweed (*Potamogeton* sp.). The small aquatic plant, duckweed (*Lemna* sp.) is mainly associated with mesotrophic to eutrophic standing water, and it can be found in ponds, ditches and canals. Varying quantities of Cladoceran ephippia (water flea egg cases) were present in three of these flots (<07, 08 and 15>).

The same four deposits (65) <15>, (59/60) <08>, (58) <07> and (63) <09> contained seeds indicative of wet grassland/bankside and marshy grounds. Taxa so far identified include celery-leaved buttercup (*Ranunculus sceleratus*), marsh dock (*Rumex palustris*), marsh-marigold (*Caltha palustris*), walters thistle (*Carduus crispus*), hemp-nettle (*Galeopsis* sp.), ragged-robin (cf. *Silene flos-cuculi*), (sedges (*Carex* sp.) as well as meadow / creeping bulbous buttercups (*Ranunculus acris* / *repens*). The later were also present in low number in sample <04> Pond A. Celery leaved buttercup (*Ranunculus sceleratus*) is mostly common in and by slow streams and ditches and shallow ponds of mineral rich water with a muddy bottom (Clapham *et al.* 1952, 93).

Seeds from plants typical of disturbed grounds, cultivated places and drier grassland were also numerous and varied. They were found in most deposits. The assemblage comprised knotgrass / dock (*Polygonum* / *Rumex* sp.), thistles (*Carduus* / *Cirsium* sp.), buttercups (*Ranunculus* sp.), walters thistle (*Carduus crispus*), hawk's beard (cf. *Crepis* sp.), cut-leaved crane's-bill (*Geranium* cf. *dissectum*), nightshades (*Solanum* sp.), wild carrot (cf. *Daucus carota* ssp. *carota*), chervils (cf. *Anthriscus* sp.), bur chervil (*Anthriscus* cf. *caucalis*), sow-thistle (*Sonchus* sp.), pignut (*Conopodium majus*), dandelions (*Taraxacum officinale*), sun spurge (*Euphorbia helioscopia*) as well as seeds from the dead nettle (Lamiaceae) and carrot (Apiaceae) families.

In addition, seeds from plants which grow in disturbed habitats and nitrogen-rich soils and which are characteristic of settlements, abandoned fields, manure, stagnant ditches and muddy ponds were recorded. These included nettle (*Urtica* sp.), fat-hen (*Chenopodium album*), goosefoot (*Chenopodium* sp.) and hemp-nettle (*Galeopsis* sp.). Woody seeds of elderberry (*Sambucus nigra*) and blackberry/raspberry (*Rubus fruticosus* agg. / *idaeus*), which are also commonly associated with nitrogen-rich environments, were commonly found. Their presence suggests wood margins or hedgerows in the proximity of the ponds and layer [63]. Seeds of elderberry and blackberry/raspberry may also represent debris from food collected in the wild. In addition uncommon fruits of birch (*Betula* sp.) were evident in two samples.

#### 6.14 Overview

Both finds and environmental material recovered from the site constitute relatively large and significant assemblages which provide important information regarding the chronology and nature of the use and disuse of the two ponds. Seemingly comprising both domestic occupation and demolition

debris, the collective finds give insights into land use activity in close proximity to the ponds and potentially also further afield in Ely in the form of clearance of buildings of medieval date. Significant quantities of plant macrofossil remains have been obtained from well-stratified fill sequences within the ponds and contribute to the understanding of the local environment contemporary with their lifespans. Indeed, potential for additional analyses has been identified for a number of finds and environmental assemblages which will further advance site interpretation. Such further analytical work is specified in section, 7 below.

## **7.0 POTENTIAL AND SIGNIFICANCE OF RESULTS**

### **7.1 Realisation of the original research aims**

7.1.1 In exposing and investigating larger parts of the two major cut features identified by evaluation in 2008, the excavation has established that they are unlikely to constitute parts of a moated enclosure but are instead very probably a pair of interconnected ponds. Greater insights into their form and, to a limited extent, their use have been gained. The identification and sampling of both primary use and secondary disuse/infill deposits within the ponds has established the general chronology and nature of deposition within the ponds and has supplied insights into the contemporary environment. The other recorded remains are both stratigraphically and chronologically divorced from the ponds, but provide some limited insights into late post-medieval site use. This said, the potential for further clarity on site chronology, land-use and general siting within its wider urban setting through additional historic documentary research has been identified. Most significantly, the late 15th/early 16th century Priory rentals may even specifically identify the land holding and ponds themselves.

### **7.2 Significance and potential of the individual datasets**

#### **7.2.1 *The Stratigraphic Sequence***

Clearly, the two ponds and their contents are of primary significance. They contain stratified deposits which define both phases of use accumulation and disuse infilling, as well as final levelling. Original function, perhaps as ornamental or fish ponds, is as yet unclear, as is the manner in which they relate to the local hydrological system (e.g. spring fed?). However, they were linked by gully [71] and evidently positioned within the local topography so that one flowed into the other – Pond A being at a higher elevation than Pond B.

The nature of deposition within the ponds is worthy of further consideration. While artefacts such as pottery, bone, shell and registered finds are likely to be contemporary, the apparent residuality of the majority of the brick and tile, and presumably stone, suggests that as well as the disposal of domestic debris material deriving from the demolition and clearance of buildings of apparent medieval origin was also being deposited.

#### **7.2.2 *Documentary research***

Preliminary search of readily available primary and secondary sources has identified documentary sources which allude to the near vicinity of the site and possibly to the ponds themselves. Further consultation of secondary

sources on the medieval and post-medieval development of Ely will likely provide an enhanced picture of the site in its urban setting (e.g. Holton Krayenbuhl 2011). In particular, study of historic mapping held by the Cambridgeshire Record Office may help recreate the former layout of land holdings and chart changes in land-use through time. A search of diocesan records held at the Cambridge University Library may identify documentary sources that allude to the Lisle Lane vicinity – particularly as priory rentals mention that the ‘lord bishop’s vineyard’ lay to the west of William Rudson’s orchard and ponds. Examination of diocesan records may also give some insights into the chronology construction and demolition of the more important brick and masonry buildings of Ely owned by the church. This might provide some hints as to the possible source(s) of debris deposited within the ponds and help clarify the chronology of their infilling. Finally, documentary mention of such matters as diet and victualing supplies to the priory might help interpret the nature and function of the orchard and its ponds – the latter potentially being fish ponds – and may aid the interpretation of the faunal and plant macrofossil analyses results.

### **7.2.3 Medieval and Post-Medieval Pottery**

The assemblage is nearly all somewhat fragmented, and the chronology of the individual groups suggests that activity at the site was somewhat sporadic. A few unusual sherds were present, such as a fragment of an imported Langerwehe mug, a bodysherd of French or German White Ware, and a sherd from a Cistercian Ware cup decorated with a human face rendered in applied white slip. A few other sherds are likely to be worthy of illustration.

### **7.2.4 Glass**

The early post-medieval glass assemblage is small and fragmentary, lacking complete profiles for the bottles. However, it does contribute to the dating evidence. Of importance are the two high status tableware fragments, at least one of which represents an import, either from Venice, or one of the many centres across Europe adopting the *façon de Venice*. Further research on these will establish their date as well as origin, thereby shedding light on tastes and status of their users.

The late post-medieval assemblage lacks intrinsically interesting pieces and is too small to be of any potential for further analysis.

### **7.2.5 Clay Tobacco Pipe**

The clay pipe assemblage contributes to the dating evidence. Other than that, however, the assemblage is small, lacking intrinsically significant pieces. Of interest are the relatively large number of “seconds” combined with the two fragments of definite kiln waste. Although only a very small amount of waste is present, it does indicate a nearby clay tobacco pipe kiln. Several makers were operating from Ely, though few known makers were working in the given period. Establishing the likely origin of this kiln waste, if possible, may contribute to the understanding of the Ely clay tobacco pipe industry.

Further research on the maker’s initials may identify the makers, thereby adding to the database of Ely makers. In addition, the pipes should be viewed within the context of site history, combined with data from other finds, to establish the role of the pipes as well as the status of site occupants.



### **7.2.6 Ceramic Building Material (CBM)**

The medieval CBM assemblage provides broad dates for the features in which it occurs. The assemblage contains items of relatively high status which may provide information on the nature and dating of high-status structures in medieval Ely. The imported Flemish bricks, floor tiles and pantile in the assemblage could provide information on trading patterns between Ely and the Low Countries.

The post-medieval assemblage has some regional and local significance as it provides information on the structures and dating of a medieval possibly monastic, building or buildings in Ely.

