Archaeology South-East

ASE

An Archaeological Evaluation at Lullingstone Country park, Castle Road, Eynsford, Kent

Planning Ref: SE/08/TEMP/0025

NGR: TQ 52609 63822

Project No: 3793
Site Code: LCP 09

ASE Report No. 2009052
OASIS id: archaeol6-57752

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Abstract

A programme of archaeological evaluation, including a contingency for geo-archaeological evaluation, was carried out at Lullingstone Country Park, Eynsford, Kent. The work was undertaken between the 16th and 18th March 2009 on behalf of Kent County Council.

Six evaluation trenches sampled the surface archaeology and a geo-archaeological test pit investigated the geological sequence.

The evaluation trenches revealed two significant features: a prehistoric, perhaps Mesolithic pit and a 3.1m wide perhaps Bronze Age droveway ditch. The suggested droveway ditch was an element of an extensive pattern of crop marks. Potentially very significant flintwork (possibly Upper Palaeolithic) and faunal material was also recovered from the upper facies of the Pleistocene Head.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), a division of University College London Centre for Applied Archaeology (UCLCAA), was commissioned by Kent County Council (KCC) to undertake an archaeological evaluation, with a contingency for geo-archaeological evaluation, of land at Lullingstone Country Park, Eynsford, Kent (NGR 552609, 163822; Figure 1).

1.2 Geology and Topography

1.2.1 The site is located on the west side of the River Darent where it cuts through the North Downs between Shoreham and Eynsford; Lullingstone Castle lies approximately 650m to the north. The site lies on a grassed car park and grassland immediately to the west of Lullingstone Country Park Visitor Centre.

1.2.2 The British Geological Survey (BGS) indicates that the site lies on Middle Chalk with a possible capping of undivided flood plain gravels, especially in the west.

1.3 Planning Background

1.3.1 The Heritage Conservation Group at Kent County Council advised that a condition for a programme of archaeological work should be applied to any consent on planning application SE/08/TEMP/0025. The Planning Applications Group at KCC applied the following condition to the final consent:

AR5 No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of

i. archaeological field evaluation works in accordance with a specification and written timetable which has been submitted to and approved by the Local Planning Authority; and

ii. following on from the evaluation, any safeguarding measures to ensure preservation in situ of important archaeological remains and/or further archaeological investigation and recording in accordance with a specification and timetable which has been submitted to and approved by the Local Planning Authority.

The proposed development is to extend the existing paved car park along with the alteration to the line of the existing western boundary fence and the widening of the entrance drive as well as planting along the southern boundary.

1.3.2 A Specification for the work was produced by the Heritage Conservation Group, Kent County Council. The documentation consisted of Part A, a site specific element and Part B, a set of guidelines covering general procedures (KCC 2009). In combination, these documents outlined the methods to be

used during the archaeological and geoarchaeological evaluation of the site, namely the excavation and recording of six 20m long, 1.8m wide archaeological evaluation trenches, and the excavation and recording of a maximum of two geo-archaeological test-pits.

1.4 Aims and Objectives

1.4.1 The aims of this work were outlined in Kent County Councils (KCC) Site Specific Requirements and are summarised below with due acknowledgement (KCC 2009).

- Assessing the likely impact of the proposed development on the archaeological remains using the results of the fieldwork
- Assessing the impact of past development on the site's archaeological potential.
- Assessing the potential of the site to contain nationally important remains
- Establishing the presence or absence and the date of the possible trackway feature in the south of the site, known only as a cropmark
- Establishing the degree of mediaeval and post-mediaeval activity on the site
- Establishing the degree of prehistoric and Roman activity on the site
- Contributing to the environmental, geo-archaeological and landscape history of the area

1.5 Scope of Report

1.5.1 This report details the findings of an archaeological and geoarchaeological evaluation undertaken by Dr Matt Pope (geoarchaeology) and Greg Priestley-Bell (surface archaeogy) between the 16th and 18th March 2009 inclusively. The project was managed by Neil Griffin (Project Manager) and Dan Swift (Project Manager, Post-Excavation).

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Archaeological Periods Represented

2.2.1 *Prehistoric*
Palaeolithic 450,000 - 10,000 BC
Mesolithic 10,000 - 5,000 BC
Neolithic 5,000 - 2,300 BC
Bronze Age 2,300 - 600 BC
Iron Age 600 - AD 42

2.2.2 *Historic*
Roman AD 42 - 410
Anglo Saxon/Early Medieval AD 410 - 1065
Medieval AD 1066 - 1485
Post-medieval AD 1486 – date

2.2 Summary

2.2.1 The site lies within an area of high archaeological potential connected with a number of Roman and Iron Age settlements located nearby within the park. Crop marks of enclosures and track ways are visible from aerial photographs of the site and one possible track can be seen to run through the southern part of the site. Remains connected with the later use of the site as a post-medieval landscape park may also be present while a partial geology of river terrace gravels may contain early prehistoric material.

