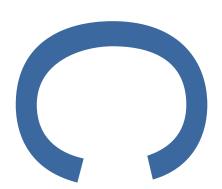
# POND RESTORATION AT WANDLEBURY COUNTRY PARK, STAPLEFORD, CAMBRIDGESHIRE



# **ARCHAEOLOGICAL MONITORING**

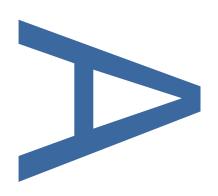


SCHEDULED MONUMENT CONSENT

REF: S00204601

**PCA REPORT NO: 13983** 

**SITE CODE: ECB6008** 



**JANUARY 2020** 

PRE-CONSTRUCT ARCHAEOLOGY

# Pond Restoration at Wandlebury Country Park, Stapleford, Cambridgeshire: Archaeological Monitoring

Scheduled Monument Consent Ref: S00204601

Central National Grid Reference: TL 49413 53421

Site Code: ECB6008

Report No. R13983

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#### **ABSTRACT**

Archaeological monitoring was carried out during groundworks associated with the restoration and enlargement of an existing pond within the interior of the Iron Age hillfort at Wandlebury Country Park, Stapleford, Cambridgeshire (NGR TL 49413 53421). The work was carried out on behalf of Cambridge Past, Present & Future, to meet the requirements of Scheduled Monument Consent granted for the works by Historic England. Landscaping and enlargement of the pond was monitored on 13<sup>th</sup> November and excavation of a new drainage pipe trench connecting with the pond was monitored on 22nd November 2019.

The watching brief in the area of the pond enlargement identified two pits each containing single sherds of Late Bronze Age to Early Iron Age pottery, as well as partly defining the extent of the truncation relating to the existing pond. The pipe trench excavated from the pond to the north-eastern corner of West House exposed a further four archaeological features, as well as deposits relating to the demolition of the late-17th-/early-18th-century mansion in 1956. One of these features was orientated off the former line of the northern wall of the demolished house and is thought to represent a robber cut for an associated wall. The remaining three features seen in the pipe trench can probably be identified as a ditch and two pits; the ditch and one of the pits did not contain any artefacts, but their fills were of similar appearance to those of the prehistoric pits seen in the pond footprint. The remaining pit could be dated to the post-medieval to modern period based on the associated pottery.

The prehistoric features are of similar date and character to those discovered during the partial excavation of the periphery of the hillfort interior in 1994–1997 by the Cambridge Archaeological Unit. They suggest that Late Bronze Age—Early Iron Age settlement activity, predating the multivallate hillfort, extends well into the hillfort interior. The monitoring has also demonstrated relatively good preservation of both prehistoric and post-medieval archaeological remains within the inner ring of the hillfort.

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#### 1 INTRODUCTION

- A programme of archaeological monitoring was undertaken by Pre-Construct Archaeology Ltd (PCA) at Wandlebury Country Park, Stapleford, Cambridgeshire, CB22 3AE (NGR TL 49413 53421) on the 13<sup>th</sup> and 22<sup>nd</sup> November 2019 (Figures 1–3; Plates 1 & 2). The site is 7km south-east of Cambridge city centre, in Stapleford parish. The archaeological work was commissioned by Cambridge Past, Present & Future as part of a scheme to restore and enlarge an existing pond.
- 1.2 The pond is located within the interior of the Iron Age hillfort at Wandlebury, a Scheduled Ancient Monument (SM 24406; NHLE 1009395). 'Wandlebury Ring' originated in the Early Iron Age as a slight univallate hillfort and was altered at some point during the later Iron Age into a large multivallate hillfort. In the late 17<sup>th</sup> and 18<sup>th</sup> centuries, a mansion with stables and formal gardens was constructed within the circuit of the earlier defences by Lord Godolphin. The mansion was demolished in 1956 but several of the associated buildings remain and are Grade II listed.
- 1.3 The scheme involved the restoration and enlargement of the existing but at that time dry pond (Plate 1), and the digging of a relatively shallow *c.* 70m-long pipe trench from the south, providing the pond with a supply of runoff rainwater (Figure 2). The aim was to restore the pond and its immediate surroundings to the status of a significant landscape, ecological, learning and recreational focal point within the country park. Prior to enlargement, the 'Inner Ring Pond' had a footprint of approximately 10m x 15m. The total area of landscaping required for the pond restoration was approximately 30m x 30m (900m²), in addition to the excavation of the new pipe trench.
- 1.4 Due to the location of the site within the Scheduled Ancient Monument, in an area of high archaeological potential, the pond restoration was subject to Scheduled Monument Consent (ref. S00204601) under Section 2 of the Ancient Monuments and Archaeological Areas Act 1979 (as amended) (Sarah Poppy, Historic England, letter dated 6th December 2018). The Scheduled Monument Consent stipulated that:

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No ground works/ building works shall take place until the applicant has confirmed in writing the commissioning of a programme of archaeological work before and/or during the development in accordance with a written scheme of investigation which has been submitted to and approved by the Secretary of State advised by Historic England.

- 1.5 The programme of archaeological monitoring was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by Tom Woolhouse of PCA (Woolhouse 2019) and approved by Historic England. The WSI was also submitted for approval to Cambridgeshire County Council's Historic Environment Team (CHET).
- The broad aims of the programme of archaeological monitoring were to identify, investigate and record any archaeological remains on the site which were threatened with damage or destruction by the groundworks. The monitoring aimed to characterise the location, extent, date, character, condition, significance and state of preservation of any such archaeological remains. More specific objectives were to identify:
  - -any evidence of prehistoric occupation, burial or other activity predating the construction of the fort in the Early Iron Age;
  - -any evidence associated with the construction, occupation or disuse of the Early Iron Age univallate fort;
  - -any evidence for the construction, occupation, or disuse of the Late Iron Age multivallate fort. Given the site's location within the inner ring of the fort, the highest potential was thought to be for evidence of occupation (roundhouses, ancillary buildings, storage pits) inside the fort;
  - -any evidence for the initial laying out or subsequent remodelling of the gardens and parkland associated with the mansion constructed in the late 17<sup>th</sup>/ early 18<sup>th</sup> century;

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-any evidence for the origins and date of the Inner Ring Pond, in particular whether it was originally a natural/ geological feature (e.g. a solution hollow), whether it was created or modified during the prehistoric occupation of the site, perhaps for use as a watering hole, or whether it is an entirely artificial garden feature associated with the initial laying out or later development of the gardens of the 17<sup>th</sup>-/18<sup>th</sup>-century mansion. The latter explanation seemed most likely on the basis of the present evidence, particularly the borehole survey (Boreham 2017).

1.7 This report describes the results of the programme of archaeological monitoring; the site archive will be deposited at the Cambridgeshire County Council Archaeological Store.

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#### 2 GEOLOGY AND TOPOGRAPHY

#### 2.1 Geology

- 2.1.1 The site is located on chalk bedrock of the New Pit Chalk Formation. No superficial geological deposits are recorded on the site itself, though there is a thin capping of Lowestoft Formation glacial sand and gravel a short distance to the west (British Geographical Survey 2019). The superficial geology was present during the archaeological monitoring as (102), a stiff, light yellowish-white chalk with occasional friable, light brownish-orange sand.
- 2.1.2 A borehole survey over the extent of the then dry pond was conducted in June 2017 by Dr Steve Boreham, Dept. of Geography, University of Cambridge (Boreham 2017). The borehole survey was carried out at the request of Historic England. All the boreholes encountered 0.12–0.25m-thick stiff grey puddled silty clay on hard white Cretaceous Chalk bedrock. This puddled clay deposit was present during the monitoring and covered the full extent of the current pond. There was no sign of any other deposit or soil above the chalk bedrock and the boundary with the overlying clay was always sharp rather than graded. Dr Boreham considered that the pond had been excavated through the soil and subsoil and into the chalk bedrock. This hypothesis was borne out during the course of the archaeological monitoring. The silty clay was then added to create a watertight seal over the porous chalk. When the clay lining failed, a butyl liner was added on top of the clay, but it then failed too.

