

Archaeological Watching Brief Report

June 2019

Client: Waterman Infrastructure & Environment Ltd

Issue No: 01 OA Reference No: 7404 NGR: SP 58290 20655





Client Name:	Waterman Infrastructure & Environment Ltd
Document Title:	Pond B, Graven Hill, Bicester, Oxfordshire
Document Type:	Watching Brief Report
Grid Reference:	SP 58290 20655
Site Code:	AMOD19
Invoice Code:	AMODWB2
Receiving Body:	Oxfordshire County Museum Service
Accession No.:	OXCMS:2015.173
OA Document File Location:	X\a\AMODEV_Gravenhill_Bicester_Oxon\002Reports\ 07_WB_2019
OA Graphics File Location:	N:\A_invoice codes\AMODWB2
Issue No:	01
Date:	June 2019
Prepared by:	James Mumford (Project Officer)
Checked by:	Steve Lawrence (Senior Project Manager)
Edited by:	Martyn Allen (Senior Project Manager)
Approved for Issue by:	David Score (Head of Fieldwork, OAS)
Signature:	

DowidScore

Disclaimer:

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

OA South Janus House Osney Mead Oxford OX2 OES

t. +44 (0)1865 263 800

OA East 15 Trafalgar Way Bar Hill Cambridge CB23 8SQ

t. +44 (0)1223 850 500

e. info@oxfordarch.co.uk w. oxfordarchaeology.com Oxford Archaeology is a registered Charity: No. 285627 OA North Mill 3 Moor Lane Mills Moor Lane Lancaster LA1 1QD t. +44 (0)1524 880 250



Director and Chief Executive Gill Hey, BA PhD FSA MCItA Private Limited Company, No:1618597 Registered Charity, No:285627 Registered Office: Oxford Archaeology Ltd Jonus House, Osney Medd, Oxford OX2 0ES



Pond B, Graven Hill, Bicester, Oxfordshire Archaeological Watching Brief Report

Contents

Summ	ary	vii			
Acknowledgementsviii					
1	INTROD	UCTION			
1.1	Scope of wor	٢1			
1.2	Location, top	ography and geology1			
1.3	Archaeological and historical background1				
2	WATCH	ING BRIEF AIMS AND METHODOLOGY7			
2.1	Aims	7			
2.2	2 Methodology7				
3	RESULT	5			
3.1	L General soils and ground conditions8				
3.2	2 Description and results of watching brief				
4	DISCUS	SION9			
4.1	Watching Brid	ef objectives and results9			
4.2	Discussion	9			
APPE	NDIX A	DESCRIPTIONS AND CONTEXT INVENTORY			
APPE	NDIX B	BIBLIOGRAPHY11			
APPE	NDIX C	SITE SUMMARY DETAILS			



List of Figures

Figure 1 Site location Figure 2 Pond B excavation area

List of Plates

- Plate 1 Pond B under construction
- Plate 2 Pond B section showing the depth of redeposited clay
- Plate 3 Pond B following excavation
- Plate 4 Pond B drainage pipe trench



Summary

Oxford Archaeology was commissioned by Waterman Infrastructure & Environment Ltd to undertake a watching brief during the construction of a pond within the Graven Hill development, Bicester, Oxfordshire (SP 5829 2065). The pond covered an area of 650m² and was constructed between 9th and 23rd May 2019.

No archaeological deposits were encountered within the pond area or the drainage pipe trench.

vii

©Oxford Archaeology Ltd

Acknowledgements

Oxford Archaeology would like to thank Waterman and Graven Hill Village Development Company for commissioning this project. Thanks are also extended to Careys who undertook the construction work of the pond and allowed ease of access for the OA staff.

The project fieldwork was undertaken by James Mumford and was managed for Oxford Archaeology by Steve Lawrence.



1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology (OA) was commissioned by Waterman Infrastructure & Environment Ltd to undertake a watching brief at the site of new pond on the development site at Graven Hill, Bicester, Oxfordshire.
- 1.1.2 The pond is within Land Transfer Area 2 (LTA2), which is yet to be subjected to intrusive archaeological investigation and lies outside of the existing planning permission for LTA1. The scope for this watching brief was agreed between Waterman and the planning archaeologist advising the Cherwell District for Oxfordshire County Council (OCC). A formal written scheme of investigation (WSI) was not requested by OCC for this work. However, OA undertook all fieldwork following published national and regional guidelines.