2.2.2 The Historic Environment Record (HER) maintained by KCC, and held at County Hall, Maidstone, was consulted and the results are tabulated, numbered 1 – 45, in Appendix 1. Details were taken of all archaeological sites and listed buildings within a 1km radius of the centre of the site. The identified sites are plotted on Figure 1.

3.0 METHODOLOGICAL SUMMARY

3.1 For a more detailed description of the adopted methodology the reader is referred to the KCC specifications documents Parts A and B (KCC 2009). This section merely provides a summary of that methodology.

3.2 Six trial trenches, measuring 20m by 1.8m, were machine excavated across the area of proposed development under archaeological supervision (Figure 2). Although Trench 3 was excavated and recorded, it was subsequently found to be in an area subject to a watching brief.

3.3 The specified layout of Trenches 1, 2, 4, 5 and 6 was altered slightly due to unforeseen obstacles on site as follows: Trench 4 was excavated in two parts and its orientation changed to avoid a footpath and the concrete base of a picnic table; the orientation of Trench 2 was changed to avoid a fence; Trench 5 was moved slightly to avoid tree stumps.

3.4 The trial trenches were scanned prior to excavation using a Cable Avoidance Tool (CAT). All of the trenches were excavated under constant archaeological supervision, using an 8 tonne 360° tracked excavator, fitted with a toothless ditching bucket. Revealed surfaces were manually cleaned in an attempt to identify any archaeological deposits or features. The sections of the trenches were selectively cleaned to observe and record their stratigraphy. All spoil removed from the trenches was scanned visually and with a metal detector for the presence of unstratified artefacts.

3.5 All encountered archaeological deposits, features and finds were recorded according to accepted professional standards in accordance with the approved ASE Written Scheme of Investigation using pro-forma context record sheets. Sections through archaeological features and deposits were drawn at a scale of 1:10. Deposit colours were verified by visual inspection and not by reference to a Munsell Colour chart.

3.6 A full photographic record of the trenches and associated deposits and features was kept (including monochrome prints, colour slides and digital), and will form part of the site archive. The archive is presently held at the Archaeology South-East offices at Portslade, East Sussex, and will in due course be offered to a suitable local museum.

3.7 Only undifferentiated topsoil, subsoil and overburden of recent origin was removed by machine and kept separately. The excavation was taken, in spits of no more than 0.1m for the top and sub soil, down to the top of the first significant archaeological horizon or the top of the underlying ‘natural’.

Number of Contexts	25 contexts
No. of files/paper record	1 file
Plan and sections sheets	2 sheet (4 sections)
Photographs	32 photographs

Table 1: Quantification of site archive

4.0 ARCHAEOLOGICAL RESULTS

(Figures 3 – 7)

4.1 Trench 1

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
1/001	Deposit	Topsoil	Tr.	Tr.	0.30 m	49.80m (N)
1/002	Deposit	Made ground	Tr.	Tr.	0.20 m	49.50m
1/003	Deposit	Colluvium	Tr.	Tr.	0.10 m	49.30m
1/004	Deposit	Natural	Tr.	Tr.	N/A	49.10m

Table 2: Recorded contexts within Trench 1

4.1.1 Topsoil [1/001] consisting of dark reddish brown silt with many flints overlay made ground [1/002] consisting of dark reddish brown clayey silt with occasional flints. Deposit [1/002] overlay colluvium consisting of mid reddish brown clayey silt. Natural [1/004] was light yellowish brown clay silt with very frequent flint nodules, (similar to the head deposit, [6/003] identified in Trench 6). No archaeological features were revealed.

4.2 Trench 2

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
2/001	Deposit	Topsoil	Tr.	Tr.	0.30 m	50.63m (N)
2/002	Deposit	Made Ground	Tr.	Tr.	0.20 m	50.33m
2/003	Deposit	Colluvium	Tr.	Tr.	0.10 m	50.13m
2/004	Deposit	Natural	Tr.	Tr.	N/A	50.03m

Table 3: Recorded contexts within Trench 2

4.2.1 Topsoil [2/001] consisting of dark reddish brown silt with many flints overlay made ground [2/002] consisting of dark reddish brown clayey silt with occasional flints. Deposit [2/002] overlay colluvium consisting of mid reddish brown clayey silt. Natural [2/004] was light yellowish brown clay silt with very frequent flint nodules, (similar to the head deposit, [6/003] identified in Trench 6). . No archaeological features were revealed.

4.3 Trench 3

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
3/001	Deposit	Topsoil	Tr.	Tr.	0.20 m	66.31m
3/002	Deposit	Colluvium	Tr.	Tr.	0.10 m	66.11m
3/003	Deposit	Natural	Tr.	Tr.	N/A	66.01m

Table 4: Recorded contexts within Trench 3

4.3.1 Topsoil [3/001] consisting of dark reddish brown silt with many flints overlay colluvium [3/002] consisting of mid reddish brown clayey silt. Natural [3/003] was light/mid yellowish brown clay silt with localised patches of chalk peagrit and flint nodules, (similar to the head deposit, [6/003] identified in Trench 6). No archaeological features were revealed.