# 2.2 Topography

2.2.1 Wandlebury occupies a commanding position on a plateau at the crest of the low, but locally prominent, Gog Magog Hills. The interior of the inner ring of the fort is broadly flat, though it slopes gently down towards its centre. During the monitoring the height of the existing ground level was recorded at elevations ranging from 74.25m OD in the south, next to West House, to 72.77m around the edge of the pond, to the north.

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#### 3 ARCHAEOLOGICAL BACKGROUND

- 3.1 The site is located in the central part of Wandlebury Country Park, within the interior area of the multivallate Iron Age hillfort (Historic England 2019).
- 3.2 The visible remains of the defensive earthworks are those of the later multivallate hillfort, which is circular in plan, with a diameter of almost 320m. At their maximum extent the defences consisted of a pair of concentric ditches separated by a bank, an outer or 'counterscarp' bank, and a third bank within the inner ditch. The counterscarp bank has been reduced in places over the years but generally survives to 10m wide and 1–2m in height. The outer ditch is between 10m and 15m wide and up to 3m deep. The area enclosed by the outer ditch was landscaped in the 17<sup>th</sup> century to form gardens and orchards; the inner ditch was infilled at this stage and the banks reduced in height. The intervening bank separating the ditches now stands to a height of approximately 1m, and slight earthworks mark the line of the inner ditch and bank on the northern side of the enclosure.
- 3.3 Partial excavation has revealed that below-ground remains of Iron Age structures and storage pits survive in the interior of the hillfort, and that the infilled ditch is preserved as a buried feature retaining a 'v'-shaped profile. Iron Age coins, brooches, beads and weaving combs have been recovered from the interior of the monument at various times since the 17<sup>th</sup> century.
- 3.4 The earlier slight univallate hillfort was identified during excavations in 1955–6, when it was found that the surviving, outer, ditch had superseded an earlier ditch, 4.6m deep and 2.4m wide at the base. The earlier ditch was accompanied by an inner rampart consisting of a timber-revetted bank 4.3m wide. Artefacts found during the excavation date the earlier hillfort to the 4<sup>th</sup> century BC, after which the site fell into disrepair, followed by a long period of abandonment. The site was reoccupied in the early 1<sup>st</sup> century AD, at which time the defences were upgraded to form the multivallate hillfort.
- 3.5 Two inhumations, thought to be Iron Age in date, were discovered in 1967 during extension work to the cricket pitch some 25m outside the south-east entrance to the hillfort. A further five inhumations of similar date were revealed

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in 1976 when high winds uprooted trees in the same area. The narrow spur containing these burials, which extends to the south-east of the hillfort, is therefore considered to be the location of a cemetery related to the occupation of the hillfort.

- 3.6 In the late 17<sup>th</sup> and early 18<sup>th</sup> century, a mansion with associated outbuildings and stables was constructed by Lord Godolphin in the southern part of the interior of the hillfort. The mansion was demolished in 1956, at which time the stable building to the west was converted into houses (West House) and the offices and shop of the Cambridge Preservation Society (Gog Magog House). The foundations of the mansion are now indicated by low walls containing a raised garden, to the east of Gog Magog House. To the north of these foundations, three regular platforms descend towards a rectangular pond. The terraces are 36m in length (approximately the same length as the southern aspect of the original mansion), 12m wide, and descend in 0.5m intervals. The pond, which was re-excavated in 1988 to reveal its former dimensions, measures approximately 30m north to south by 20m east to west and lies about 10m to the north of the lowest terrace. The pond and terraces are thought to be part of the formal garden designed in the late 17<sup>th</sup> century to complement Lord Godolphin's new mansion.
- 3.7 Four causeways give access to the hillfort, all of which are modern, as is the bridge to the south-east of Gog Magog House. The abutments of an earlier post-medieval bridge lie near a modern pond to the south of East House. Underground service tunnels, constructed during the post-medieval period to enable the unobtrusive movement of servants, run south-eastwards from the former mansion and stables towards the outer ditch. These brick-lined abandoned tunnels now serve as a bat sanctuary and a purpose-built entrance structure is located on the inner side of the outer ditch. The 15<sup>th</sup>-century timber-framed granary located to the east of Gog Magog House was brought to the site by the Cambridge Preservation Society and re-erected in 1981.
- 3.8 The antiquity of the Inner Ring Pond is unknown (Littlewood 2017). It is possible that it has an ancient origin as a dew pond and that it provided the prehistoric inhabitants of the site with a water source for themselves and their

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livestock. However, it is equally possible that it was established as an ornamental garden feature for the 17<sup>th</sup>-/18<sup>th</sup>-century country house. The two possibilities need not be mutually exclusive.

3.9 The more recent history of the pond is better documented (*ibid.*). In around 1900, the pond was lined with concrete. In 1987 the concrete basin was broken by a tree falling in gales and attempts to patch the damage failed. In *c.* 1988, the concrete was removed and a clay liner put in place. This worked until the pond margins dried and cracked in dry weather and subsequently leaked. In 2000, the pond was restored with a butyl liner. By 2007 the butyl liner had become damaged and leaks had developed, reducing water levels.

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#### 4 METHODOLOGY

#### 4.1 General

- 4.1.1 All aspects of the investigation were conducted in accordance with the Chartered Institute for Archaeologists' (ClfA) Code of Conduct, the Standard and Guidance for an Archaeological Watching Brief, and the Standard and Guidance for Archaeological Excavation (ClfA 2014), as well as the Standards for Field Archaeology in the East of England (Gurney 2003).
- 4.1.2 The archaeological monitoring encompassed all areas where the groundworks for the pond renovation impacted on previously undisturbed ground. This comprised the extension of the existing pond footprint to the north-east, west and south-west, and the excavation of the pipe trench carrying the new rainwater feed to the pond from the south (Figure 3).
- 4.1.3 Landscaping and excavation within the existing pond footprint were considered not to have any archaeological impact, based on the results of the borehole survey (Boreham 2017). This indicated that the clay pond lining installed in 1988 directly overlaid the chalk geology, with a sharp interface and no sign of any other deposit(s) between the two. This suggested that the pond had been scoured out/ re-dug at that time and that any evidence of earlier deposits within the pond, had they been present, were removed.

# 4.2 Excavation and Site Planning

- 4.2.1 Within the areas of groundworks, the topsoil, subsoil and any made ground deposits of recent origin were machine-stripped, under close archaeological supervision, down to the first archaeological horizon or the geological horizon, whichever was encountered first. Machining was carried out in shallow, even spits. Ground reduction within the pond area was carried out using a 21-ton 360° tracked mechanical excavator; a 4-ton tracked mechanical excavator was used to excavate the pipe trench. Toothless ditching buckets, 1.8m-wide and 0.4m-wide, respectively, were used for these two phases of work.
- 4.2.2 Exposed surfaces were cleaned by trowel and hoe as appropriate and all further excavation was undertaken manually using hand tools (hoes, trowels).

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- 4.2.3 Metal-detecting was carried out during the topsoil and subsoil stripping and throughout the excavation process. Archaeological features and spoil heaps were scanned by metal-detector as they were encountered/ produced. The metal-detector was not set to discriminate against iron. Only objects of modern date were found and were not retained for accession.
- 4.2.4 Limits of excavations, heights above Ordnance Datum (m OD) and locations of archaeological features and interventions were recorded using a GEOMAX Zenith15 GSM GPS rover unit with RTK differential correction, giving threedimensional accuracy of 20mm or better.