1.2 Location, topography and geology

- 1.2.1 Graven Hill is located to the south-west of Bicester (Fig. 1). The pond is located between the existing building E4 and a water tower within the western part of the Graven Hill development (Fig. 2). It is situated on relatively flat ground at approximately 70.0–70.8m aOD and is currently an area of maintained grass. The pond is centred at SP 58290 20655.
- 1.2.2 The solid geology comprises clay from the Oxford Clay Formation with the Peterborough Member (mudstone) exposed across most of the site and part of the Stewartby Member exposed on the slopes of Graven Hill (BGS nd).

1.3 Archaeological and historical background

1.3.1 The site history presented below is reproduced from a WSI produced for the previous phases of site investigation (Waterman 2015), which summarises the background set out in the Environmental Statement (ES), authored by Amec (2011a and 2011b), and submitted with the planning application for the primary phase of development (LTA1). In addition, relevant information from the mitigation phase of excavations has been included by period.

Prehistory

- 1.3.2 Prior to the 2015 evaluation there were no recorded remains dating to this period within the development boundary. Evidence of prehistoric settlement and activity within the 1km study area used for the baseline presented in the ES comes from a variety of sources, including those recorded by excavation, sites identified as cropmarks on aerial photographs, and as artefact finds.
- 1.3.3 Cropmark evidence from aerial photography includes two possible round barrows of probable Bronze Age date visible as ring ditches to the north-west of the site. In addition, a banjo-type enclosure, three hut circles and a number of sinuous ditches have been identified on aerial photographs to the immediate south-west of the Roman town at Alchester. These have been interpreted as possible evidence for pre-Roman settlement in this area. Further evidence recorded in the Oxfordshire Historic

Environment Record (HER) includes a Bronze Age palstave found in the vicinity of Alchester Roman Town and a Bronze Age spearhead south of Graven Hill. There are also several late Iron Age pottery find-spots recorded on the HER.

- 1.3.4 There has been some suggestion in the past that Graven Hill was an Iron Age hillfort and that a linear earthwork, which is still visible within Graven Hill Wood, formed part of the ramparts. However, these earthworks were investigated by several trial trenches in 1999, with no clear evidence of Iron Age activity being recovered. There is no other known evidence for Iron Age activity within Graven Hill Wood and an alternative interpretation of the earthworks representing the remains of post-medieval lynchets of agricultural origin appears to be more likely.
- 1.3.5 Iron Age settlements have been identified at Chesterton Lane and Bicester Fields Farm. The Chesterton Lane site was investigated in advance of the dualling of the A41 (then the A421) and identified the presence of middle Iron Age gullies, postholes and subrectangular enclosures. An isolated Bronze Age burial was also identified. The Bicester Fields Farm site is north of Graven Hill and excavation identified an Iron Age enclosure of two phases, including pits, boundary ditches and both human and animal burials. A late Iron Age date was identified on the basis of the pottery assemblage. Other finds suggested a pastoral economy with unusually large cattle and ironworking indicating that the farmstead may have been of relatively high status. Evidence for earlier prehistoric (Mesolithic) activity was also identified.
- 1.3.6 The 2015 evaluation did encounter prehistoric remains at three different locations. The earliest significant find was a Neolithic polished flint axe fragment. This was recovered from a subsoil deposit within the western part of the evaluation area (Trench 3) although additional artefacts or features of this date were absent. Late Iron Age activity was evidenced by a dispersed group of ditches and pits focused on Trenches 21, 22 and 24. Further late Iron Age ditches were recorded to the north of Circular Road within Trenches 12 and 13. Excavations of these two area in 2017 confirmed the evaluation results with a scattered area of pits and a sparse arrangement of linear ditches present in Area A (Trenches 21, 22 and 24). More focused activity was present in Area C (Trenches 12 and 13). An arrangement of ditches, pits and smaller gullies appears to define an area of settlement. In addition, Area E was excavated on the higher slopes of Graven Hill also comprising ditches, pits and postholes defining possible settlement.