4.4 Trench 4a/4b

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
4/001	Deposit	Topsoil	Tr.	Tr.	0.20m	49m (N)
4/002	Deposit	Colluvium	Tr.	Tr.	0.10m	48.80m
4/003	Deposit	Natural	Tr.	Tr.	N/A	48.70m
4/004 (a)	Cut	Pit? Root?	1.3m	.95m	0.35m	49.31m
4/005 (a)	Fill	Fill of 4/004	1.3m	.60m	0.30m	49.03m
4/006 (b)	Cut	Ditch	Tr.	3.15m	1.6m	49.31m
4/007 (b)	Fill	Upper fill of 4/006	Tr.	3.15m	0.35m	
4/008 (b)	Fill	Lower fill of 4/006	Tr.	3m	0.6m	48.40m
4/009 (b)	Deposit	Bank remnant		o.7m	0.15m	49.46m
4/010 (b)	Deposit	Dump deposit	Tr.	Tr.	0.4m	49.58

Trench excavated in two sections – 4a (south) and 4b (north)

Table 5: Recorded contexts within Trench 4

4.4.1 Topsoil [4/001] consisting of dark reddish brown silt with many flints overlay colluvium [4/002] consisting of mid reddish brown clayey silt. Natural [4/003] was light/mid yellowish brown clay silt with localised patches of chalk peagrit and flint nodules (similar to the head deposit, [6/003] identified in Trench 6).

4.4.2 Cut [4/004a] contained a single fill [4/005a] of mid reddish brown clayey silt with 20% flints and occasional chalk flecks. Cut [4/006b] contained an upper fill [4/007b] of mid yellowish brown clayey silt with occasional flints (Figures 5 and 6). Fill [4/007b] overlay a lower fill [4/008b] of mid reddish brown clayey silt with very frequent flints and chalk peagrit. A localised deposit [4/009b] of mid-dark reddish brown clayey silt with 10% chalk peagrit and occasional flints lay on the southern edge of cut [4/006b]. Deposit [4/009b] was within an apparently localised dump deposit [4/010b].

4.5 Trench 5

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
5/001	Deposit	Topsoil	Tr.	Tr.	0.30 m	49.64m (N)
5/002	Deposit	Colluvium	Tr.	Tr.	0.10 m	49.34m
5/003	Deposit	Natural	Tr.	Tr.	N/A	49.24m

Table 6: Recorded contexts within Trench 5

4.5.1 Topsoil [5/001] consisting of dark reddish brown silt with occasional flints overlay colluvium [5/002] consisting of mid reddish brown clayey silt. Natural [5/003] was light/mid yellowish brown clay silt with localised patches of chalk peagrit and flint nodules, (similar to the head deposit, [6/003] identified in Trench 6). No archaeological features were revealed.

4.6 Trench 6

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
6/001	Deposit	Topsoil	Tr.	Tr.	0.30 m	49m (N)
6/002	Deposit	Colluvium/Head	Tr.	Tr.	0.25 m	48.70m (N)
6/003	Deposit	Natural Head	Tr.	Tr.	0.3m +	48.45m (N)
6/006	Cut	Pit?	1.5m min	1m	0.40m	48.76m
6/007	Fill	Fill of cut 6/006	1.5m min	1m	0.40m	48.37m
6/008	Deposit	Natural + bone				47.97m

Table 7: Recorded contexts within Trench 6

4.6.1 Topsoil [6/001] consisting of dark reddish brown silt with occasional flints overlay colluvium [6/002] consisting of mid reddish brown clayey silt. The 'natural' [6/003] was light/mid reddish brown silty clay with occasional groups of flints, becoming slightly darker moving from west to east down the trench.

4.6.2 Cut [6/006] contained a single fill [6/007] of mid-dark yellowish brown silty clay that produced worked and fire-cracked flint (Figure 7). The exact level at which the cut of [6/006] appeared was unclear, both during machining and in the resultant vertical section; some darkening of the fill [6/007] was certainly visible at a higher level than that at which the cut could be positively identified. A single animal bone was recovered from an apparently natural deposit [6/008] at the eastern end of the trench.