### **7.2.7 Geological Material**

The stone assemblage from the site is fairly small but does include a relatively diverse range of types, particularly considering the town's geologically isolated position. Some of the material has been deliberately imported for use in construction whilst other more specialised types were imported for milling, sharpening and fuel. Although these shed light on various activities there is potentially some problem with residuality. All of the worked pieces are from very late medieval or, more commonly, early post-medieval deposits. However, a number of items are almost certainly residual medieval pieces suggesting that the ponds may have received a somewhat chronologically mixed array of finds during their backfilling. An initial scan of published and on-line reports during this assessment has noted either no, or scanty, consideration of excavated stone from Ely and, as such, no assemblages have yet been found for comparative purposes.

### **7.2.8 Iron nails**

The iron nails have been recorded on pro forma archive sheets and an Excel spread sheet. The assemblage is small and not particularly varied, therefore no further publication report is proposed.

### **7.2.9 Fired clay**

The fired clay assemblage is very small, deriving from only one context. It has no diagnostic features. No further work is proposed.

### **7.2.10 Metallurgical Remains**

The metallurgical remains show very limited iron smithing was occurring in the vicinity of the site at an uncertain date and waste from burning coal was quite common in the post-medieval period. Neither fact is of particular relevance as both activities are common on most sites at a domestic level. As such the assemblage does not warrant any further work and the material is recommended for discard.

### **7.2.11 Leather**

The leather has been recorded for the archive. Due to the small size of the assemblage and lack of diagnostic features no publication report is proposed. It is recommended that the leather be discarded following publication.

### **7.2.12 Mammal, bird and fish bone**

The medieval assemblage is too small to warrant further analysis though the post-medieval bone has the potential to answer a number of important research aims. An examination of element representation and butchery marks will shed light on the function of the ponds whilst local husbandry techniques

may be inferred by examining the relative frequency of both domestic and wild species. Information regarding age-at-death will be obtained from tooth eruption and wear as well as epiphyseal fusion data. The assemblage contains a number of measurable bones which will provide withers heights. A small number of mammal, bird and fish bones were retrieved from soil samples and these will need to be identified and analysed alongside the hand-collected material prior to the writing of a publication report.

### **7.2.13 Shell**

The retrieved shell assemblage is too small to warrant further analysis and no publication report is proposed. Factual information for the site narrative may be drawn from this report (section 6.11).

### **7.2.14 Registered Finds**

The Registered Finds assemblage represents a range of functions and activities primarily of 15th-16th century date. The assemblage is of local significance, although lead token RF<2> may yet prove to be of wider significance. It is recommended that further research be carried out into this object and the coins in particular in order to identify the token and refine date of issue of the coins.

It is intended that a catalogue is produced for publication. However, the majority of finds are well dated and paralleled types. Further research into RFs <1>, <2> and <5> will be carried out and be included in an updated summary report from which information for the site narrative can be drawn.

No further conservation is required. Up to 5 objects are suitable for illustration.

### **7.2.15 Environmental Sample Remains**

#### Preservation and provenance

This assessment has confirmed the presence of environmental remains including macroplant material, wood, vertebrates as well as invertebrates. A small amount of plant remains was preserved through carbonisation and while no botanical remains were preserved through mineralisation, a substantial amount of remains were uncharred (principally seeds). Uncharred remains can be preserved in anoxic conditions or by waterlogging. Samples from both primary fills of each pond (<08> in Pond A and <15> in Pond B) and sample <09> from layer [63] were extracted from deposits described as wet, and the seeds in these samples were certainly preserved by waterlogging. However, the remaining bulk soil samples derived from deposits which were moist and not waterlogged, and it is more likely that the uncharred botanical remains in these latter samples were preserved in anoxic conditions.

Overall, the preservation was fairly good with several samples providing not only woody seeds but also more fragile seeds and fruiting structures. Overall, the quantity and range of macroplant remains were smaller in the upper fills of the Ponds (than in the lower fills). This could be due to the difference in sample size (larger samples were extracted from the primary fills) or this could be explained by conditions of preservation. While the basal fills of the ponds may have been permanently waterlogged the upper fills could have been only seasonally waterlogged, a condition which is less favourable to the preservation of uncharred botanical remains. Finally the difference could simply relate to a change in the vegetation cover within the ponds and their

surroundings. It is likely that the accumulation of waste in the ponds over a prolonged period produced an adverse effect on the natural vegetation.

Sampling has confirmed the presence of botanical remains, but it has also produced a diverse assemblage of vertebrates, invertebrates and artefact remains. These came from each sample although they were less numerous in the primary fills of the ponds. The large assemblage of domestic waste, industrial waste and building material recovered from the ponds indicates that the features were directly used for the disposal of settlement waste; and the infrequent charred macroplant remains and the charcoal found in samples are likely to represent material dumped with the rest of the settlement debris.

#### Diet of the population

Although both ponds and layer [63] seem to contain domestic waste, evidence for diet of the population is very scarce. Nonetheless, fruits and nuts collected from the wild (elderberry (*Sambucus nigra*), blackberry/raspberry (*Rubus fruticosus* agg. / *idaeus*) and hazel (*Corylus avellana*)) could provide evidence for diet. Grains of wheat including possible free-threshing wheat, barley and possible oat as well as leguminous seeds provide evidence for the use of crops. There was no evidence of chaff. Celtic / broad beans were recorded in the assemblage of large pulses which may also contain garden pea, vetches and other beans. Charred crop remains were infrequent and poorly preserved. The cereals and leguminous crops could have been used for human consumption or as fodder. Excavation at the Ashwell Site (West Fen Road, Ely) has produced larger assemblages of cereal crops (Ballantyne 2005). The remains from Lisle Lane are very scarce, and they are therefore unlikely to add significant information regarding diet and the range of crops used by the town dwellers.

#### Uncharred plant remains

Several samples produced significant assemblages of uncharred macroplant remains. High taxa diversity was principally recorded in the lower fills of the ponds. The majority of the uncharred plant remains seems to relate to the natural vegetation growing either within the ponds or in the area around the ponds. Although the material appears to relate mostly to the natural infilling of the ponds, uncharred seeds of elderberries and blackberry / raspberry could represent remains of fruits eaten by the town dwellers. Overall remains were relatively well preserved, and both sequences have the potential to reconstruct the development of the natural vegetation environment. The taxa so far recorded indicate that natural vegetation was originally thriving within both ponds and that the areas surrounding both features were mostly wet rough grassland and disturbed ground. It seems that over time, wetter conditions diminished and the whole area dried out.

Further work is recommended for the uncharred macroplants from both sequences. Analysis will include examination of the flots to retrieve more species, confirmation and refinement of the preliminary identifications made during assessment, creation of a full species list and preparation of a summary. Uncharred macroplants in the samples from Lisle Lane have the potential to provide useful information regarding the environmental history of the site. However, the data will only be useful if the development of the pond deposits is properly dated. Sub-samples of between approximately 10 and 33 litres were retained from each deposit for further potential analytical work. It is

not recommended to process these sub-samples because they are likely to be contaminated and they are unlikely to increase species diversity.

#### Charcoal

On the whole the charcoal assemblages from the site were small and poorly preserved. The fragments are likely to represent domestic or industrial fuel waste deposited in the ponds with the rest of the settlement debris. Given the overall scarcity and poor preservation of the charcoal these samples hold little potential to characterise fuel use or acquisition and woody vegetation in the vicinity of the ponds.

No further work is proposed for this small assemblage.

## **7.0 PUBLICATION PROJECT**

### **7.1 Revised research agenda: Aims and Objectives**

7.1.1 This section combines those original research aims that the site archive has the potential to address with any new research aims identified in the assessment process by stratigraphic, finds and environmental specialists to produce a set of revised research aims that will form the basis of any future research agenda. Original research aims (OR's) are referred to where there is any synthesis of subject matter to form a new set of revised research aims (RRA's) posed as questions below.

7.1.2 RRA 1: To analyse and understand the use and disuse of the ponds, their origins, chronology, form and function.

7.1.3 RRA 2: To place the ponds in their historic land-use setting, particularly in relation to the development of urban Ely.

7.1.4 RRA 3: To understand the post-pond site use.

7.1.5 RRA 4: To understand the depositional processes within the ponds with reference to their artefact assemblages, in order to further understand site function and status, but also to infer wider occupation activity within his part of Ely (especially material deriving from medieval building demolition).

7.1.6 RRA 5: To understand the depositional processes within the ponds with reference to their environmental assemblages, in order to further understand their function and surrounding environment.