Romano-British

1.3.7 The principal Roman settlement in the area is the town of Alchester, a Scheduled Monument. Together with the associated Roman roads, one of which crosses the site, Alchester defines the Roman settlement pattern in the immediate surrounds of the site. Other areas of Roman settlement were also present, including a site which has been excavated at London Road in Bicester. This was within an area of raised ground between two palaeo-channels, and comprised a large number of ditches, pits and postholes. The excavation presented a picture of settlement within an area that was generally wet and marshy. Another Roman-period site has been excavated to the north of Graven Hill at Oxford Road. Evaluation revealed extensive survival of late Iron Age and Romano-British settlement within the floodplain of Langford Brook. All identified

features were preserved under post-Roman alluvium, and appeared to represent two phases of occupation. The first of these phases was dated to the 1st century AD, and the second to the 2nd century AD. It was interpreted as a low-status rural site typical of the Upper Thames region for the period, at a time when increasing agricultural intensification required use of previously marginal land.

1.3.8 A feature of interest in the early editions of OS mapping is the course of Langford Lane which ran within the Graven Hill site boundary. From its current location at Alchester, the lane continued toward Merton, remaining outside of the site boundary. The other branch continued to the east, following a line on the north side of Graven Hill, within the site boundary, joining the line of Akeman Street at Wretchwick Farm. Given its location, it is possible that this may be a survival of the original Roman road which led east from Alchester to link with Akeman Street, and it is marked as such on early editions of the OS map. This route appears to have survived the initial construction of the Graven Hill ordnance depot, as it can be seen on aerial photographs of 1945 as a double line of trees. There is also a significant body of evidence of Roman occupation documented in the Oxfordshire HER in the form of numerous artefactual finds, many of which have been within and around Alchester or along the known routes of Roman roads.

The 2015 evaluation and 2017 excavations

- 1.3.9 The route of Akeman Street was investigated within the development boundary along its eastern extent where the hedge lines had been removed in the later 20th century. This identified a track or road surface constructed of limestone pieces set within a shallow terrace into the hill slope within Trenches 49, 58 and 59. No dating evidence was present, although the absence of modern material suggests that the road surface was sealed by silting layers prior to the military occupation and use of the site.
- 1.3.10 Further Roman remains were encountered within the northern part of the development boundary, adjacent to the current Rodney House building. Trenches 39-42 each produced a number of linear ditches, three of which produced moderate–large pottery assemblages dated mid–late 2nd century. The relative sterility of several other ditches and the apparent phasing represented by intersections and recuts demonstrate a degree of longevity to the activity here. The ditch arrangements are suggestive of field boundaries or other small enclosures. It is possible that this activity or occupation may relate to a known building of some pretension beyond the LTA1 and development boundary to the WNW near to Langford Park Farm.
- 1.3.11 Excavation of part of this area in 2016/17 revealed a Roman rectilinear field arrangement that produced a sparse assemblage of pottery.

Medieval

1.3.12 There is relatively little known of the early medieval settlement within the area. Bicester appears to have been established as a Saxon settlement in the 6th century and was named as Burencestre in the Domesday Book. The name has been described as either meaning 'fort of Bern' with 'Bern' being derived from the personal name for Beorna, or alternatively being derived from two separate elements – 'byrgen' meaning burial mound, and 'ceaster' meaning Roman fort. The earliest excavated evidence for

settlement within the town is from a site to the rear of the King's Arms, which lies to the north of Graven Hill. Excavated remains included pits, gullies and evidence for a number of sunken-featured buildings, which may represent former houses. The 1st edition OS map of 1885 includes the note 'site of battle between the Danes and Saxons in 871 AD' within Graven Hill Wood. However, there is no other known reference to an early medieval battle at this location and it is not clear on what this is based. Without further evidence, this record should be treated with caution.