5.0 GEO-ARCHAEOLOGICAL RESULTS by Dr Matt Pope

5.1 A geo-archaeological test pit was excavated at the site and the following observations were recorded:

Geo-archaeological Test Pit 1 (western end of Trench 6)

Depth (m)	Stratigraphy	Lithology	Colour	Coarse component	Sample	Notes
0 -0.3m	Topsoil	Silt Clay	Dark Reddish Brown	20% sub-angular flint gravel 10-20mm	-	6/001
0.3m	Colluvium (Disturbed)	Clay Silt	Reddish Brown	10% sub-angular flint gravel 10-25mm	-	6/002a
0.5m	Colluvium	Clay Silt	Reddish Brown	10% sub-angular flint gravel 10-25mm	-	6/002b
0.6m	Decalcified Head	Silt Clay	Light Reddish Brown	20% sub-angular flint gravel 10-35mm	-	6/003
1.1m	Calcareous Head	Clay Silt	Yellowish Brown	20% sub-angular flint gravel 10-35mm 10% chalk pellet gravel 5-10mm	10L	6/008 Contained Bone (See Above)
1.2m	Sorted Head	Silts and Sand	Yellowish Brown	-		Possible fluvial sorting
2.0m	Brickearth	Silt	Greyish Brown	-	10L	
2.4 – 2.5m	Calcareous Head	Clay Silt	Yellowish Brown	20% chalk pellet gravel 10- 15mm 10% angulaf flint 10-20mm		Base of Hole at 2.5m

Table 8: Sediment sequence within Test Pit 1

5.2 At the western end of Trench 6 the section was deepened to record the relationship of the observed colluvial deposits with the underlying drift and solid geology. Although Cretaceous bedrock was beyond the reach of safe excavation, a section through a sequence of Head deposits was observed. These formed a sequence of Pleistocene periglacial deposits formed through a variety of processes including down-slope mass movement of gravel through gelifluction (Decalcified and Calcareous Head), fluvial sorting of Head deposits. Possibly by melt water (Sorted Head), and fine grained deposits (Brickearth) which may have a low energy fluvial origin or else be a product of windblown loess.

5.3 Contexts 6/003 and 6/008 (**4.6**) should be considered, from a sedimentary point of view, to be one unit, the difference between them due to differential decalcification of the matrix. This unit produced both flintwork and, in the lower undecalcifed portion, bone.

6.0 FINDS AND ENVIRONMENTAL

Context	Bone	Wt (g)	Worked Flint	Wt (g)	Fire-cracked flint	WT (g)
1/001			1	4		
2/001			3	112		
3/001			1	22		
4/008			13	330	5	298
6/003			16	176	18	186
6/007			9	34	21	370
6/008	4	102				

Table: 9 Quantification of finds

6.1 **Worked Flint** by Chris Butler

6.1.1 A small assemblage of 37 pieces of worked flint weighing 622gms was recovered during the excavations at Lullingstone Country Park (Table 9). In addition four pieces of un-worked fire-fractured flint (41gms) were found in context 6/003.

6.1.2 The assessment comprised a visual inspection of each bag, counting the number of pieces of each type of worked flint present, noting details of the range and variety of pieces, general condition, and the potential for further detailed analysis. A hand written archive of the assemblage was produced at this stage, together with an excel spreadsheet. Classification follows Butler (2005). Those pieces of flint that were obviously not worked were discarded during the assessment.

6.1.3 The raw material comprised a variety of different types of flint, including a light blue-grey patinated flint, mottled grey flint, and a mid to light grey patinated flint with small lighter and darker mottled patches.

Hard hammer struck flakes	11
Soft hammer-struck flakes	8
Soft hammer-struck blades	6
Bladelet fragments	2
Flake/blade fragments	7
Core rejuvenation flake	1
Core fragment	1
Side scraper	1
Total	37

Table: 10 Quantification of worked flint

Context No	Hard Hammer Flake	Soft Hammer Flake	Soft Hammer Blade	Bladelet Fragment	Fragment	Core rej. flake	Core frag	Side scraper	Total	Weight	FF	Weight
1/001		1							1	3		
2/001	1				1			1	3	112		
3/001		1							1	20		
4/008	5	2	3		2		1		13	330		
6/003	3	1	2	2	1	1			10	125	4	41
6/007	2	3	1		3				9	32		
Total	11	8	6	2	7	1	1	1	37	622		

Table 11: Worked flint type by context

6.1.4 The debitage in this assemblage is a mixture of different pieces. Although hard hammer-struck flakes predominate, a number of these, and most of the soft hammer-struck flakes and blades, have some evidence for platform preparation. There are also two bladelet fragments together with a single blade fragment and some flake fragments.

6.1.5 The pieces from Contexts 1/001, 2/001 and 3/001 are a variety of flint types, and include the only implement; a side scraper manufactured on a large soft hammer-struck flake.

6.1.6 Context 4/008 produced a group of 13 pieces, eight of which, including all of the blades and most of the pieces with platform preparation, have a light grey-blue patina. One blade also has a little iron staining. These pieces appear to be earlier in date than the remaining pieces in this context, possibly being Mesolithic or Early Neolithic in date.