### **7.2 Preliminary Publication Synopsis**

7.2.1 It is proposed that the results of the excavation are published as a shorter note in the *Proceedings of the Cambridge Antiquarian Society*.

7.2.2 The article would seek to address site-specific research questions identified in this post-excavation assessment (section 7.1) and would be presented within a chronological framework.

7.2.3 It is envisaged this reports would present a detailed chronological narrative of the site sequence, attempt to address the questions posed in the revised research agenda and would pursue the following suggested structure:

- Introduction
- Natural geology, topography and environment
- Pre-pond remains
- Ponds use (medieval)
- Ponds disuse (early post-medieval)
- Post-pond remains (late post-medieval/modern)
- Specialist sections (finds and environmental)
- Discussion and conclusion
- Bibliography

7.2.4 A provisional page count, for text, figures and tables/plates, is presented as Appendix 7.

### **7.3 Publication project**

The various further analytical and reporting tasks required to bring the project results to publication are identified below, and summarised in Appendix 8 which includes proposed time allocation.

A programme will be submitted to the Cambridgeshire HE team on acceptance of this assessment and proposal.

#### **7.3.1 Stratigraphic Method Statement**

- Creation of an integrated period-driven narrative of the site sequence will be prepared. This will draw on specialist information in order to fully address the revised research aims.
- Selection of relevant period/phase plans, sections, photographs and finds illustrations and liaison with illustrator during production.
- Additional documentary and cartographic research
- Integration of finds reports into overall publication text, and liaison with finds specialists
- Writing of discussion text. This will seek to place the site-specific results in their wider context of historic Ely.

#### **7.3.2 Medieval and Post-Medieval Pottery**

- Discussion of the pottery by ceramic phase
- Selection of sherds for illustration (6–10 drawings probably required) and catalogue

#### **7.3.3 Glass**

The assemblage is already fully recorded. It is proposed to produce a short summary report on the early post-medieval assemblage, largely drawing from the above statement (section 6.2).

- Further regional/national research into the early post-medieval vessel glass
- Search for parallels to establish their relative rarity/significance.
- No further work is required on the late post-medieval assemblage.
- Up to two fragments are recommended for illustration.

#### **7.3.4 Clay Tobacco Pipe**

The clay pipe assemblage has been recorded in full. It is proposed to produce a short summary report, based largely on the above statement (section 6.3)

and supplemented with the contextualisation of the group based on the site history as well as current site and finds data.

- Further research to establish the contemporary known kilns of Ely as well as any archaeological evidence.
- In addition, it will be attempted to establish the identity of the makers.
- Up to three pieces are recommended for illustration.

### **7.3.5 Ceramic Building Material (CBM)**

- Final phased stratigraphic information to be combined with building materials data
- Analysis of the assemblage by phase and group
- Writing of the publication report text.
- Three pieces are identified for illustration.

### **7.3.6 Geological Material**

It is proposed that some limited further analysis is done on the stone assemblage in an attempt to set it in a firmer geographical and chronological context. Three tasks are proposed:

- Check the likely sources of some of the stone types with a local geologist
- Establish if there are any comparable published groups of stone from the town and assess the residuality of the current assemblage
- Integrate the findings from Tasks 1 and 2 into the archive and above factual statement (if warranted) to produce a final summary publication text

### **7.3.7 Mammal, bird and fish bone**

- Identification and analysis of bones retrieved from soil samples
- Integration of the soil sample data with the hand-collected material
- Analysis of element representation and butchery mark data
- Consideration of animal husbandry indicators (age/sex/sex data, etc)
- Publication report writing.

### **7.3.8 Registered Finds**

- Further research on RF<2> and the coins
- Produce publication catalogue
- Further research into RFs <1>, <2> and <5>
- Write summary publication report text
- Up to 5 objects are suitable for illustration

### **7.3.9 Environmental Samples**

Further work is recommended for the uncharred macroplants from both pond sequences. Analysis will include:

- examination of the flots to retrieve more species, confirmation and refinement of the preliminary identifications made during assessment (3 days)
- ID and analysis and creation of a full species list (2 days + travel)
- Writing of a summary publication text (2 days)

### **7.3.10 Illustration**

- Production of plan and section figures to support background and site narrative texts (2 days)
- Formatting of max 2 photo images (0.25 days)

- Finds illustration (2.5 days):
  - max. 10 medieval and post-medieval sherds
  - max. 2 glass fragments
  - max. 3 clay tobacco pipe fragments
  - max. 3 CBM fragments
  - max. 5 registered finds

#### **7.3.11 Editing and Production**

Once the publication draft has been produced/collated, internal editing will be undertaken by the project manager, and any necessary amendments made, prior to submission of the completed draft to the editor of the *Proceedings of the Cambridge Antiquarian Society*.

#### **7.4 Artefacts and Archive Deposition**

- 7.4.1 The site archive is currently held at the offices of ASE. Following completion of all post-excavation work, including any publication work, the site archive will be deposited at the Cambridgeshire County archive store.

#### **ACKNOWLEDGEMENTS**

ASE would like to thank Aldi and their agent, the Harris Partnership, for commissioning the work and for their assistance throughout the project. Kasia Gdaniec of the Cambridge County Council Historic Environment Team is also thanked for her guidance and monitoring. The excavation was directed by Mark Germany. The author would like to thank all archaeologists who worked on the excavations. Andrew Lewsey produced the figures for this report, Adrian Scruby project managed the excavation and Mark Atkinson project managed the post-excavation process and carried out the post-excavation assessment.

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## Appendix 1: Context list

Context	Type	Description	Period
1	Artefacts	Unstratified surface finds	Unstrat
2	Layer	Surface deposit. Unex. Natural?	-
3	Fill	Surface fill of pond B. Same as 56? Unex	P-med
4	Layer	Surface deposit. Unex	Med/P.med
5	Fill	Surface fill of pond A. Same as 75?	P-med
6	Fill	Surface fill of pond A. Same as 47? Unex	P-med
7	Layer	Surface deposit. Same as 36	19 cent
8	Layer	Surface deposit. Same as 49? Natural?	-
9	Pit	Filled by 10. Cuts 8	Late 17 cent +
10	Fill	Single fill of 9	19 cent +
11	Pit	Square pit. Filled by 12. Cuts 36	19 cent +
12	Fill	Single fill of 11	19 cent +
13	Pit	Filled by 14. Cuts 36	19 cent +
14	Fill	Single fill of 13	19 cent +
15	Pit	Square pit. Filled by 16. Cuts 36	19 cent +
16	Fill	Single fill of 15	19 cent +
17	Pit	Oval pit. Filled by 18. Cuts 8	19 cent +
18	Fill	Single fill of 17	19 cent +
19	Pit	Oval pit . Filled by 20. Cuts 8	19 cent +
20	Fill	Single fill of 19	19 cent +
21	Pit	Circular pit . Filled by 22. Cuts 8	19 cent +
22	Fill	Single fill of 21	19 cent +
23	Pit	Sub-square pit. Filled by 24. Cuts 32	19 cent +
24	Fill	Single fill of 23	19 cent +
25	Root hole /pit	Linear root hole. Filled by 26. Not planned	19 cent +
26	Fill	Single fill of 25	19 cent +
27	Pit	Oval pit . Filled by 28. Cuts 36	19 cent +
28	Fill	Single fill of 27	19 cent +
29	Pit	Oval pit Filled by 30 and 31. Cuts 36	19 cent +
30	Fill	Primary fill of 29. Below 31	19 cent +
31	Fill	Latest fill of 29. Above 30	19 cent +
32	Layer	0.08m thick. Above 36	19 cent +
33	Pit	Oval. Filled by 34 and 35. Cuts 8	17 cent?
34	Fill	Primary fill of 33. Below 35	17 cent?
35	Fill	Latest fill of 33. Above 34	17 cent?
36	Layer	0.08m thick. Below 32	19 cent +
37	Pit	Circular. Not excavated. Cuts 36	19 cent ?
38	Fill	Single fill of 37. Not excavated	19 cent ?
39	Pit	Linear pit. Filled by 40. Not excavated	19 cent ?
40	Fill	Single fill of 39. Not excavated	19 cent ?
41	Pit	Linear pit. Filled by 42. Not excavated. Cuts 36	19 cent ?
42	Fill	Single fill of 41. Not excavated	19 cent ?