- 1.3.13 The 1st edition OS also indicates the boundary between the parishes of Ambrosden and Merton cutting across Graven Hill Wood. The division into two halves may be significant since they are divided by a dry ditch starting at the northern 300ft contour and rising with the landscape to about 370ft and down again to the southern 300ft contour. The two halves of woodland measure approximately 53.333 acres each. It may be that the woodland was equally divided between the parishes of Ambrosden and Merton (Oxfordshire HER ref. 13593).
- 1.3.14 Ambrosden formed the principal medieval settlement within its parish, though other settlements are also known, such as the one at Arncott. During the medieval period, much of the land around Graven Hill appears to have been in arable use, and the Victoria County History records that the agricultural land of Ambrosden village was organised around three main fields known by the 17th century as East, South and West Fields. The extent of arable cultivation is indicated on aerial photographs of the 1940s which show ridge-and-furrow earthworks (derived from medieval and post-medieval ploughing) on much of the land surrounding the hill, including some on the lower slopes. There was also a medieval settlement at Wretchwick, to the north of Graven Hill, and possibly extending into its lower slopes. Wretchwick, now a Scheduled Monument, was in the possession of Bicester Priory, before being depopulated by the priory to make way for sheep grazing.
- 1.3.15 Previously unknown medieval activity was identified by the 2015 evaluation within the central area of the development boundary. Trenches 32 and 35 both produced evidence for medieval activity spanning the 12th–14th centuries. This comprised a series of linear ditches, although it is unclear what these represent in terms of activity or settlement. However, the presence of domestic pottery and a buckle does suggest that some contemporary occupation was located within the vicinity.
- 1.3.16 Subsequent excavation in 2017 revealed the remains of a deserted medieval village (DMV) comprising approximately six–eight dwellings accompanied by metaled surfaces leading north-east towards the scheduled Wretchwick DMV and south-west to join Akeman Street as this passes the north side of Graven Hill.

Post-medieval

1.3.17 The site is shown in detail on a series of OS maps dating from 1880 onwards. In 1880, the Graven Hill site is shown comprising a series of enclosed fields arranged around Graven Hill Wood. A single farmstead was present within the site boundary in 1880, located on the southern edge of Graven Hill Wood, and known as Mount Pleasant. A building is shown on this location on the aerial photographs of 1944–45 and it is possible that Mount Pleasant survived until the development of St David's Barracks in the 1950s.

20th Century

- 1.3.18 The major development of the 20th century, which has shaped the current form of the site, was the establishment of the Central Ordnance Depot I 1941 during World War Two (WWII). The Bicester site was chosen as it was located within southern England, with good road and rail links, and with sufficient space for the creation of a dispersed complex required for protection against air attack. It was also felt that the presence of Graven Hill would provide some additional protection in this regard. The depot was to spread over a wide area, occupying a number of sites from Graven Hill in the north to Arncott and Piddington in the south, collectively known as MOD Bicester.
- 1.3.19 The selection of MOD Bicester was approved in May 1941 and construction began soon after. Initial construction involved the laying of a 42-mile military rail network within and linking the various sites, followed by construction of the warehouse buildings. Graven Hill comprised D Site (armaments stores) to the south and E Site (small arms) to the north. Stores began to be issued from the MOD Bicester depot in August 1942, and it remained a key supply point for the army for the remainder of the war.
- 1.3.20 The entry of the United States into the war led to the arrival of large numbers of American troops into Britain, and it was necessary to provide depot facilities for their equipment. This operation was codenamed Bolero and at Bicester it involved the construction of temporary warehousing in the form of groups of Romney huts served by rail spurs and roads. The completed depot at MOD Bicester served as a key facility in supplying equipment for the Normandy landings in June 1944 and the subsequent European campaign. It was also necessary to provide accommodation within the depot for a workforce which during construction reached 24,000, and this was provided by Nissen huts organised into nine self-contained camps. Three of these, Camp nos 5, 6 and 7, were located on the slopes around Graven Hill Wood. This is depicted in the earliest aerial photography available for the site. In 1944 much of the agricultural land surrounding the depot was occupied by ridge and furrow, and areas of ridge and furrow also survived within the depot. Changes visible on aerial photographs within the Graven Hill site are:
 - Construction of St David's Barracks by 1954;
 - Removal of hutted accommodation north of Graven Hill Wood by 1959;
 - Removal of more hutted accommodation by 1966 and felling of trees within Graven Hill Wood;
 - Presence by 1975 of only a small number of accommodation huts. Graven Hill Wood had been replanted and no ridge and furrow earthworks are shown to survive within the site; and
 - Removal of all accommodation huts by 1989.
- 1.3.21 In addition, the sequence of aerial photographs shows the gradual removal by ploughing of ridge and furrow from the surrounding agricultural land, and this was largely absent by 1975. MOD Bicester continued to operate as a Central Ordnance Depot in the post-war period, though the military workforce was gradually replaced by an increasing number of civilian workers. This resulted in a need for civilian workers to move into the area and for some new housing to be built in Bicester to