#### 4.3 Recording and Sampling

- 4.3.1 Field excavation techniques and recording methods are detailed in the PCA Fieldwork Induction Manual (Operations Manual I) by Joanna Taylor and Gary Brown (2009).
- 4.3.2 All features were investigated and recorded in order to properly understand the date and nature of the archaeological remains on the site and to recover sufficient finds assemblages to assess the chronological development and socio-economic character of the site over time.
- 4.3.3 Discrete features were photographed and recorded by a cross-section drawing at an appropriate scale (1:10). The full extents of all features exposed in plan were excavated in order to maximise recovery of finds
- 4.3.4 Deposits or the removal of deposits judged by the excavating archaeologist to constitute individual events were each assigned a unique record number (often referred to within British archaeology as 'context numbers') and recorded on individual pre-printed forms (Taylor and Brown 2009). Archaeological processes recognised by the deposition of material are signified in this report by round brackets (thus), while events constituting the removal of deposits are referred to here as 'cuts' and signified by square brackets [thus]. The record numbers assigned to cuts, deposits and groups are entirely arbitrary and in no way reflect the chronological order in which events took place. All features and deposits identified during the programme of archaeological monitoring are listed in Appendix 2 XXXX. Artefacts

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- recovered during the monitoring were assigned to the record number of the deposit from which they were retrieved.
- 4.3.5 High-resolution digital photographs were taken of all relevant features and deposits and were used to keep a record of the excavation process.

## 4.4 Environmental Sampling

4.4.1 Bulk samples, 40 litres in volume where possible, were taken from sealed, dated features to recover micro- and macro-botanical environmental remains. The broad aim of such sampling was to recover evidence relating to the past environment and economy of the site, and how these changed over time under both natural and anthropogenic influences.

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#### 5 ARCHAEOLOGICAL RESULTS

#### 5.1 Overview

- 5.1.1 The monitoring identified six features, comprising the robber cut for a wall, a possible ditch and four pits. Two of the pits were located in the footprint of the new pond and contained pottery of Late Bronze Age to Early Iron Age date. A further pit exposed near the pond area, in the pipe trench, did not contain any finds but had a fill of similar appearance to those of the prehistoric pits. Further to the south, also within the pipe trench, a possible ditch was identified; as with the pit, it did not contain finds, but had a comparable fill to the prehistoric features. Additionally, a robber cut for a wall on the same orientation as the north wall of Gog Magog House was identified within the pipe trench, as was a single post-medieval to modern pit.
- 5.1.2 Various soil deposits were identified during the course of the monitoring, in both the pond and pipe trench areas. These were principally post-medieval to modern in date, with significant deposits being limited to a made ground which overlaid a possible surviving prehistoric(?) buried soil (104) in the pond area. Only a small area of this was exposed, at the north-west edge of the pond enlargement, and its precise nature therefore remains uncertain. The pipe trench area also contained deposits relating to the demolition of Gog Magog House. The modern subsoil (101) contained two pieces of residual struck flint, both of which are of later prehistoric type, including a flake which has been roughly retouched to form a cutting tool.

## 5.2 The Pond Area (Figures 4 & 6; Plate 3)

5.2.1 Pit [108] (Figure 6, Section 2; Plate 4) was located on the west side of the pond footprint and appeared to be circular, although it was not fully visible in plan (c. 2.03m wide by 0.62m deep). It had two fills: a lower fill (107) of midto dark greyish-brown silty sand, which contained two residual pieces of earlier prehistoric struck flint, as well a single sherd (3g) of calcined-flint-and-sand-tempered handmade pottery dating to the Late Bronze Age to Early Iron Age. The fill also contained five fragments of animal bone, mainly sheep/goat, as well as a mouse or vole femur. A bulk soil sample <1000> taken from this fill contained small fragments of wood charcoal, a small assemblage of

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- carbonized wheat (*Triticum* spp.) grains and further unidentifiable grains. The feature also had an upper fill (106), a moderate to firm light yellowish-grey silty clay which contained no finds. The feature was cut/ recut by Pit [122].
- 5.2.2 Pit [122] (Figure 6, Section 2; Plate 4) was located on the west side of the pond footprint and appeared to be circular, although it was not fully visible in plan (c. 1.48m wide by 0.57m deep). It had a single fill (105) of mid-brownish-grey silty sand which contained three sarsen stone pot-boiler fragments and a single sherd (4g) of pottery of probable Late Bronze Age to Early Iron Age date. The fill also contained six fragments of animal bone, comprising a horse tooth and bones deriving from sheep and cattle-sized animals. The feature may have been a recut of Pit [108].
- 5.2.3 Deposit (103) (Figure 6, Section 1; Plate 5) was a moderate to friable mid- to dark greyish-brown silty sand with rare brick rubble. The deposit overlay Deposit (104) and may represent made ground relating to the lining of the pond in AD 1900. The deposit contained two sherds of post-medieval red earthenware of 18<sup>th</sup>–19<sup>th</sup>-century date.
- 5.2.4 Deposit (104) (Figure 6, Section 1; Plate 5) was a mottled light yellow/ midgreyish-brown silty sand, overlain by Deposit (103), which may represent the survival of a buried prehistoric(?) soil beneath the various post-medieval and modern truncations relating to the pond. The deposit contained no finds.

#### 5.3 The Pipe Trench (Figures 5 & 6; Plate 6)

- 5.3.1 Robbed Wall [114] (Figure 6, Section 5) was located in the southern part of the pipe trench and appeared to be linear in plan and aligned east to west (*c*. 1.05m wide by 0.21m deep). It had a single fill (113) of mid-brownish-yellow silty sand containing abundant brick rubble. The form of the unfrogged bricks recovered from this deposit, together with the soft lime mortar adhering to them, suggest a 17th-century date. This building material probably derives from walls or other features associated with the late-17th- to 18th-century Gog Magog House, demolished in 1956.
- 5.3.2 Ditch [116] (Figure 6, Section 6) was located in the southern part of the pipe trench and appeared to be linear in plan and aligned east to west (c. 1.16m)

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- wide by 0.3m deep). It had a single fill (115) of light to mid-greyish-brown silty sand which contained no finds.
- 5.3.3 Pit [118] (Figure 6, Section 7) was located in the northern part of the pipe trench and appeared to be rectangular, although it was not fully visible in plan (c. 1.09m wide by 0.44m deep). It had two fills: a lower fill (119) of mid-brown silty sand which contained a single sherd of 19<sup>th</sup>–20<sup>th</sup>-century flowerpot, and an upper fill (117) consisting of moderate to friable dark greyish-brown silty sand, which contained no finds.
- 5.3.4 Pit [121] (Figure 6, Section 8) was located in the northern part of the pipe trench and appeared to be circular, although it was not fully visible in plan (c.
  1.3m wide by 0.22m deep). It had a single fill (120) of light to mid-brownish-grey silty sand which contained no finds.
- 5.3.5 Deposit (112) (Figure 6, Section 3) was a mid-greyish-yellow sand with abundant brick rubble. The unfrogged bricks recovered from this deposit have a soft lime mortar adhering to them and fit a c. 17<sup>th</sup>-century date, although the Fletton bricks found in association are late-19<sup>th</sup>-/early-20<sup>th</sup>-century. This material probably derives from the 17<sup>th</sup>- to 18<sup>th</sup>-century mansion, demolished in 1956, as well as associated later garden features or outbuildings. The deposit also contained a sherd from a 19<sup>th</sup>-century refined whiteware jar.