43	Pit	Circular. Not excavated. Cuts 36	19 cent ?
44	Fill	Single fill of 43. Not excavated	19 cent ?
45	Pit	Oval. Not excavated. Cuts 36	19 cent ?
46	Fill	Single fill of 45. Not excavated	19 cent ?
47	Fill	Latest fill of 52. Above 48	E-M 18 cent
48	Fill	Penultimate fill of 52. Above 50. Below 47	Med/P.med
49	Layer	0.2m thick. Cut by 52	Med/P.med
50	Fill	Fifth fill of 52. Above 53 and 54. Below 48	L15/M16 cent
51	Fill	Duplicate number for deposit 58	L15/M16 cent
52	Cut	Pond A. Filled by 47, 48, 50, 51, 53, 54, 58, 59 and 60	Late Med
53	Fill	Fourth fill of 52. Above 58. Below 50	Late Med?
54	Fill	Fourth fill of 52. Above 58. Below 50	Late Med?
55	Fill	Latest fill of 69. not excavated	E-M17 cent +
56	Fill	Latest fill of 68. not excavated	M16-17?
57	Fill	Latest fill of 66. Above 67. Contains finds from 67	M16-17 cent
58	Fill	Third fill of 52. Above 59. Below 53 and 54	Late Med?
59	Fill	Second fill of 52. Above 60. Below 58	Late Med?
60	Fill	Primary fill of 52. Below 59	Late Med?
61	Layer	Above 62. Cut by 52. Natural?	-
62	Layer	0.28m thick. Above 63. Below 61. Natural	-
63	Layer	0.3m+ thick. Below 62. Natural	-
64	Fill	Secondary fill of 66. Above 65. Below 67	Late Med?
65	Fill	Primary fill of 66. Below 64	Late Med?
66	Pond B seg	Filled by 57, 64, 65 and 67	Late Med
67	Fill	Third fill of 66. Above 64. Below 57 (finds numbered 57 in error)	P-med
68	Pond B seg	Not excavated. Filled by 56	M16-17?
69	Pond A seg	East terminal. Not excavated. Filled by 55	E-M17?
70	Layer	0.3m thick.	Med/P.med
71	Gully	Filled by 55 and 72.	Late Med?
72	Fill	Primary fill of 71. Below 83	Med/P.Med
73	Cut	Pond A. Filled by 75, 76, 77, 78, 79 and 80. Cuts 81	Late Med
74	Artefacts	Unstratified finds from pond 73	-
75	Fill	Latest fill of 73. Above 76	E-M 18 cent?
76	Fill	Fifth fill of 73. Above 77. Below 75	E-M17?
77	Fill	Fourth fill of 73. Above 78. Below 76	E-M17?
78	Fill	Third fill of 73. Above 79. Below 77	Med/P.Med
79	Fill	Secondary fill of 73. Above 80. Below 78	Late Med?
80	Fill	Primary fill of 73. Below 79	Late Med?
81	Layer	Cut by 73. Natural?	-
82	Attenuation pit 2	Machine dug hole, 8m long, 4m wide, 0.6m deep	-
83	Fill	Latest fill of 71. Below 56	Med/P.med
84	Layer	Not excavated	Natural?
85	Fill	Probably fill of pond A	P.med
86	Attenuation pit 1	Machine-dug hole. Exposed layers 87, 88, 89 and 90	-

<b>87</b>	Layer	c.2m thick. Above 88. Natural?	-
<b>88</b>	Layer	c.0.3m thick. Above 89. Below 87. Natural	-
<b>89</b>	Layer	c.1m thick. Above 90. Below 88. Natural	-
<b>90</b>	Layer	Below 89. Natural	-

**Appendix 2: Pottery occurrence by number and weight (in g) of sherds per context by fabric type**

Ctxt	F301		F327		F401		F402		F403		F404		F405		F410		F411		F412		F413		F415		F425		F427		F428		F438		F443		F1000		Date	
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt		
1	7	182					9	286			6	35			2	43			3	35	1	4			35	442	1	1			2	21	1	2	4	6	U/S	
10																									1	4	1	1									PM4	
12							1	19																													M3	
14	1	1																1	1																1	1	MOD	
16											1	1	1	8			1	1							1	5									7	7	MOD	
18													1	1											2	17									2	2	MOD	
20	1	1					1	1											1	1															3	11	MOD	
22																									1	4	1	1							2	2		PM5
24																																				2	18	MOD
26	1	3																																				M1
28																									1	1								1	3	1	3	MOD
31																		1	1						3	24									1	16	MOD	
32											1	2	1	9				1	4						10	58	2	10							5	14	MOD	
34	1	4											1	4											8	36			2	12							PM3	
36	2	6									1	3					1	17							16	199	2	25						1	3	2	4	MOD
47	7	54			3	18	19	311	2	6	3	19	1	6	6	29	5	46	1	2	1	2			74	1307	8	58	2	12	6	15	6	32		PM5		
48	4	39			7	509	17	658			1	2	2	7																							M5	
49	8	74			2	26	2	16			1	4	2	11					3	28					34	467	1	6	2	9			1	4		PM5		
50	23	306			2	39	7	62			7	14	1	1																							M5	
51	2	12			4	28	6	191			2	8																									M5	
55	3	12					2	53			1	49	3	55			2	48					2	7	8	152										PM2		
56	6	108	2	3																																	M2	
57	1	10			4	112	67	1589	2	10			8	97					6	48			1	4	6	150										PM1		
64	1	22					11	140	5	46																											M3	
70	4	23																																				M1
72	1	4	1	3																																	M2	
74							2	109			1	13																									M5	
	73	861	3	6	22	732	144	3435	9	62	25	150	21	199	8	72	9	112	17	120	2	6	3	11	200	2866	16	102	6	33	8	36	12	46	28	82		

Sherds not included in Table:

- Context 1: F1001: 1 sherd, 13g
- Context 14: F1002, 1 sherd, 7g.
- Context 47: F301, 1 sherd, 4g.
- Context 49: F302, 1 sherd, 12g.
- Context 50: F310, 1 sherd, 8g.
- Context 51: F324. 1 sherd, 4g.
- Context 55: F335, 1 sherd, 3g.

### Appendix 3: Roof tile and brick fabrics

Roof tile fabrics:

<b>Fabric code</b>	<b>Description</b>	<b>Sample from context</b>	<b>Comment</b>
T1	Orange-red clays with calcareous marbling and common to abundant poorly-sorted calcium carbonate, some very coarse (<12mm in sample), poorly mixed with cleaner orange clay; sparse to moderate coarse quartz inclusions, <c.1 mm.	57	Most tiles fairly thick, 14-17mm. 1 from [57] is 245 x 146 x 15 mm; may have single round nail hole
T2	Fine 'clean' orange-red fabric with sparse to moderate calcium carbonate inclusions, poorly sorted but mode is med to coarse; sparse coarse quartz	57	Coarser version with more inclusions is T6
T3	Light orange or cream fabric streaked with varying amounts and sizes of calcium carbonate; sparse to moderate fine to medium quartz; sparse fine dark red inclusions. Some examples have very coarse calcium carbonate inclusions as in fabric T1	57	White surfaces; round nail hole
T4	Pale yellow to very pale brown matrix, some examples banded with orange; moderate to common fine to medium quartz, iron-rich dark red and white calc inclusions	57	White surfaces. May be paler version of T3. Round nail-holes
T5	Sandy version of T2; moderate to common quartz; most is medium grade	57	
T6	Coarser version of T2 with more voids, calcium carbonate and quartz	57	
T7	Miscellaneous sandy fabrics	57	Includes later sub-divisions – fabrics T9, T10, T11
T8	Silty orange matrix, poorly mixed with pale orange to buff clays containing fine to medium quartz and calcium carbonate; sparse very coarse quartz and calcium carbonate and very sparse iron-rich material	57	initially included with T3 (only in one bag of [57]). More orange version of T3
T9	Orange fabric with common medium quartz and sparse to moderate very coarse quartz; sparse medium to coarse dark red iron-rich material and calcium carbonate	57	initially recorded as fabric T7
T10	Orange fabric with grey to black core, common fine to medium quartz in lenses, sparse coarse quartz and calcium carbonate; some examples have less quartz and more white ?shell	57, 70	Initially recorded as 'reduced' or fabric T7 . Characterised by thick blackish core and orange surfaces
T11	Dark orange matrix, common well-rounded rose quartz <1mm (mode is medium); sparse coarse iron-rich inclusions	48	initially recorded as fabric T7

Brick fabrics:

<b><i>Fabric code</i></b>	<b><i>Description</i></b>	<b><i>Sample from context</i></b>	<b><i>Comment</i></b>
B1	Pinkish orange matrix with abundant organic voids; abundant fine to coarse and sparse very coarse inclusions of calcium carbonate	57	Flemish-type fabric
B2	Light orange fabric with streaks of cream clay; common inclusions of calcium carbonate, medium to very coarse; sparse medium quartz and dark-red iron-rich inclusions	57	Brick version of fabric T1
B3	Silty; orange matrix with yellowish streaks, poorly mixed; lenses of quartz-and iron-rich fine clay in some examples.	57	
B4	Common poorly sorted quartz and red iron-rich material, sparse calcium carbonate	57	
B5	Very fine pinkish mauve matrix with abundant silt-sized quartz and calcium carbonate; Munsell 10R 5/3 'weak red'.	57	As B1 but finer matrix; Flemish-type silt fabric.
B6	Orange fabric with abundant fine calcium carbonate inclusions.	57	Similar to B1 but orange matrix and finer calcium carbonate speckles; Flemish-type fabric
B7	Pale orange clay streaked with pale yellow ; sparse inclusions of calcium carbonate, iron rich material and very coarse pebbles/rock fragments	57	'White' brick, similar to fabric T3



#### Appendix 4: Soil Sample Flot Quantification

(\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) and preservation (+ = poor, ++ = moderate, +++ = good)

Sample Number	Context	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Insects, Fly Pupae etc min	Land Snail Shells	Industrial debris hammerscale
3	47	16	25	25	5	10	* <i>Sambucus nigra</i> , <i>Chenopodium</i> sp.	*	*	**	*	<i>Hordeum vulgare</i> , Cerealialia	+ to ++					*** 75%	
4	48	2	5	5	50	2	** <i>Sambucus nigra</i> , <i>Ranunculus acris</i> / <i>repens</i> , Lamiaceae, <i>Euphorbia helioscopia</i> , unid. seeds		*	*								*** 45%	
5	50	16	30	30	10	30	** <i>Sambucus nigra</i> , Lamiaceae, Apiaceae, <i>Urtica</i> sp., unid. seeds	*	*	*				*	cf. <i>Linum</i> sp.	++		* 50%	

Sample Number	Context	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Insects, Fly Pupae etc min	Land Snail Shells	Industrial debris hammerscale	
7	58	4	10	10	80	4	*** <i>Urtica</i> sp., <i>Rubus fruticosus</i> agg. / <i>idaeus</i> , <i>Sambucus nigra</i> , Chenopodiaceae, <i>Geranium</i> cf. <i>dissectum</i> , cf. <i>Crepis</i> sp., <i>Carduus crispus</i> , <i>Cirsium</i> / <i>Carduus</i> sp., <i>Ranunculus acris</i> / <i>repens</i> , <i>Solanum</i> sp., <i>Carex</i> sp., cf. <i>Galeopsis</i> sp., cf. <i>Anthriscus</i> sp., cf. <i>Daucus carota</i> ssp. <i>carota</i> , <i>Lamium</i> sp., <i>Conopodium majus</i> , <i>Ranunculus</i> <i>sceleratus</i> , <i>Lemna</i> sp., <i>Potamogeton</i> sp., <i>Zannichellia</i> <i>palustris</i> , <i>Polygonum</i> / <i>Rumex</i> sp., cf. <i>Silene flos-cuculi</i>			*								*	** 15%	

Sample Number	Context	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Insects, Fly Pupae etc min	Land Snail Shells	Industrial debris hammerscale	
8	59/60	34	340	100	90	4	**** <i>Alisma plantago-aquatica</i> , <i>Potamogeton</i> sp., <i>Zannichellia palustris</i> , <i>Picris echioides</i> , <i>Chenopodium album</i> , <i>Polygonum / Rumex</i> spp., <i>Cirsium / Carduus</i> sp., <i>Carex</i> spp., <i>Ranunculus</i> spp., <i>Ranunculus sceleratus</i> , <i>Anthriscus</i> cf. <i>caucalis</i> , <i>Urtica</i> sp., <i>Solanum</i> sp., Apiaceae, cf. Lamiaceae, <i>Sonchus</i> sp., <i>Taraxacum</i> sp., <i>Caltha palustris</i> , <i>Rumex palustris</i> (seeds and fruits with perianth)		*	*							*	** 5%		
9	63	4	25	25	98	2	** <i>Potamogeton</i> sp., <i>Rubus fruticosus</i> agg. / <i>idaeus</i> , <i>Chenopodium</i> sp., <i>Ranunculus sceleratus</i>													
12	57	6	10	10	50	10	* <i>Sambucus nigra</i> , <i>Euphorbia helioscopia</i> , <i>Betula</i> sp. (fruit)	*	**	**	*	<i>Hordeum vulgare</i> , <i>Triticum</i> sp., Cerealia	+ to ++	* +	<i>Galium</i> sp., Poaceae, unid. seeds	+ to ++	** 30%			

Sample Number	Context	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Insects, Fly Pupae etc min	Land Snail Shells	Industrial debris hammerscale
13	67	20	30	30	85	5	** <i>Sambucus nigra</i> , <i>Rubus fruticosus</i> agg. / <i>idaeus</i> , <i>Chenopodium</i> sp.	*	*	**	*	<i>Hordeum</i> sp., Cerealia	+ to ++	*	Poaceae	+		** 5%	
14	64	24	65	65	70	25	** <i>Sambucus nigra</i> , <i>Rubus fruticosus</i> agg. / <i>idaeus</i> , <i>Urtica</i> sp., <i>Polygonum</i> / <i>Rumex</i> sp., unid. Seeds	*	*	**	*	<i>Hordeum</i> sp., <i>Triticum</i> sp., Cerealia	+ to ++				*		
15	65	6	40	40	95	4	*** <i>Ranunculus</i> subg. <i>Batrachium</i> , <i>Alisma plantago-aquatica</i> , <i>Potamogeton</i> sp., <i>Ranunculus sceleratus</i> , <i>Carex</i> sp., <i>Ranunculus</i> sp., <i>Cirsium</i> / <i>Carduus</i> sp., cf. <i>Picris echioides</i> , <i>Chenopodium</i> sp., <i>Betula</i> sp. (fruit), unid. Seeds				*	<i>Hordeum vulgare</i>	++				*	**	

### Appendix 5: Soil Sample Residue quantification

(\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) and weights in grams

Sample Number	Context	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Ch. / unch. botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone and	Weight (g)	Marine Molluscs	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
3	47	*	<2	**	<2	Ch. *: <i>Hordeum</i> sp.	<2	**	6	*	4					*	<2	**	16	**	2	Flint */<2g - Tile **/70g - Building material **/94g - CTP */4g - Pottery */10g - Industrial debris **/12g - Coal **/20g - Mineral concretion */<2g
4	48	*	<2	*	<2			**	4			*	<2			**	<2	***	16			Pottery */<2g - Metal */2g - B. clay */<2g - Building material */4g
5	50	*	<2	**	<2			**	192	**	8	*	2			**	<2	***	102	*	<2	Tile */22g - Pottery */20g - Building material **/32g - Metal */2g - B. clay **/8g - Flint */<2g - Coal **/34g

Sample Number	Context	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Ch. / unch. botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone and <i>Vicia/Pisum</i>	Weight (g)	Marine Molluscs	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
7	58	*	<2	*	<2			**	12							*	4	**	12	**	<2	Pottery */2g - Tile */32g - Flint */<2g - Coal **/6g - B. clay **/8g - Industrial debris */2g
8	59/60	*	<2	*	<2			*	<2							**	<2	***	8	***	2	Tile */18g - Flint */<2g - Uncharred vegetation **/4g - Coal */<2g - Slag */<2g
9	63	*	<2	*	<2	Unch. *: <i>Potamogeton</i> sp.	<2	*	<2							**	<2	**	6	*	<2	Uncharred vegetation */<2g - Flint */<2g - Building material */<2g
12	57	*	<2	*	<2	Ch. *: <i>Vicia / Pisum</i> sp.	<2	**	18			*	<2			**	<2	***	66	**	<2	Tile */80g - Stone */112g - Building material **/400g - Glass */<2g - Pottery */20g - Cu pin */<2g - Industrial debris **/24g - Coal ***/12g - B. flint */<2g - Flint ***/<2g