accommodate them. The temporary hutted accommodation camps were gradually removed and in 1956 new barracks had been completed to the west of Graven Hill Wood on the current St David's Barracks site. Other changes include the removal of the Bolero warehouses in the period after WWII.

- 1.3.22 In 2006, two trial trenches were excavated within a former tennis court at St David's Barracks in advance of the construction of an accommodation block, though no archaeological features were identified.
- 1.3.23 Activity relating to the 20th-century military use of the site and the subsequent return to pasture was recorded across many parts of the 2015 evaluation. Numerous remains relating to the military camp were encountered. These were almost entirely represented by the destruction and demolition debris resulting from the clearance of the site as part of the reinstatement to pasture fields. These remains are not significant, although interesting pottery assemblages often depicting the date of manufacture within the war period were present. Notable assemblages were recovered from Trench 11.



2 WATCHING BRIEF AIMS AND METHODOLOGY

2.1 Aims

- 2.1.1 The project aims and objectives were to:
 - i. establish the presence/absence of any archaeological remains;
 - ii. determine and confirm the character of any remains present;
 - iii. determine or estimate the date range of any remains from artefacts or otherwise;
 - iv. determine the geo-archaeological and palaeo-environmental potential of any archaeological deposits encountered where appropriate;
 - v. recover suitable materials for scientific dating where appropriate;
 - vi. make available the results of the investigation;
 - vii. produce a factual report, full archive and HER data submission; and to
 - viii. disseminate the results of the investigation at a level appropriate to their importance.

2.2 Methodology

- 2.2.1 The area of the new pond was marked out by Careys working as the construction principal contractor. Following this, the turf and topsoil was removed to a depth of 0.1m using a mechanical excavator fitted with a ditching bucket. All machine operations to remove the arisings from the pond were completed under direct archaeological observation and guidance. The interior of the pond was excavated in controlled spits to remove deposits to the surface of the natural geology. Following assessment of the resultant surface for the presence of any archaeological remains and confirmation that these were absent, the attending archaeologist allowed the machine excavation to continue to the full construction depth and profile. Arisings from the pond were used to profile the side and surroundings of the pond.
- 2.2.2 Drainage pipe trenches leading to the pond were also excavated and recorded following a similar method.



3 RESULTS

3.1 General soils and ground conditions

- 3.1.1 The soil sequence across the pond was uniform. The natural clay geology was overlain by a layer of redeposited clay, which in turn was overlain by topsoil. The redeposited clay was absent from the pipe trench to the north of the pond.
- 3.1.2 Ground conditions throughout the watching brief were generally good, and the site remained dry throughout.

3.2 Description and results of watching brief

- 3.2.1 No archaeological features were present during the construction of the pond. The pond measured 38m x 17m and excavated to a final depth of approximately 1m. Two trenches for drainpipes from the two new roads were excavated to link storm drains to the pond (Fig. 2; Plates 1-4).
- 3.2.2 The pond excavation revealed a 0.10m to 0.15m thick dark grey brown silt clay topsoil and turf. This sealed a redeposited natural clay layer measuring 0.45m to 0.55m thick. This was light yellowish-brown with light grey patches with a similar appearance to the underlying natural geology. This was from the construction of the camp buildings during their construction during the war. This sealed a the natural of light brown clay with patches of light grey and pale brown silty clay. A number of service trenches of 1m to 1.3m deep for water pipes relating to the water tower and camp mains were observed and were sealed below the redeposited natural.