6.1.7 Context 6/003 produced the most interesting group of material, comprising 10 pieces of struck flint, together with four un-worked fire fractured pieces. A long narrow soft hammer-struck blade with platform preparation measuring 112mm in length in a dark blue-grey lightly patinated flint has a remnant of cortex on its dorsal side along part of one lateral edge, and may have some utilisation damage along the remainder of the same lateral edge. A second piece is a fragment of a long blade core in a light blue-grey patinated flint. This piece appears to be the result of a plunging overshoot struck from the opposite end of a two-platform blade core, although the proximal end of the piece has been removed more recently. This may have been the result of an accidental blow, or possibly a purposeful attempt to rejuvenate the core to allow further removals. A number of other pieces in context 6/003 and 6/007 have similar patination and could also be of a similar date range.

6.1.8 Both of these pieces are typical of those found in the Upper Palaeolithic period, although similar long blades can also be found in Mesolithic and Early Neolithic contexts. The presence of two bladelet fragments might suggest a Final Upper Palaeolithic or Early Mesolithic date, but could equally suggest that the assemblage is mixed. Other Upper Palaeolithic finds have been made a little further north at Darenth and Crayford (Scott 2004).

Research potential

6.1.9 This assemblage is of great interest, and potentially very important, due to the presence of a number of pieces which could be Upper Palaeolithic in date. Further work at the site may produce a larger assemblage, from which hopefully further diagnostic pieces would be recovered, thus allowing confirmation of the date.

6.1.10 It is recommended that no further work be undertaken on this assemblage at present, although the flintwork should be retained for possible further study along with any further pieces recovered from the site in the future. The exception to this would be the long blade from Context 6/003 which could be further analysed for both residue and use-wear.

6.2 **The Animal Bone** by Gemma Driver

6.2.1 A cattle-sized long bone fragment was recovered from context [6/008]. The bone is extremely fragile and can not be identified to species. The soil around the bone was sampled and processed in the flotation tank. A total of 9g of bone was recovered from this sample, <3>, all of which are surface flakes. No evidence remains of pathology, gnawing or butchery.

6.3 **The Environmental Samples** by Lucy Allott

6.3.1 Three environmental samples were taken from pit and ditch fills during archaeological works to establish the presence of environmental remains including wood charcoal, macro plant remains, bone and shell.

6.3.2 Samples were processed in a flotation tank, the residues and flots being retained on 500 and 250µm meshes respectively. The residues were sieved through 4 and 2mm geological sieves and were sorted for environmental remains and artefacts (Table 11). Flots were scanned under a stereozoom microscope at x7-45 magnification and their contents recorded (Table 12).

6.3.3 Small assemblages of environmental remains including charcoal, land snail shells and plant macros are evident in these samples. Occasional cereal grains were noted in the flot from sample <3>, (6/008). These are poorly preserved and provide no potential for further work. Sample <1>, (4/008) is dominated by land snail shells and uncharred vegetation suggesting modern disturbance to this ditch fill.

6.3.4 Wood charcoal fragments in sample <2>, pit fill (6/007) and hand collected fragments from the same context have some potential to provide material suitable for dating should that be considered appropriate for this context and site. The charcoal assemblage is too small however to provide statistically viable information about vegetation and fuel use. A single charred vetch/tare (*Vicia*/*Lathyrus* sp.) seed was collected from the residue. Two worked flints were also recovered from this sample and one of these is a curved blade (broken in two). Both should be incorporated in the next phase of reporting.

6.3.5 With the exception of possible dating of charcoal from pit fill (6/007) no further work is recommended for the environmental remains from these samples. It should be noted however that these samples have highlighted the potential to recover environmental remains and this should be taken into account if further work is undertaken at the site.

Table 12:Residue Quantification (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and weights in grams.

Sample Number	Context	Context / deposit type	Sample Volume	sub-Sample Volume	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than	Weight (g)	Bone and Teeth	Weight (g)	Marine Molluscs	Weight (g)	Other (eg ind, pot, cbm)
1	4/008	Ditch Fill	40	40			**	<1			*	<1	***	4	FCF */24g
2	6/007	Pit Fill	20	20	**	4	***	2	*	<1			*	<1	FCF */60g Flint */2g
3	6/008		10	10			*	<1			***	8	*	<1	FCF */10g

Table 13: Flot Quantification (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and preservation (+ = poor, ++ = moderate, +++ = good).

Sample Number	Context	Flot volume ml	Uncharred %	sediment %	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	Bone	LSS
1	4/008	15	20	20			**					***
2	6/007	<5	30	40	*(1)		**					**
3	6/008	5	80	10		*	**	*	cerealia	+	* very small frags	**

7.0 DISCUSSION

7.1 Archaeological Results

Trench 4

7.1.1 Cut [4/004] did not produce any dating evidence and probably represented a tree throw or root tunnel. As the feature was only partly revealed in the side of the trench there is a possibility that it was an undated amorphous pit. Due to the apparent slight misplacement of the soilmark plot, there is a possibility that cut [4/004] represented the companion ditch of suggested droveway ditch [4/006]. The proximity of trees did not allow the trench to be extended in order to expose more of this feature.