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#### **6** FINDS AND ENVIRONMENTAL EVIDENCE

# 6.1 Struck Flint

## By Barry Bishop

#### Introduction

6.1.1 The archaeological monitoring resulted in the recovery of four pieces of struck flint. The assemblage has been comprehensively catalogued by context and this includes further descriptive details of the material (Table 1). This report summarises the data in the catalogue; it quantifies and describes the material and presents a preliminary assessment and outline of its significance. Measurements were taken following the methodology of Saville (1980).

Context	Chip (<15mm)	Blade: non-prismatic	Flake	Retouched	Cortex	Condition	Suggested date range	Comments
					Thermal			Thick possible flake, although poorly
101			1		scar	Chipped	BA-IA	detached
								Edge-trimmed decortication flake with
								irregular, moderately shallow, scalar
								retouch along straight left margin.
					Abraded	Slightly		Distal missing. Light wear.
101				1	nodular	chipped	BA-IA	>39x49x10mm.
								Thin and well-struck, although striking
							Meso-	platform has shattered. Distal tip
107		1			None	Chipped	EBA	missing
						Slightly		Very small flake, possibly from
107	1				None	chipped	Preh.	platform trimming

Table 1: The struck flint assemblage

#### Description

6.1.2 In total, four pieces of struck flint were recovered during the investigations. Subsoil in the pipe trench (101) produced two pieces. One of these comprises a rather poorly struck decortication flake that has been roughly retouched along one edge to provide what was probably a cutting tool, although it shows only light wear. The other is also poorly struck and appears to have detached

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largely along a thermal fault, casting some doubt on it having been deliberately knapped. Assuming that it was, both of these pieces show a casualness to reduction which is most typically seen in later prehistoric industries, particularly those of the later second and first millennia BC, and it is entirely possible that they are at least broadly contemporary with the occupation of the hillfort (*cf.* Humphrey 2003; 2007).

6.1.3 The remaining two pieces were recovered from Iron Age Pit [108]. They include a small but competently detached blade that is unlikely to date to long after the Neolithic, and a small core-trimming chip, possibly of a similar date. Although neither is truly diagnostic, they are not typical products of Iron Age flint-working traditions and are very likely to have been residually deposited in the pit.

#### Significance

6.1.4 The main significance of the struck flint is that it is suggestive of later prehistoric flint-working practices that might be contemporary with the use of the Iron Age hillfort, as well as probable earlier, Mesolithic or Neolithic, activity at the site. However, the size of the assemblage means it can contribute little to understandings of the precise chronology or nature of the activities represented.

#### Recommendations

6.1.5 Due to the small size of the assemblage, this report and accompanying catalogue are all that is required for the purposes of archiving and no further analytical work is warranted. It does, however, provide evidence for possible Iron Age flint-working, as well as earlier occupation at the site. It is therefore recommended that it is recorded in the Cambridgeshire Historic Environment Record and a brief mention included in any published account of the fieldwork.

#### 6.2 Prehistoric Pottery

#### By Lawrence Morgan-Shelbourne

#### Introduction

6.2.1 A very small assemblage, comprising three sherds (13g) of handmade prehistoric pottery, was recovered from the monitoring.

- 6.2.2 The pottery derived from three contexts, relating to the subsoil and two intercutting pits (Table 2). All of the pottery recovered can be assigned to a single broad period, the Late Bronze Age to Early Iron Age (LBA–EIA).
- 6.2.3 The ceramics are in a stable condition. This report provides a quantified description of the assemblage with a brief discussion.

Context	Cut	Feature type	No. of sherds	Wt.(g)	Overall context spot date	Fabrics	Reason for date
101	n/a	Subsoil	1	6	LBA-EIA	QUFL1	Fabric
105	122	Pit	1	4	LBA-EIA	FLQU1	Fabric
107	108	Pit	1	3	LBA-EIA	QUFL2	Fabric

Table 2: Pottery by context

Fabric code	Description
FLQU1	Rare to sparse, fine to coarse calcined flint, rare, fine sand
QUFL1	Sparse to moderate, fine sand, rare to sparse, fine to coarse calcined flint
QUFL2	Rare to sparse, fine sand, rare, fine to moderate calcined flint

Table 3: Fabric code breakdown

#### Methodology

6.2.4 All the pottery has been fully recorded following the recommendations laid out by the Prehistoric Ceramic Research Group (2009). After a full inspection of the assemblage, fabric types were assigned on the basis of dominant inclusion types, their density and modal size. Fabric groups are designated based on abbreviated codes, recorded as INCLUSIONTYPE-frequency-size in the catalogue. These groups were then given site-specific codes, e.g. FL1, QUFL2 in this report (Table 3). Sherds from all contexts were counted, weighed (to the nearest whole gram) and assigned to a fabric type (sherds broken in excavation were refitted and counted as single entities). Sherd type was recorded, along with technology (all sherds within the assemblage are handmade), evidence for surface treatment, decoration, and the presence of soot and/or residue. All pottery recovered by the fieldwork was subject to sherd size analysis. Sherds less than 4cm in diameter were classified as

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'small' (3 sherds, 100% by sherd count (SC)): sherds measuring 4–8cm were classified as 'medium', and sherds over 8cm in diameter were classified as 'large', giving a low Mean Sherd Weight (MSW) here of 4.33g.

Assemblage Characteristics: Late Bronze Age to Early Iron Age

6.2.5 The extremely limited period assemblage consists of sherds with calcined flint and sand fabrics. Although these fabric compositions are found in certain earlier prehistoric pottery traditions, the thin walls, hard, well-fired finish, and lack of protruding inclusions in these sherds indicate a Late Bronze Age to Early Iron Age, Post-Deverel-Rimbury Tradition designation is appropriate (Barrett 1980; Brudenell 2012). Fabrics of this type, along with chalk-tempered fabrics, form the majority of Late Bronze Age to Early Iron Age pottery assemblages recovered from investigations in and around Wandlebury Ring (Hartley 1957; Hill 2003; 2004). The period assemblage does not contain any diagnostic or surface-treated sherds and, as such, cannot be subdivided further chronologically.

#### Discussion

6.2.6 The pottery assemblage consists of sherds belonging to the Post-Deverel-Rimbury pottery tradition of the Late Bronze Age to Early Iron Age (*c*. 1150/1100–450/400 BC).

# 6.3 Post-Medieval Pottery

#### By Chris Jarrett

#### Introduction

6.3.1 A total of five sherds/5 estimated number of vessels (ENV)/101g of pottery were recovered by hand from four separate contexts. The sherds date to the post-medieval period, specifically the 19<sup>th</sup> century. The pottery is fragmentary, but overall in a good condition.

#### Methodology

6.3.2 The pottery was quantified by sherd count (SC), estimated number of vessels (ENV) and weight. The assemblage was examined macroscopically and microscopically using a binocular microscope (x20), and recorded in a spreadsheet format file by fabric, form and decoration. The post-medieval

wares have been classified according to MOLA (2014) as no comprehensive coding system exists for pottery of this period in Cambridgeshire. The pottery is discussed as an index.