4 **DISCUSSION**

4.1 Watching Brief objectives and results

4.1.1 The watching brief fulfilled its primary objective and confirmed the absence of archaeological deposits within the impact of the pond construction.

4.2 Discussion

- 4.2.1 The deposits that were encountered comprised redeposited clay geology that had been levelled and landscaped. It is likely that this derived from the arisings associated with the construction of the military storage buildings within Graven Hill. Some of these, including the adjacent E4 building, are partly terraced into the slope which would have generated large volumes of clay. The former topsoil had been partly removed and disturbed prior to the dumping of the clay over the area with a clear brown band visible across parts of the site towards the base of clay.
- 4.2.2 No archaeological features or deposits were present.



APPENDIX A DESCRIPTIONS AND CONTEXT INVENTORY

Pond B						
General description						
No archaeological deposits present. Thin topsoil deposit overlying				Length (m)	38	
sterile redeposited natural clay. This directly lay over natural clay.			Width (m)	17		
			Avg. depth (m)	1		
Context	Туре	Width	Depth	Description	Finds	Date
No.		(m)	(m)			
1	Layer	-	0.15	Topsoil	-	-
2	Layer	-	0.55	Redeposited natural clay	-	-
3	Layer	-	-	Natural (Oxford Clay)	-	-



APPENDIX B BIBLIOGRAPHY

Amec, 2011a Future Defence Storage and Redistribution Programme - Redevelopment of MOD Bicester - Environmental Statement Volume 1: Non-technical Summary. September 2011

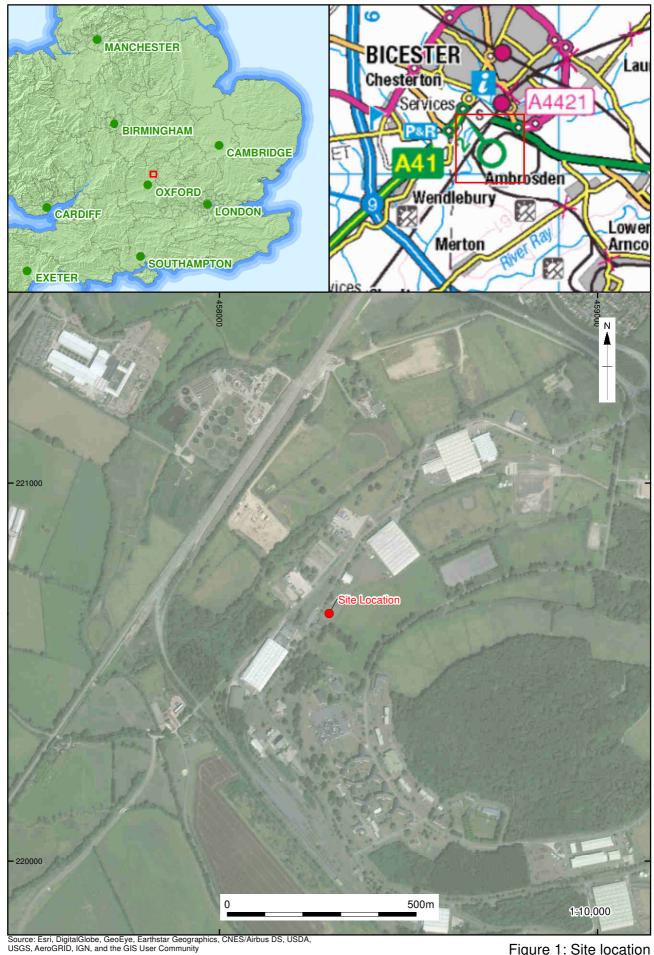
Amec, 2011b Future Defence Storage and Redistribution Programme - Redevelopment of MOD Bicester - Environmental Statement Volume 2: Main Report. September 2011

BGS, nd *Geology of Britain Viewer*, British Geological Survey (NERC), <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Waterman, 2015 Gravenhill, Bicester. Outline Written Scheme of Investigation (Planning Application ref. 11/01494/OUT - Condition 71). Unpublished Client Report February 2015