7.1.2 Cut [4/006] was a substantial ditch. The remnant of an associated bank [4/009] was identified on the southern edge of the ditch; the position of the bank was confirmed by the apparent tip line between upper fill [4/007] and lower fill [4/008]. Bank [4/009] was within/below a localised dump deposit that perhaps represented a spread of disturbed bank material. A significant quantity of worked flint, together with fire-cracked flint, was recovered from both fills.

7.1.3 Trench 4 was targeted on an element of a trackway identified in Aerial Photographs as a soilmark/cropmark (SMR TQ 56 SW 76, No.43 Gazetteer of Sites, Appendix 1; Figure 1). Although ditch [4/006] did not exactly correspond with the position of the targeted soilmark (feature located *c.* 4.5m north-east of cropmark), the scale and alignment left no doubt that ditch [4/006] was an element of the northern side ditch of this trackway.

7.1.4 The presence of worked flint within the fills of ditch [4/006] and the scale and overall layout of the soilmarks suggests that the trackway represents a perhaps prehistoric droveway. However, the flintwork may be residual and the feature date to a later period. The alignment of the suggested droveway would allow stock to be moved to the river for watering and/or crossing. The enclosure at the western end of the droveway appears to be laid out in such a way as to allow the sorting and separation of livestock.

Trench 6

7.1.5 Pit [6/006] is probably Mesolithic or Early Neolithic, though more precise dating would be needed to confirm this. The single fill [6/007] produced significant quantities of worked and fire-cracked flint, together with occasional fragments of charcoal which may have the potential to refine the date of the feature. An apparently naturally lain deposit (Head) [6/008] produced a single very poorly preserved animal bone. This find had perhaps derived from further up the slope to the west and had been moved downslope by natural processes.

7.1.6 An apparently naturally lain deposit (Head) [6/003] produced a quantity of worked flint including two significant pieces: a long blade and a large blade core. These finds had perhaps derived from further up the slope to the west and had been moved downslope by natural processes.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Archaeological

8.1.1 Significant archaeology was recorded in two trenches: Trenches 4b and Trench 6. The character of the cut feature [4/004] in Trench 4a remains unclear.

8.1.2 In Trench 4b, the dating of ditch [4/006] is important as clarification might also help to date the extensive system of soilmarks seen in APs. Ditch [4/006] was visible in plan at *c.* 700mm below existing ground surface, while the top of the remnant bank [4/009] was within 550mm of the surface. While most of the depth of the ditch will be unaffected by the proposed development, it is possible that ground reduction may affect further bank remnants and expose more of the plan of the ditch. Ground reduction and tree clearance in this area may also confirm or otherwise whether cut [4/004] in Trench 4a represents the trackway/droveway companion ditch to [4/006].

8.1.3 In Trench 6, the suggested Mesolithic or Early Neolithic pit lay *c.* 900mm below the existing ground surface, and perhaps will be unaffected by the proposed development. However, potentially very significant flintwork (*possibly* Upper Palaeolithic – only 15 findspots for UP flintwork are recorded in Kent, 4 of which are stratified) was recovered from a deposit [6/003] that lay within *c.* 300mm of the existing ground surface. Although this material is likely to be residual, the condition of the flint blade suggests that it had not been transported very far. The deposit that produced the flintwork is very likely to be affected by the proposed groundworks.

8.2 Geo-archaeological

8.2.1 The sedimentary character of the site indicates a combination of both peri-glacial Head Formation and later Holocene colluvium. The presence of faunal and lithic material within the upper facies of the Pleistocene Head, while not ruling out introduction through later Holocene disturbance, may be significant; especially in light of potential impact through development.

8.2.2 In order to fully understand the sequence and its relationship to the underlying Cretaceous bedrock and the alluvial sequence of the Darent River, a short transect of further geoarchaeological test pits might be considered. This will allow the development of a first order stratigraphic model for the site, establish the relationship between earlier terrace deposits and more recent sedimentation as well a defining further the age and site formation processes of the lithic assemblage.

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Acknowledgements

ASE would like to thank Andy Gorman, Countryside Officer, for commissioning the work on behalf of KCC, and Adam Single of KCC for his guidance.