#### **Contextual Analysis**

- 6.3.3 Subsoil (101), Pipe Trench Area, spotdate: 1810–1900: Refined whiteware with under-glaze transfer-printed and over-glaze painted decoration (TPW6), 1810–1900, 1 sherd, 1 MNV, 15g, form: bowl, medium rounded. Rounded wall sherd with external decoration consisting of a single- and double-line border containing a Chinoiserie floral motif painted red. Internal deposit.
- 6.3.4 Layer (103), spotdate: 18<sup>th</sup>–19<sup>th</sup> century: Post-medieval red earthenware (PMR), 1550–1900, 1 sherd, 1 MNV, 27g, form: horticultural dish/seed pan. Complete profile, thickened rim with a rounded top, straight-sided exterior and undercut, short upright wall, flat base, partially reduced surfaces. 18<sup>th</sup>-19<sup>th</sup> century. Post-medieval red earthenware (PMR), 1550–1900, 1 sherd, 1 MNV, 3g, form: flowerpot. Body sherd, oxidised.
- 6.3.5 Layer (112), spotdate: late 19<sup>th</sup>–20<sup>th</sup> century: Refined whiteware (REFW), 1805–1900, 1 sherd, 1 MNV, 53g, form: jar, medium cylindrical. Base with a concave underside.
- 6.3.6 Fill (119), Cut [121], spotdate: 19<sup>th</sup>–20<sup>th</sup> century: Miscellaneous (MISC), 1480–1900, 1 sherd, 1 MNV, 3g, form: flowerpot. Body sherd: oxidised high-fired, fine sandy ware with sparse calcareous inclusions. 19<sup>th</sup>–20<sup>th</sup> century.

#### Discussion and Potential

6.3.7 The assemblage is of little significance as the material is small in quantity and fragmentary. The pottery has potential to help date the deposits from which it was recovered.

# 6.4 Ceramic Building Material By Kevin Hayward

6.4.1 Eleven fragments of stone, as well as medieval and post-medieval peg tile and brick (totalling 5888g), were recovered from the archaeological monitoring.

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- 6.4.2 The pot-boiler fragments (heated stones, commonly placed in water to raise the temperature for cooking), which were recovered from fill (105) of Pit [122], are made from locally sourced Sarsen pebbles. The use of Sarsen stone for pot-boilers is a common phenomenon on prehistoric sites throughout southern and eastern England.
- 6.4.3 Of greater interest are fragments of earlier post-medieval brick recovered from fill (113) of Robbed Wall [114] and made ground Layer (112). The fragments are made out of a local calcareous Gault clay, which outcrops close by to the north and west, giving the fine red brick a distinctive yellow silty appearance (STAP1). Bonded in a soft white-cream shelly lime mortar (typical of 17<sup>th</sup>-century production), the bricks are typically poorly made, unfrogged, shallow (50–55mm) and relatively wide (105–108mm). They are either paving bricks associated with garden features, or a component part of garden walls or outbuildings, derived from the late-17<sup>th</sup>- to early-18<sup>th</sup>-century Godolphin's new mansion.

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Context		Form	Quantity	Date range	of material	Latest dated material		·	Spot mortar	date	with
105		Sarsen, burnt, possible pot- boilers	3	1500 BC	AD 400	1500 BC	AD 400	1500 BC-AD 400	No mort	ar	
	STAP1	Fletton brick; Roman cement; Two whole bricks, shallow, poorly-made, unfrogged; lime mortar as (113)		AD 1600	Present Day	AD 1890	Present Day	AD 1890–1950+	AD 1880	)–1950+	-
113	STAP1	Brick and lime-shelly mortar fragments	4	AD 1600	AD 1800	AD 1600	AD 1800	AD 1600–1800	AD 1500	)–1700	

Table 4: CBM quantifications and distribution

# 6.5 Animal Bone

# By Kevin Rielly

Context	BN	Species	Bone	Part	N2	Sex	Age	PAnt_fusion	DPost_fusion	Comments
101	43525	OVCA	MAN	PRO	1					0:1:M1-2+AR
101	43526	OVCA	SCP	PRO	1			F		0:1:
										122:1: UPPER OR LOWER I1W, ABOUT
105	43527	EQU	TTH	W	1		Α			5-6YRS OLD
105	43528	SSZ	RIB	S	1					122:1:
105	43529	SSZ	TRV	DOR	1					122:1:
105	43530	CSZ	IND	S	1					122:1:
105	43531	SSZ	LBF	S	1					122:2:

105	43532	SSZ	IND	S	1				122:1:
107	43533	OVCA	MAN	S	1	SA			108:1:DPM4-M1
107	43534	SSZ	IND	S	12				108:12:
107	43535	OVCA	RAD	S	1				108:1: R/U S UF
107	43536	OVCA	PH2	W	1		F	F	108:1:
101	43522	EQU	INN	S	1				0:1: ILSH FRG
101	43523	CSZ	IND	S	1				0:1:
101	43524	OVCA	RAD	W	1		F	UF	0:1:
107	43537	SRO	FEM	W	1	Α	F	UF	108:1:MOUSE/VOLE

Table 5: Animal bone catalogue

#### 6.6 Plant Macrofossils

#### By Kate Turner

Introduction

- 6.6.1 A single bulk soil sample <1000> was taken. This was collected from the lower fill (107) of Pit [108], thought to date to the Late Bronze Age to Early Iron Age.
- 6.6.2 The aim of this assessment was to:
  - 1. Give an overview of the contents of the assessed sample;
  - 2. Determine the environmental potential of this sample;
  - 3. Establish whether any further analysis is necessary.

#### Methodology

- 6.6.3 One environmental bulk sample, of 12 litres in volume, was processed using the flotation method; material was collected using a 300µm mesh for the light fraction and a 1mm mesh for the heavy residue. The heavy residue was then dried, sieved at 1, 2 and 4mm, and sorted to extract artefacts and ecofacts. The abundance of each category of material was recorded using a non-linear scale where '1' indicates occasional occurrence (1–10 items), '2' indicates that occurrence is fairly frequent (11–30 items), '3' indicates presence is frequent (31–100 items) and '4' indicates an abundance of material (>100 items).
- 6.6.4 The flot (>300μm), once dried, was scanned under a low-power binocular microscope at 10x magnification, to quantify the level of environmental material, such as seeds, chaff, charred grains, molluscs and charcoal. Abundance was recorded as above. A note was also made of any other significant inclusions, for example, roots and modern plant material. Macrobotanical identifications were carried out using standard reference catalogues (Jacomet 2006; Cappers, Bekker and Jans 2012; Neef, Cappers and Bekker 2012). Nomenclature for economic plants follows Van Zeist (1984) and for other plant taxa follows Stace (1991). Molluscs were identified with reference to Kerney (1999).

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6.6.5 A full account of the sample contents is given in Table 6.

#### Results

#### Preservation

- 6.6.6 Archaeobotanical remains were preserved in this sample by carbonisation. Recovery of ecofacts was poor to mixed; a substantial assemblage of fragmented charcoal was recognised, in addition to a small number of burnt cereal grains. Shells, of both terrestrial and freshwater molluscs, were also recovered.
- 6.6.7 Wood charcoal is common (over 100 specimens), the majority of pieces being extracted from the smallest sieved fraction (<2mm). No fragments of suitable size for species to be identified (>4mm) are present. A small concentration of carbonised cereal grain, of indeterminate wheats (Triticum spp.), is present in the flot, along with grains that are too heavily damaged for species to be recognised; chaff and seeds are absent. Roots were common, which is likely a reflection of post-depositional disturbance.
- 6.6.8 A large concentration of mollusc shell was observed in the sample; shells of terrestrial molluscs are predominant, with specimens of Pupilla muscorum, a snail common to dry, exposed areas, being the most frequently recognised. A minimal number of freshwater specimens, of Planorbidae, were also recognised.