Sample Number	Context	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Ch. / unch. botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone and marine fossils	Weight (g)	Marine Molluscs	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
13	67	*	<2	*	<2	Ch. *: <i>Hordeum</i> sp., cf. <i>Avena</i> sp., Poaceae	<2	**	76	*	<2	*	<2			**	<2	***	32	*	<2	Flint **/<2g - Tile **/396g - Pottery */16g - Mortar */64g - Building material */28g - Stone */34g - Uncharred vegetation **/<2g
14	64	***	40	**	<2	Ch. **: <i>Vicia faba</i> , <i>Vicia</i> / <i>Pisum</i> sp., <i>Hordeum</i> sp., <i>Triticum</i> sp., Cereal, Poaceae, <i>Corylus avellana</i> , culm nodes (cereals); Unch. *: unid. shell frag.; poss. mineralised *: Poaceae	<2	***	42	**	2	**	2	*	<2	**	<2	***	132			Tile */254g - Nail */30g - Pottery **/36g - Metal */24g - Building material **/196g - Metal hook */8g - Uncharred vegetation **/8g - Mineral concretion **/18g CF */10g - Flint **/30g
15	65	*	<2					*	2			*	<2			**	<2			**	2	Building material */<2g - Coal */6g - Industrial debris */<2g - Uncharred vegetation */<2g - Flint */<2g

## Appendix 6: OASIS Summary Form

<b>OASIS ID: archaeol6-158470</b>	
<b>Project details</b>	
Project name	TNS site, Lisle Lane, Ely
Short description of the project	Excavation and the archaeological monitoring recorded two ponds, a single gully, seventeen Victorian pits and post-holes, and a number of soil layers. The gully and ponds were partially investigated during the preceding trial trenching evaluation in 2008, though the latter had previously been postulated as parts of a moat or large-ditched enclosure. The ponds were probably late medieval in origin. Their late 15th-mid 16th century infilling contained medieval building debris as well as later domestic material. The ponds were levelled by the 18th century.
Project dates	Start: 25-06-2012 End: 15-08-2012
Previous/future work	Yes / No
Any associated project reference codes	11/01129/FUM - Planning Application No.
Any associated project reference codes	E2569 - Contracting Unit No.
Any associated project reference codes	ECB361 - HER event no.
Type of project	Recording project
Site status	None
Current Land use	Industry and Commerce 4 - Storage and warehousing
Monument type	POND Medieval
Monument type	GULLY Medieval
Monument type	PIT Post Medieval
Significant Finds	POTTERY Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	CBM Medieval
Significant Finds	GLASS Post Medieval
Significant Finds	CLAY TOBACCO PIPE Post Medieval
Significant Finds	STONE Medieval
Significant Finds	ANIMAL BONE Post Medieval
Significant Finds	SHELL Post Medieval
Significant Finds	METALWORK Post Medieval
Investigation type	"Open-area excavation","Watching Brief"
Prompt	Direction from Local Planning Authority - PPS

continued



<b>Project location</b>	
Country	England
Site location	CAMBRIDGESHIRE EAST CAMBRIDGESHIRE ELY Former Thurlow Nunn Sanden site
Postcode	CB7 4AE
Study area	500.00 Square metres
Site coordinates	TL 554522 280295 51 0 51 55 42 N 000 15 40 E Point
<b>Project creators</b>	
Name of Organisation	Archaeology South-East
Project brief originator	Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA)
Project design originator	Essex County Council Field Archaeology Unit
Project director/manager	Adrian Scruby
Project supervisor	Mark Germany
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Aldi PLC
<b>Project archives</b>	
Physical Archive recipient	Cambridgeshire County Archaeological Store
Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal"
Digital Archive recipient	Cambridgeshire County Archaeological Store
Digital Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal","Stratigraphic","Survey"
Digital Media available	"Images raster / digital photography","Spreadsheets","Survey","Text"
Digital Archive notes	Digital info on CD-Rom with paper archive
Paper Archive recipient	Cambridgeshire County Archaeological Store
Paper Contents	"Animal bones","Ceramics","Environmental","Glass","Industrial","Leather","Metal","Stratigraphic","Survey"
Paper Media available	"Context sheet","Matrices","Miscellaneous Material","Photograph","Plan","Report","Section","Survey "
Entered by	Mark Atkinson (mark.atkinson@ucl.ac.uk)
Entered on	4 September 2013

## Appendix 7: Outline Publication content and page count

### *PCAS outline / page estimate*

	<b>Page count:</b>		
	<b>Text</b>	<b>Figures</b>	<b>Plates/tables</b>
<b>Executive summary</b>	0.25	0	0
<b>Introduction / background</b>	1.0	0.5	0
<b>Site narrative</b>			
Method, overview, etc	0.25	1	0.5
Pre-ponds land use	0.25	0	0
Ponds A & B - use	0.5	0.5	0
Ponds A & B - disuse	1	0.5	0
Post-ponds land use	0.5	0	0
<b>Findings</b>			
Medieval & post-medieval pottery	1	0.5	0
Ceramic building material	1	1.0	0
Stone	0.5		0
Glass	0.25		0
Clay tobacco pipe	0.25		0
Registered finds	0.5		0
Mammal, bird & fish bone	1	0	0.5
Environmental material	1	0	1
<b>Discussion / conclusions</b>	1.5	0.5	0
<b>Acknowledgements</b>	0.25	0	0
<b>Bibliography</b>	0.5	0	0
<b>Totals:</b>	11.5	4.5	2

Estimated total pages = 18

## Appendix 8: Publication Task List

<b>Task No.</b>	<b>Stratigraphic Tasks</b>	<b>Time</b>
1	Refinement and finalisation of phasing and dating for all site features/deposits	1 day
2	Write Introduction and geology/topography background texts	0.5 days
3	Write site narrative description, using chronological framework	3 days
4	Documentary and cartographic research and assimilation of new data	2 days
5	Selection of figures (plans/sections) and photo plates to accompany narrative	1 day
5	Digestion and association of finds and environmental publication reports	1 day
7	Write discussion and conclusion texts	2 days
	<b>Sub-total</b>	<b>10.5 days</b>
	<b>Specialist Analysis</b>	
8	Medieval and post-medieval pottery	1 day
9	Glass	2 days
10	Clay tobacco pipe	2 days
11	Ceramic Building Material	5 days
12	Geological material	2 days
13	Mammal, bird and fish bone	3.5 days
14	Registered finds	2 days
15	Environmental Material	7 days
	<b>Sub-total</b>	<b>24.5 days</b>
	<b>Illustration</b>	
16	Plan and section figures, plus photo images	2.5 days
17	Pottery and finds illustration	2.5 days
	<b>Sub-total</b>	<b>5 days</b>
	<b>Editing and Production</b>	
18	Internal reading/editing of draft report	2 days
19	Alterations to text and figure illustrations	2 days
20	(Submission to PCAS)	-
21	Journal editor amendments to text & figures	1 day
22	(Re-submission to PCAS)	-
23	Proof reading	0.5 days
	<b>Sub-total</b>	<b>5.5 days</b>
	<b>Management &amp; Miscellaneous</b>	
24	Project Management (general admin & co-ord throughout project)	2 days
22	Expenses & consumables	(cost)
26	PCAS page print cost for 18 pages	(cost)
	<b>Sub-total</b>	<b>2 days</b>