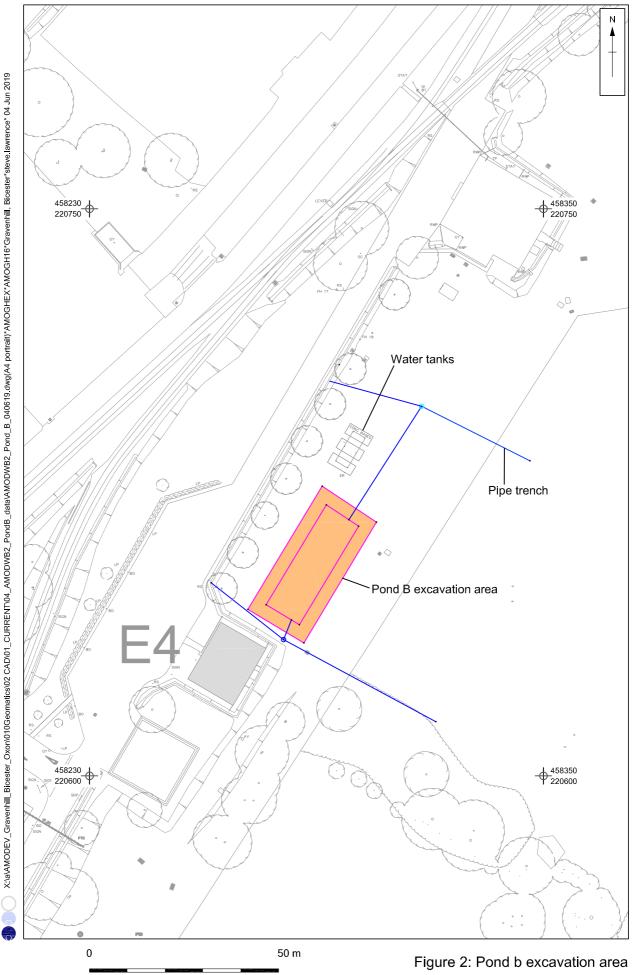


APPENDIX C	SITE SUMMARY DETAILS
Site name:	Pond B, Graven Hill, Bicester, Oxfordshire
Site code:	AMOD19
Grid Reference	centred on SP 58290 20655
Туре:	Watching Brief
Date and duration:	9th to 23rd May
Area of Site	Pond measured 38m x 17m x 1m with associated pipe trenches.
Location of archive:	The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 OES. This will be combined with the existing evaluation and watching brief archives and will be deposited with Oxfordshire County Museum Service in due course under the accession number OXCMS:2015.173.
Summary of Results:	Oxford Archaeology was commissioned by Waterman Infrastructure & Environment Ltd to undertake a watching brief during the construction of a pond within the Graven Hill development, Bicester, Oxfordshire (SP 5829 2065). The pond covered an area of 650m ² and was constructed between 9th and 23rd May 2019. No archaeological deposits were encountered within the pond area or the drainage pipe trench.



The Algorithm of the Al

Figure 1: Site location



Scale at A4 1:1000



Plate 1: Pond B under construction



Plate 2: Pond B section showing the depth of redeposited clay



Plate 3: Pond B following excavation



Plate 4: Pond B drainage pipe trench









Head Office/Registered Office/ OA South

Janus House Osney Mead Oxford OX20ES

t:+44(0)1865263800 f:+44(0)1865793496 e:info@oxfordarchaeology.com w:http://oxfordarchaeology.com

OANorth

Mill 3 MoorLane LancasterLA1 1QD

t:+44(0)1524541000 f:+44(0)1524848606 e:oanorth@oxfordarchaeology.com w:http://oxfordarchaeology.com

OAEast

15 Trafalgar Way Bar Hill Cambridgeshire CB238SQ

t:+44(0)1223 850500 e:oaeast@oxfordarchaeology.com w:http://oxfordarchaeology.com



Director: Gill Hey, BA PhD FSA MCIfA Oxford Archaeology Ltd is a Private Limited Company, N⁰: 1618597 and a Registered Charity, N⁰: 285627