#### Conclusions and Recommendations for Further Work

6.6.9 The assessment of the bulk sample from Pit [108] has shown that preservation of environmental remains from the sampled context is relatively poor. Wood charcoal is present in abundance; however, due to the relatively small concentration of identifiable specimens, this assemblage is considered to be of limited diagnostic value. The recovered cereal assemblage indicates the possibility that glume wheats were consumed and/or cultivated in the area during the use of this feature, although the evidence is too minimal to suggest that either was being undertaken to a significant degree. Terrestrial and freshwater mollusc shells are common, with over 100 examples counted, some of which are likely to be intrusive specimens.

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6.6.10 Due to small size of the archaeobotanical assemblage, and the likelihood of post-depositional disturbance in this context, no additional work is suggested on this sample. However, a summary of this report should be included in any future publication. Carbonised cereals and/or charcoal from this sample could potentially be used for radiocarbon dating.

Sample Number		1000
Context Number		107
Cut Number	108	
Context Type	Fill	
Feature Type		Pit
Provisional Date		Iron Age
Volume of bulk (litres)		12
Volume of flot (millilitres)		28
Method of processing		F
FLOT		
Charcoal		
Charcoal >4 mm		
Charcoal 2 - 4 mm		2
Charcoal <2 mm		4
Cereals	Common Name	•
GRAINS		
Triticum spp.	Indeterminate wheat	1
Cereal - Broken/distorted		1
Other Plant Macrofossils		
Roots/tubers		3
Molluscs	Habitat	•
Aegopinella/Oxychilus spp.	Moist places	1
Candidula gigaxii/intersecta	Dry places	1
Cecilioides acicula	Subterranean - non native	1
Cochlicopa lubrica/lubricella	Catholic	1
Discus rotundatus	Moist, sheltered places	1
Planorbis planorbis/carinatus	Well-vegetated aquatic habitats	1
Pupilla muscorum	Dry, exposed, calcareous	4
Trochulus hispidus/striolatus	Various	2
Vallonia spp.	Various	3
Vertigo spp.	Various	1
Snail eggs		

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Juveniles - indeterminate	4
Bone	
Bone fragments	1
Biological Remains	
Insect remains/puparia	1
Industrial Waste	
Vitreous material	3

Table 6: Assessment of environmental samples

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#### 7 DISCUSSION AND CONCLUSIONS

- 7.1 The monitoring in the area of the pond enlargement identified two pits containing pottery dating to the Late Bronze Age to Early Iron Age (c. 1150–400 BC), as well as partly defining the extent of the truncation from the existing pond.
- 7.2 The pipe trench excavated southwards from the pond to the north-eastern corner of West House exposed a further four archaeological features, as well as deposits relating to the demolition of the late-17<sup>th</sup>-/early-18<sup>th</sup>-century Gog Magog House in 1956. One of these features [114] was orientated in line with the former position of the north wall of this building and is thought to represent a robber cut for an associated wall. The lower demolition deposit (112), present towards the south end of the pipe trench, contained blocks of mortared brickwork which, although not in-situ, were nevertheless relatively intact. This could suggest that demolition of the house was less than thorough, and that elements of the structure and associated features might still survive below ground in this area.
- 7.3 The remaining three features can probably be identified as a ditch and two pits. The ditch and one of the pits did not contain any artefacts, but their fills were of similar appearance to those of the potentially prehistoric pits identified within the footprint of the pond. A small sherd of Late Bronze Age to Early Iron Age pottery was also recovered from the subsoil directly above the ditch, and may have originally derived from it, although this is not certain. The final pit is post-medieval to modern in date.
- 7.4 The prehistoric features uncovered are of similar date and character to those discovered during the partial excavation, by the Cambridge Archaeological Unit, of the periphery of the hillfort interior in 1994–1997. They demonstrate that this activity continues further into the hillfort interior. The stratigraphically earlier of the prehistoric pits identified during the monitoring had similar fills to those excavated in the South Paddock, directly to the east (French 2003, 19), where larger pits 'contain[ed] large amounts of chalk rubble back-fill'. The vertical-sided, flat-based profile of the pit also bears similarities to those

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excavated during the CAU investigations. The morphology of the pits recorded during the monitoring thus provides some support for the prehistoric dating which is suggested by the single sherds of associated Post-Deverel-Rimbury-tradition pottery. Based on the small pottery and later prehistoric struck flint assemblages recovered during the monitoring, the activity is probably contemporary with, and formed part of, a Late (latest?) Bronze Age to Early Iron Age settlement area, suggested to have a focus directly to the east and south of the current site, in the area of the ringwork entrance. It is likely that this settlement existed prior to the construction of the ringwork earthworks, although the existence of a pre-ringwork earthwork, Late Bronze Age to Early Iron Age palisaded enclosure, is a possibility (French 2004, 59).

- 7.5 The survival of archaeological features within the pipe trench, as well as around the margins of the pond area, indicates a reasonably good degree of archaeological preservation in the southern and central parts of the Inner Ring, as has proven to be the case in other more peripheral parts of the hillfort interior. The preservation of relatively thick subsoil deposits across much of the monitored area support this view (the prehistoric pits in the pond area were 0.87m below the level of the adjacent turf outside the pond footprint). Significantly, in the north of the pond area (the most low-lying part of the site), there is a buried soil deposit preserved underneath the post-medieval to modern topsoil, subsoil and made ground. Although only a very small area of this deposit was present within the stripped pond area, it is possible that it is part of a surviving prehistoric soil or land surface.
- 7.6 The monitoring observed the same puddled silty clay directly overlying the natural chalk as indicated by the borehole survey (Boreham 2017). It was present across the full extent of the existing pond area. This suggests that the pond was completely scoured out/ re-excavated down to chalk bedrock *c*. 1988 when this lining was installed to replace the damaged early-20<sup>th</sup>-century concrete liner. If the pond had earlier origins, potentially as a natural landscape feature and/ or a waterhole created during the prehistoric occupation, any evidence of this has been removed.

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#### 8 ACKNOWLEDGEMENTS

8.1 Pre-Construct Archaeology Ltd would like to thank Cambridge Past, Present & Future, particularly James Littlewood, for commissioning and funding the work. The groundworks were carried out by Miles Engineering. PCA are also grateful to Sarah Poppy of Historic England for monitoring the work and Kasia Gdaniec of CHET for her advice regarding the site. The project was managed for PCA by Tom Woolhouse and was supervised by Lawrence Morgan-Shelbourne. Figures accompanying this report were prepared by Rosie Scales of PCA's CAD Department.