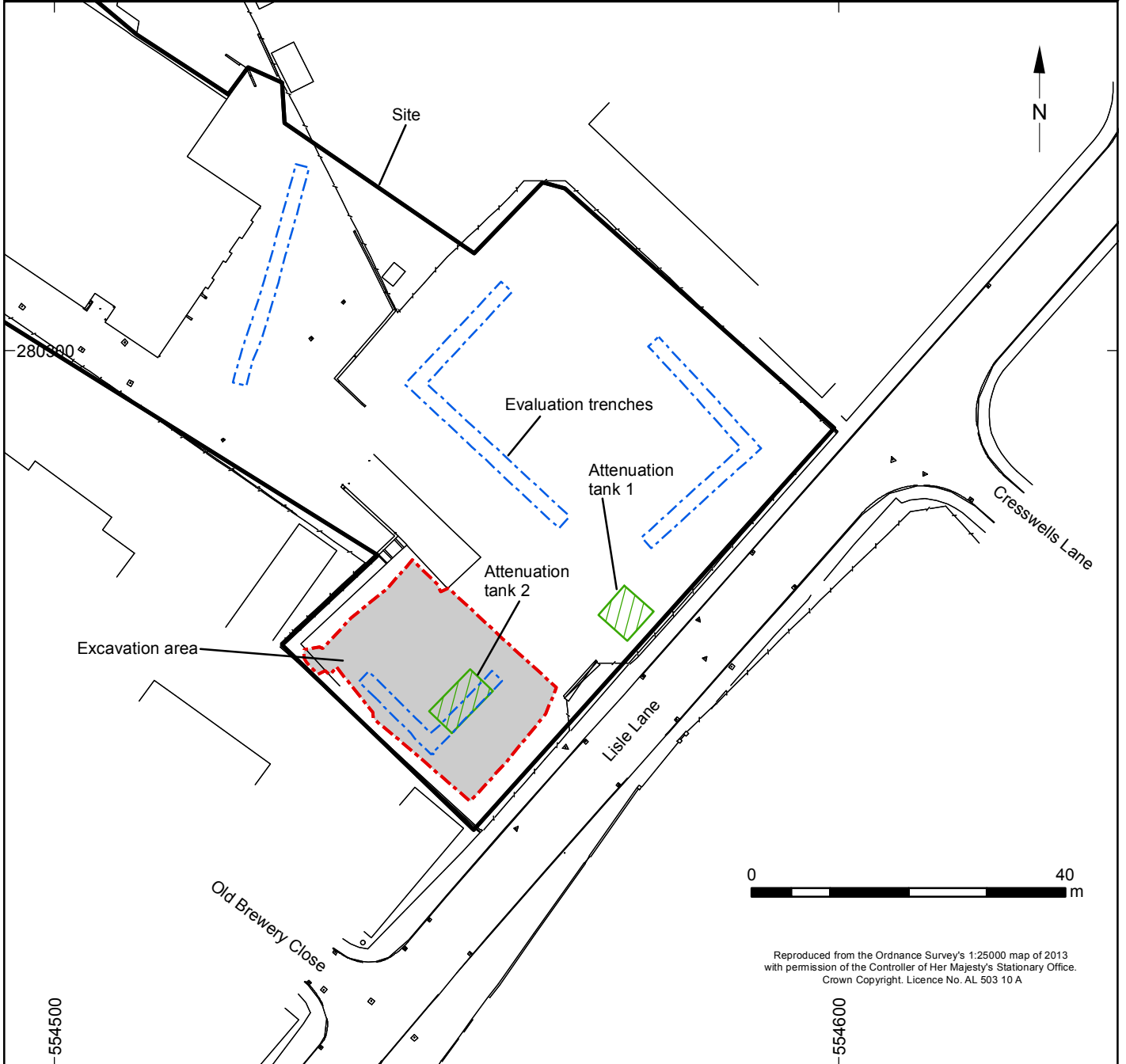
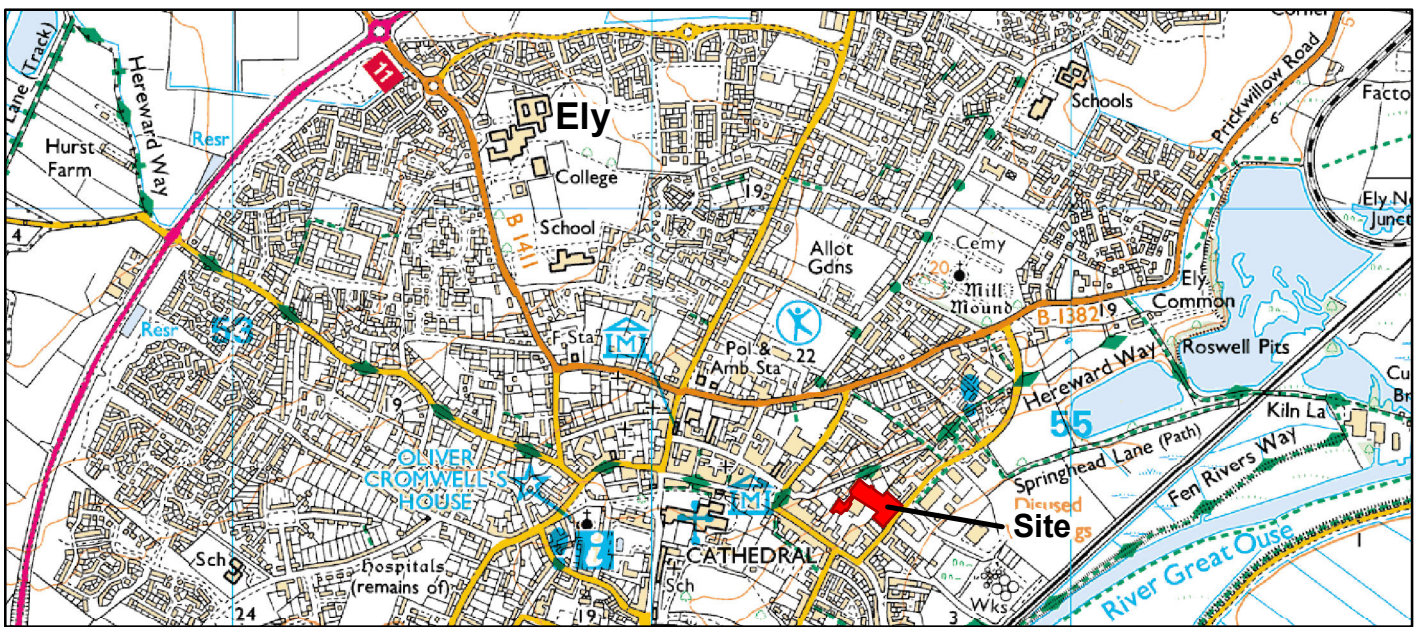


Fig.1. Site location

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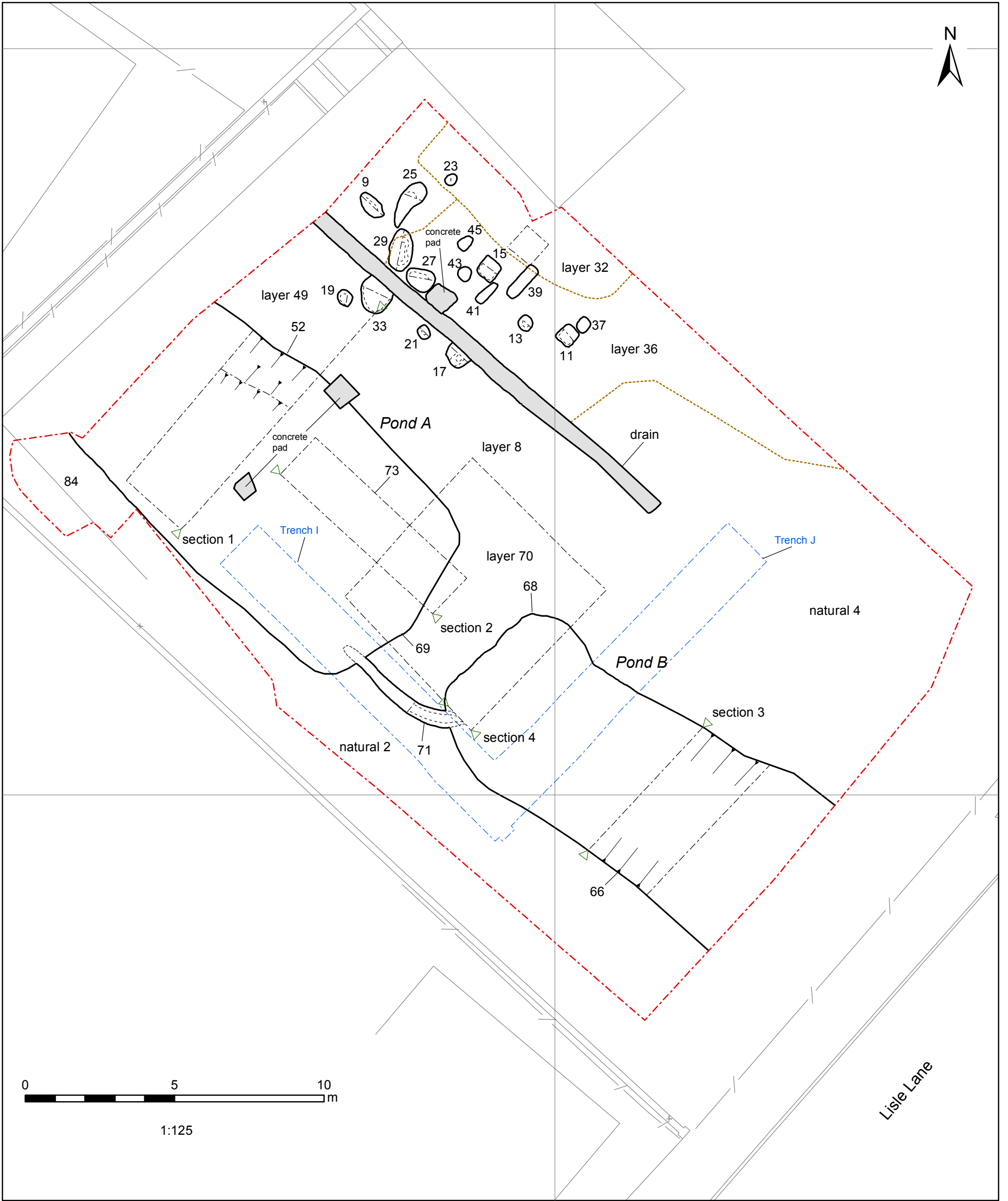