Appendix 1

Gazetteer of Sites, Finds and Listed Buildings within a 1 km radius of the site:

	NGR	SMR Reference	Period	Details/Description
1.	TQ 528 645	TQ 56 SW 59	Mesolithic	Tranchet axe from Lullingstone
2.	TQ 528 645	TQ 56 SW 69	Mesolithic	Two tranchet axes from Lullingstone
3.	TQ 528 639	TQ 56 SW 28	Probably Late Bronze Age	Bronze chisel from eastern bank of Darent at Eynsford
4.	TQ 5171 6342	TQ 56 SW 56	Prehistoric	Flint flake from Darent valley
5.	TQ 5209 6446	TQ 56 SW 50	Prehistoric	Flint flake from Darent valley
6.	TQ 5311 6340	TQ 56 SW 42	Prehistoric	Flint implement from Darent valley
7.	TQ 520 645	TQ 56 SW 15	Iron Age	Probable Iron Age field system, Eynsford
8.	TQ 5209 6451	TQ 56 SW 22	Iron Age - Roman	Iron Age/Late Iron Age (LIA) settlement at Lullingstone Park – field system, ditch, pottery and iron slag

9.	TQ 5241 6399	TQ 56 SW 16	LIA - Roman	Enclosure (site of), Lullingstone Park - pottery
10.	TQ 533 638	TQ 56 SW 26	Roman	2nd century Roman pottery from Darent valley opposite Lullingstone Castle
11.	TQ 5247 6472	TQ 56 SW 23	Prehistoric and Roman	Scatter of flint implements and Roman brick
12.	TQ 519 638	TQ 56 SW 31	Roman	Roman cremation near Lullingstone villa
13.	TQ 5285 6440	TQ 56 SW 112	Medieval – Post-Medieval	Site of tilt yard at Lullingstone Castle
14.	TQ 52573 63577	TQ 56 SW 17	Medieval - Post-Medieval	Shoreham Castle Farm, farm and manor house (remains of)
15.	TQ 52945 64466	TQ 56 SW 119	Medieval – Post-Medieval	Alms houses (site of), Lullingstone Castle
16.	TQ 5292 6437	TQ 56 SW 5/90	Medieval – Post-Medieval	Former stabling to south of gatehouse, Lullingstone Castle. Listed Building
17.	TQ 5256 6355	TQ 56 SW 38/1150	Medieval – Post-medieval	Castle farmhouse begun in 16th century. Listed Building
18.	TQ 5299 6443	TQ 56 SW 5/63 TQ 56 SW 1	Medieval – Post-Medieval	Church of St Botolph begun in early 14th century. Listed Building

19.	TQ 52086 64365	TQ 56 SW 111	Medieval - Modern	Lullingstone Park – deer park possibly dates from 1279
20.	TQ 5259 6356	TQ 56 SW 38/1151	Medieval - Modern	Wall to east of Castle farmhouse. Listed Building
21.	TQ 5253 6357	TQ 56 SW 38/1153	Post-Medieval	Castle Farm cottages. Listed Building
22.	TQ 5325 6448	TQ 56 SW 5/70	Post-Medieval	Ruins of bath house at Lullingstone Castle. Listed Building
23.	TQ 5302 6434	TQ 56 SW 5/68	Post-Medieval	Moll Cob. Listed Building
24.	TQ 5256 6352	TQ 56 SW 38/1152	Post-Medieval	Garden boundary wall to Castle farmhouse. Listed Building
25.	TQ 53252 64484	TQ 56 SW 120	Post-Medieval	Site of Queen Anne's Bath House, Lullingstone Castle
26.	TQ 52400 64043	TQ 56 SW 125	Post-Medieval	Site of summerhouse, Lullingstone Castle

27.	TQ 5292 6441	TQ 56 SW 5/64	Post-Medieval	The gatehouse to Lullingstone Castle. Listed Building
28.	TQ 5300 6453	TQ 56 SW 5/65	Post-Medieval	Dovecot at Lullingstone Castle. Listed Building
29.	TQ 5301 6438	TQ 56 SW 5/67	Post-Medieval	Lullingstone Castle. First build 1498 – 1580, recast in 17th century. Listed Building
30.	TQ 5309 6453	TQ 56 SW 92	Post-Medieval	Dove-cote, Lullingstone Castle. Listed Building
31.	TQ 5316 6430	TQ 56 SW 5/69	Post-Medieval	Icehouse in the grounds of Lullingstone Castle. Listed Building
32.	TQ 53163 64309	TQ 56 SW 91	Post-Medieval - Modern	Icehouse, Lullingstone Castle. Listed Building
33.	TQ 5300 6445	TQ 56 SW 18	Post-Medieval - Modern	Lullingstone Castle (Lullingstone House). Listed Building
34.	TQ 5292 6441	TQ 56 SW 58	Post-Medieval - Modern	Gatehouse, Lullingstone Castle. Listed Building
35.	TQ 5303 6444	TQ 56 SW 5/71	Post-Medieval - Modern	Garden walls to Lullingstone Castle. Listed Building