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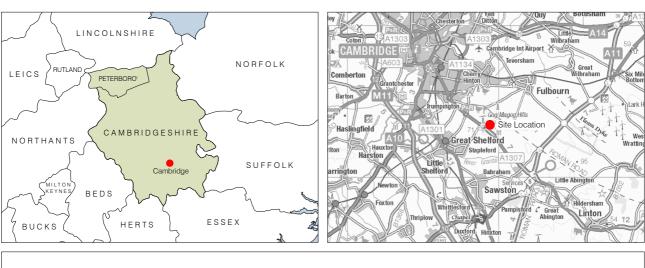
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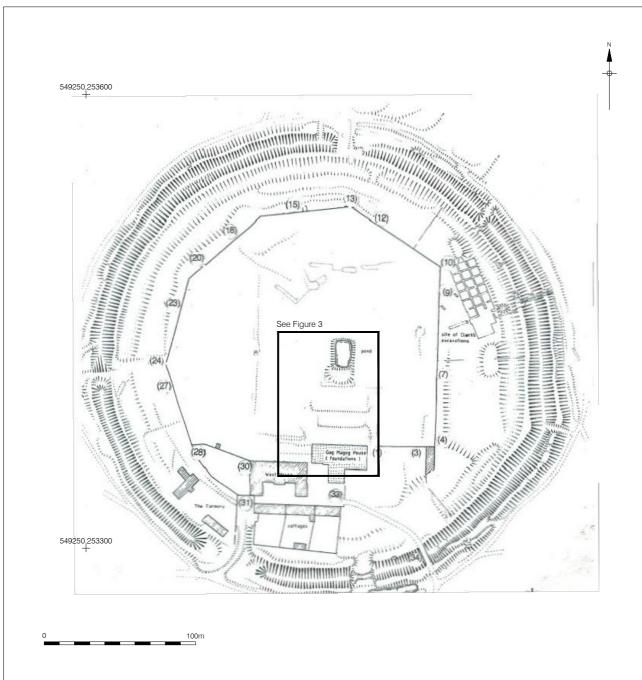
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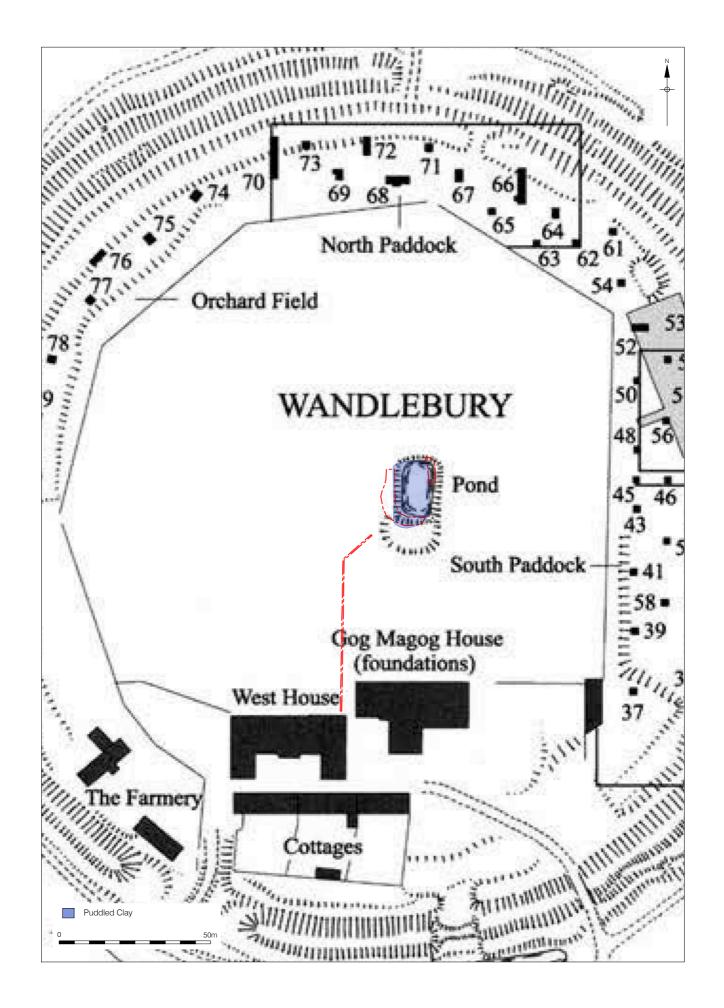
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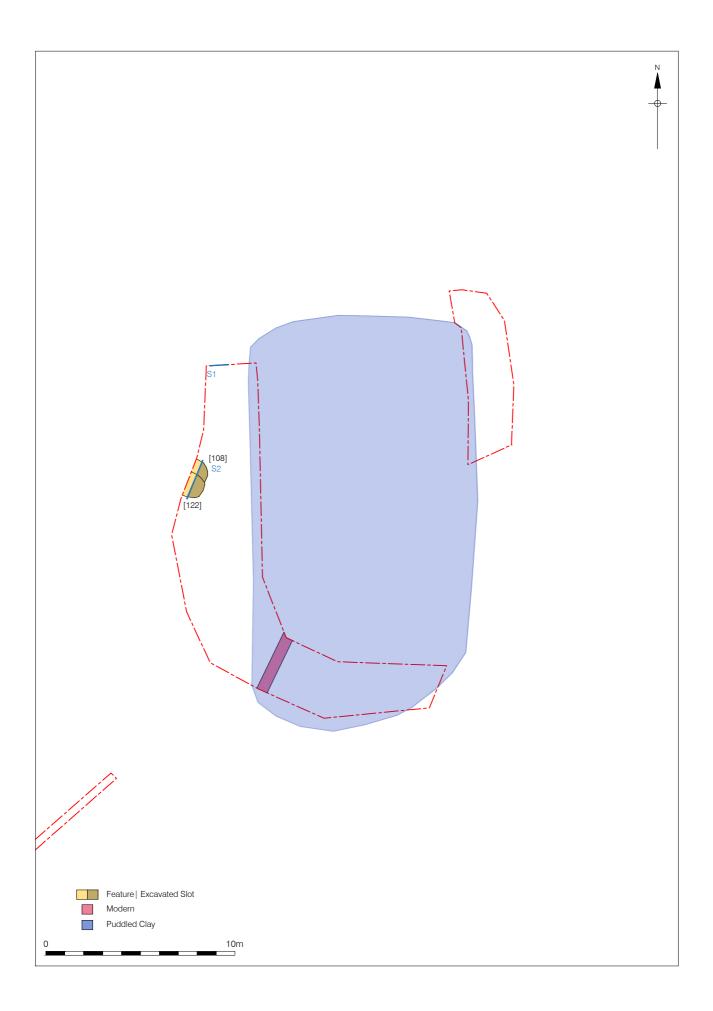
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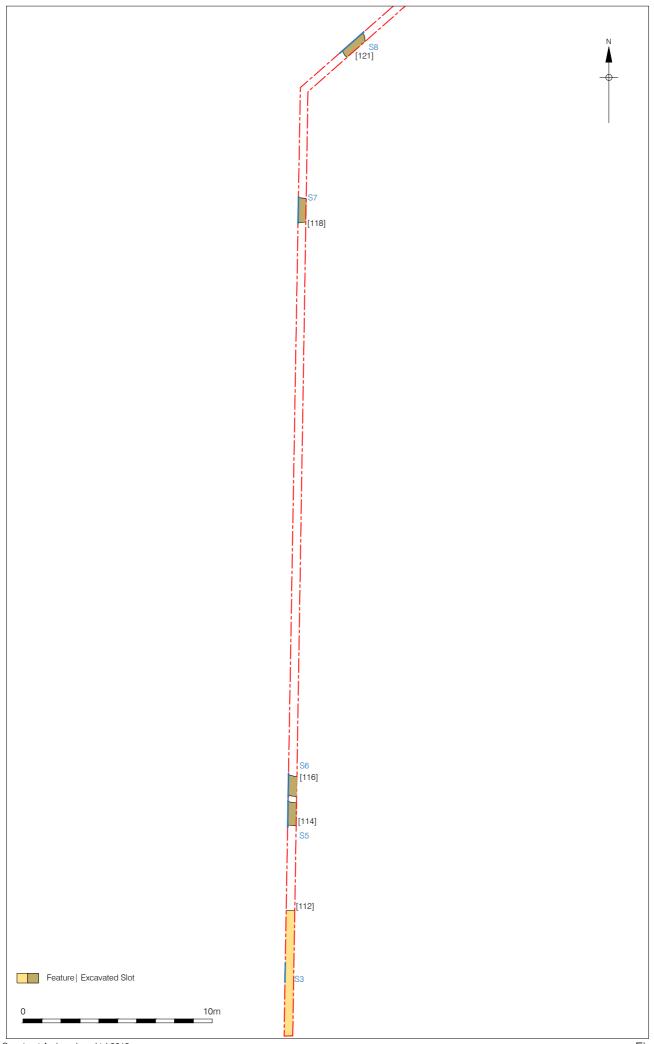