Fig.2. All excavated features

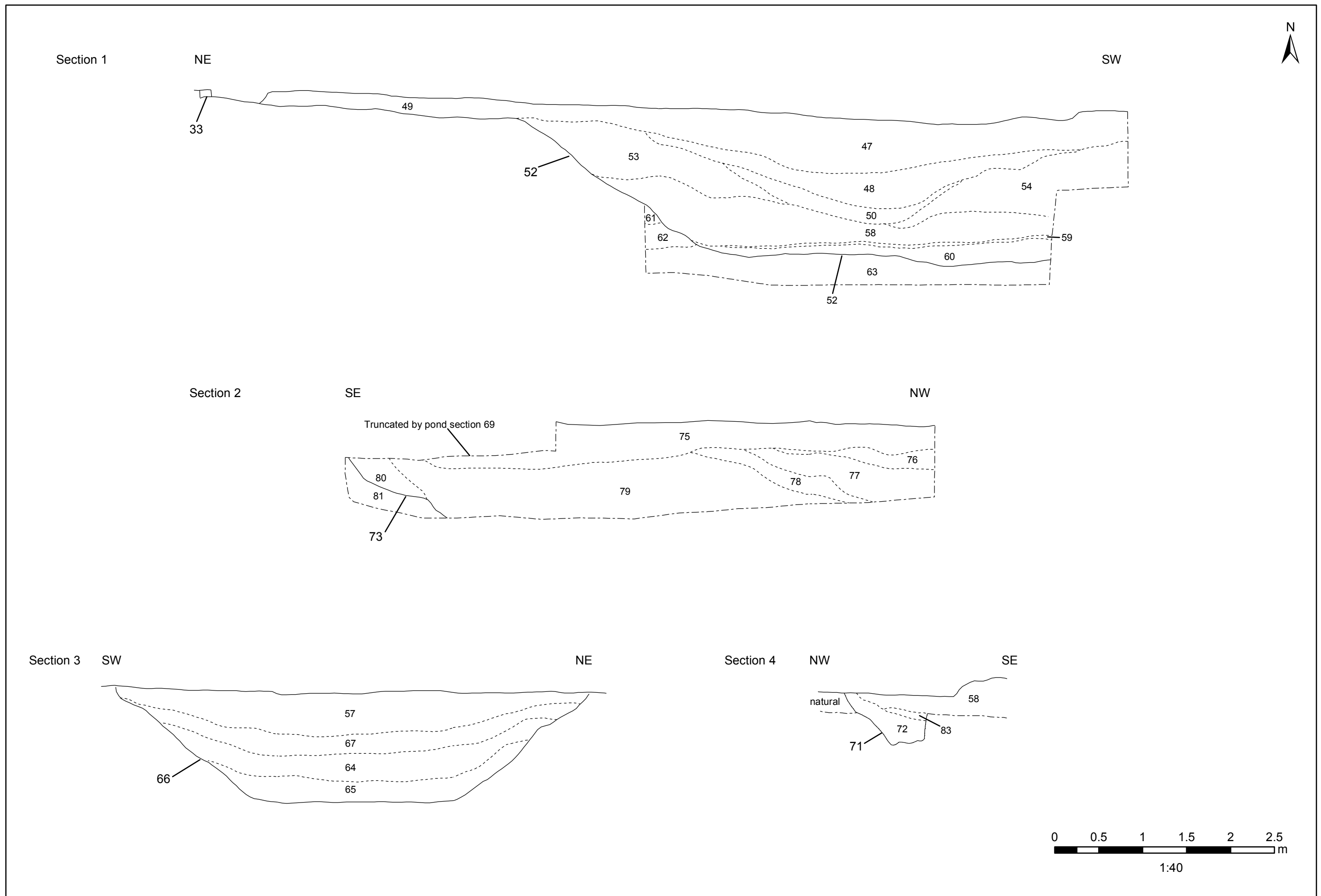


Fig.3. Sections 1 - 4



Figure 4. General site view, looking south



Figure 5. General site view, looking east



Figure 6. Pond A Segment 52, working view, looking southeast



Figure 7. Pond A Segment 52 section, looking southeast (2m scale)





Figure 8. Pond A Segment 73, looking south (2m scale)

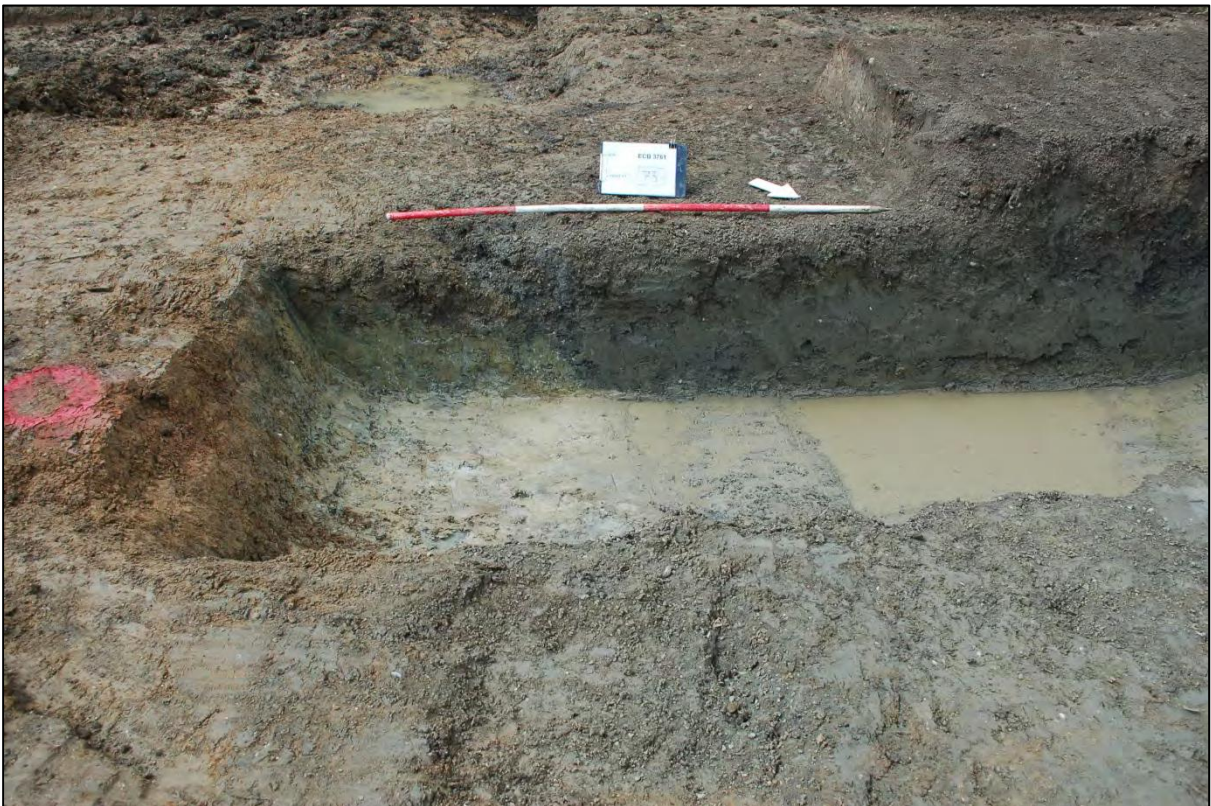


Figure 9. Pond A Segment 73, detail of pond end, looking southwest (2m scale)



Figure 10. Pond B Segment 66, looking north (2m scale)



Figure 11. Pond B Segment 66 section, looking northwest (2m scale)



Figure 12. Gully 71, looking east (1m scale)



Figure 13. Square pit 15, looking north (0.5m scale)



Figure 14. Pit 29, looking NW (0.5m scale)



Figure 15. Pit 33, looking NE (0.5m scale)



Figure 16. Pit 13, looking north (0.5m scale)



Figure 17. Attenuation Tank pit 1



Figure 18. Attenuation Tank pit 2

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