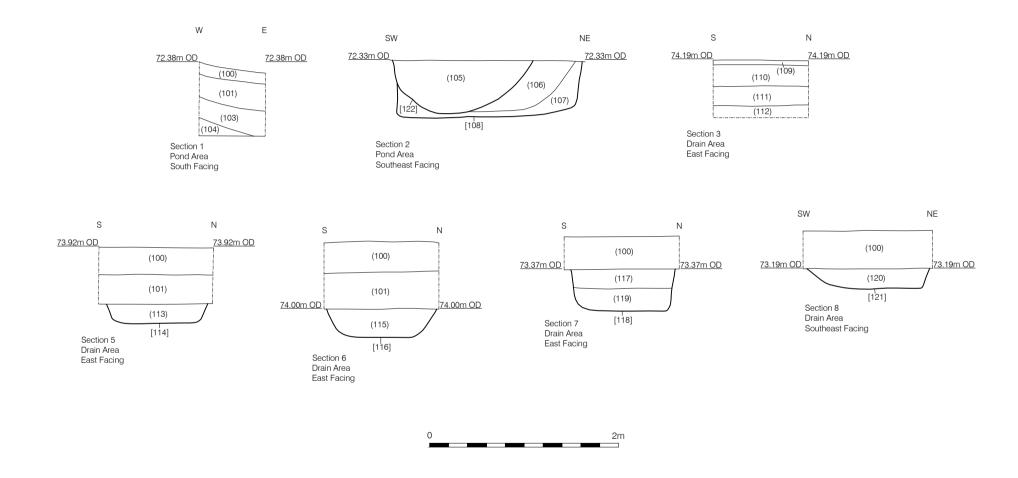












# 10 APPENDIX 1: PLATES



Plate 1: The pond area pre-excavation, view north-west



Plate 2: The pipe trench area pre-excavation, view south

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Plate 3: The pond area, west side, view south



Plate 4: Pits [108] & [122], view west



Plate 5: Deposits (103) & (104), view north



Plate 6: Pipe trench, view south

## 11 APPENDIX 2: CONTEXT INDEX

Context No.	Cut	Туре	Category	Section	Description
100	0	Layer	Topsoil	1	Moderate to friable, dark greyish-brown silty sand with occasional brick rubble
101	0	Layer	Subsoil	1	Friable to moderate, mid-greyish-brown silty sand with rare brick rubble
102	0	Layer	Natural	0	Stiff, light yellowish-white chalk with occasional friable light brownish-orange sand
103	0	Layer	Layer	1	Moderate to friable, mid-to dark greyish-brown silty sand with rare brick rubble
104	0	Layer	Layer	1	Moderate, mottled light yellow/mid-greyish-brown silty sand
105	122	Fill	Pit	2	Moderate, mid-brownish-grey silty sand
106	108	Fill	Pit	2	Stiff to moderate, light yellowish-grey silty clay
107	108	Fill	Pit	2	Moderate, dark to mid-greyish-brown silty sand
108	108	Cut	Pit	2	Circular in plan, vertical sides, flat base
109	0	Layer	Made Ground	3	Paving slabs
110	0	Layer	Made Ground	3	Loose to moderate, light orangish-yellow sand with abundant brick rubble
111	0	Layer	Made Ground	3	Moderate to loose, dark brownish-grey silty sand with abundant brick rubble
112	0	Layer	Made Ground	3	Moderate, mid-greyish-yellow sand with abundant rubble
113	114	Fill	Robbed Wall	5	Moderate, mid-brownish-yellow silty sand with abundant brick rubble
114	114	Cut	Robbed Wall	5	Linear in plan, east to west aligned, steep sides, flat base
115	116	Fill	Ditch	6	Moderate, light to mid-greyish-brown silty sand
116	116	Cut	Ditch	6	Linear in plan, east to west aligned, moderate sides, flat base
117	118	Fill	Pit	7	Moderate to friable, dark greyish-brown silty sand
118	118	Cut	Pit	7	Rectangular? in plan, vertical to steep sides, flat base
119	118	Fill	Pit	7	Moderate, mid-brown silty sand
120	121	Fill	Pit	8	Moderate, light to mid-brownish-grey silty sand
121	121	Cut	Pit	8	Circular in plan, moderate to steep sides, flat base
122	122	Cut	Pit	2	Circular in plan, moderate sides, concave base

### 12 APPENDIX 3: OASIS FORM

OASIS ID: preconst1-367999

Project details

Project name Wandlebury Pond Watching Brief

A programme of archaeological monitoring of groundworks relating to the restoration and enlargement of an existing pond at Wandlebury Country Park, Stapleford, Cambridgeshire CB22 3AE (NGR TL 49413 53421) on the 13th and 22nd of November 2019. The watching brief over the area of the pond enlargement identified two pits, dating to the Late Bronze Age to Early Iron Age period, as well as partly defining the extent of truncation relating to the existing pond. The pipe trench excavated from the pond to the north-eastern corner of West House exposed a further four archaeological features, as well as deposits relating to the demolition of Gogmagog House in 1956. One of these features was orientated off the former line of the northern wall of this property and is thought to represent a robber cut for a wall relating to it. The remaining three features probably represented two pits and a ditch; the ditch and one of the pits did not contain artefact assemblages, although the fills were of a similar character to the Iron Age pit identified in the footprint of the pond. The final pit could be dated to the postmedieval to Modern period. The prehistoric features uncovered are of a comparable date and character to those discovered during the partial excavation of the periphery of the hillfort interior in 1994-1997 by the

Cambridge Archaeological Unit and demonstrate this activity continues

Short description of the project

Project dates Start: 13-11-2019 End: 22-11-2019

Previous/future work Yes / No

Any associated project

reference codes

ECB6008 - Sitecode

further into the hillfort interior.

Type of project Recording project

Site status Scheduled Monument (SM)

Current Land use Other 5 - Garden

Monument type PIT Iron Age

Monument type DITCH Uncertain

Monument type WALL Post Medieval

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Monument type PIT Uncertain

Monument type PIT Post Medieval

Monument type POND Modern

Significant Finds STRUCK FLINT Late Prehistoric

Significant Finds POT Iron Age

Significant Finds POT Post Medieval

Significant Finds CBM Post Medieval

Investigation type "Watching Brief"

Prompt Scheduled Monument Consent

**Project location** 

Country England

CAMBRIDGESHIRE SOUTH CAMBRIDGESHIRE STAPLEFORD

Site location Pond Restoration, Wandlebury Country Park, Stapleford,

Cambridgeshire

Postcode CB22 3AE

Study area 900 Square metres

TL 49413 53421 52.158382001636 0.184487612266 52 09 30 N 000 Site coordinates

11 04 E Point

Height OD / Depth Min: 71m Max: 74m

Project creators

Name of Organisation Pre-Construct Archaeology Limited

Project brief originator no brief

Project director/manager Tom Woolhouse

Project supervisor Lawrence Morgan-Shelbourne

Type of sponsor/funding body Charity

Name of sponsor/funding

Cambridge Past, Present and Future

body

Project archives

Physical Contents "Animal Bones", "Ceramics", "Environmental", "Worked stone/lithics"

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Digital Archive recipient CCC County Archaeology Store

Digital Contents "Animal Bones", "Ceramics", "Environmental", "Worked stone/lithics"

Digital Media available "Database", "Text"

Paper Archive recipient CCC County Archaeology Store

Paper Contents "Animal Bones", "Ceramics", "Environmental", "Worked stone/lithics"

"Context sheet","Photograph","Plan","Report","Section","Survey

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