36.	TQ 53000 64154	TQ 56 SW 121	Post-Medieval - Modern	Site of skating rink, Lullingstone Park
37.	TQ 5211 6358	TQ 56 SW 115	Modern	Second World War aircraft crash site, Castle Farm, Eynsford
38.	TQ 52225 64326	TQ 56 SW 114	Modern	Second World War dummy airfield, Lullingstone Park
39.	TQ 53 64	TQ 56 SW 96	Undated	Lullingstone halt railway station.
40.	TQ 5199 6325	TQ 56 SW 87	Undated	Linear feature/soilmark
41.	TQ 5263 6428	TQ 56 SW 79	Undated	Linear feature/cropmark
42.	TQ 525 645	TQ 56 SW 78	Undated	Linear features/cropmark

43.	TQ 523 639	TQ 56 SW 76	Undated	Trackway/soilmark, cropmark
44.	TQ 5262 6402	TQ 56 SW 75	Undated	Site of ornamental tree ring, Lullingstone Park
45.	TQ 535 637	TQ 56 SW 68	Undated	Field system, lynchets

SMR Summary Form

Site Name: Lullingstone Country park	
Site Address: **Lullingstone Country Park,** **Castle Road.** **Eynsford,** **Kent**	
Summary: A programme of archaeological evaluation, including a contingency for geo-archaeological evaluation, was carried out at Lullingstone Country Park, Eynsford, Kent. The work was undertaken between 16th – 18th March 2009 on behalf of Kent County Council. Six evaluation trenches sampled the surface archaeology and a geo-archaeological test pit investigated the geological sequence. The evaluation trenches revealed two significant features: a prehistoric, perhaps Mesolithic pit and a 3.1m wide perhaps prehistoric droveway ditch. The suggested droveway ditch was an element of an extensive pattern of cropmarks. Potentially very significant flintwork (*possibly* Upper Palaeolithic) and faunal material was recovered from the upper facies of the Pleistocene Head.	
District/Unitary: Sevenoaks	**Parish:**Eynsford
Nature of Development: Construction of extension to existing visitor centre car park	
Period(s): Prehistoric	
NGR (centre of site : 8 figures): NGR 5526, 1638	
Type of archaeological work (delete) Evaluation	
Date of Recording: 16th – 18th March 2009	
Unit undertaking recording: Archaeology South-East	
Geology: Middle Chalk with a possible capping of undivided flood plain gravels, especially in the west.	
Title and author of accompanying report: An Archaeological evaluation at Lullingstone Country Park, Castle Road, Eynsford, Kent by Dr Matt Pope and Greg Priestley-Bell	
Summary of fieldwork results Prehistoric: 3.1m wide ditch and bank remnant, probably prehistoric, perhaps Bronze Age, an element of extensive cropmarks; prehistoric pit, perhaps Mesolithic	
Likelihood of surviving archaeological remains on-site: High: possible truncation to natural and into natural has potential to affect prehistoric features	
Location of archive/finds: Currently held at the offices of ASE	
Contact at Unit: Neil Griffin	**Date:** April 2009

OASIS Form

OASIS ID: archaeol6-57752

Project details

Project name	An archaeological evaluation at Lullingstone Country Park
Short description of the project	A programme of archaeological evaluation, including a contingency for geo-archaeological evaluation, was carried out at Lullingstone Country Park, Eynsford, Kent. The work was undertaken between 16th - 18th March 2009 on behalf of Kent County Council. Six evaluation trenches sampled the surface archaeology and a geo-archaeological test pit investigated the geological sequence. The evaluation trenches revealed two significant features: a prehistoric, perhaps Mesolithic pit and a 3.1m wide probably prehistoric, perhaps Bronze Age droveway ditch. The suggested droveway ditch was an element of an extensive pattern of cropmarks. Potentially very significant flintwork (possibly Upper Palaeolithic) and faunal material was recovered from the upper facies of the Pleistocene Head.
Project dates	Start: 16-03-2009 End: 18-03-2009
Previous/future work	No / Not known
Any associated project reference codes	LCP09 - Sitecode
Any associated project reference codes	SE/08?TEMP/0025 - Planning Application No.
Type of project	Field evaluation
Site status	None
Current Land use	Grassland Heathland 4 - Regularly improved
Monument type	PIT Early Prehistoric
Monument type	DITCH Late Prehistoric
Significant Finds	WORKED FLINT Early Prehistoric
Significant Finds	WORKED FLINT Late Prehistoric
Methods & techniques	'Sample Trenches','Targeted Trenches','Test Pits'
Development type	Car park (flat)

Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	KENT SEVENOAKS EYNSFORD Lullingstone Country Park Visitor Centre
Postcode	DA4 0
Study area	8000.00 Square metres
Site coordinates	TQ 552609 163822 50.9253959486 0.209437210996 50 55 31 N 000 12 33 E Point
Height OD / Depth	Min: 48.45m Max: 66.01m

Project creators

Name of Organisation	Archaeology South East
Project brief originator	Kent County Council
Project design originator	KENT COUNTY COUNCIL
Project director/manager	Neil Griffin
Project supervisor	Greg Priestley-Bell
Type of sponsor/funding body	Developer

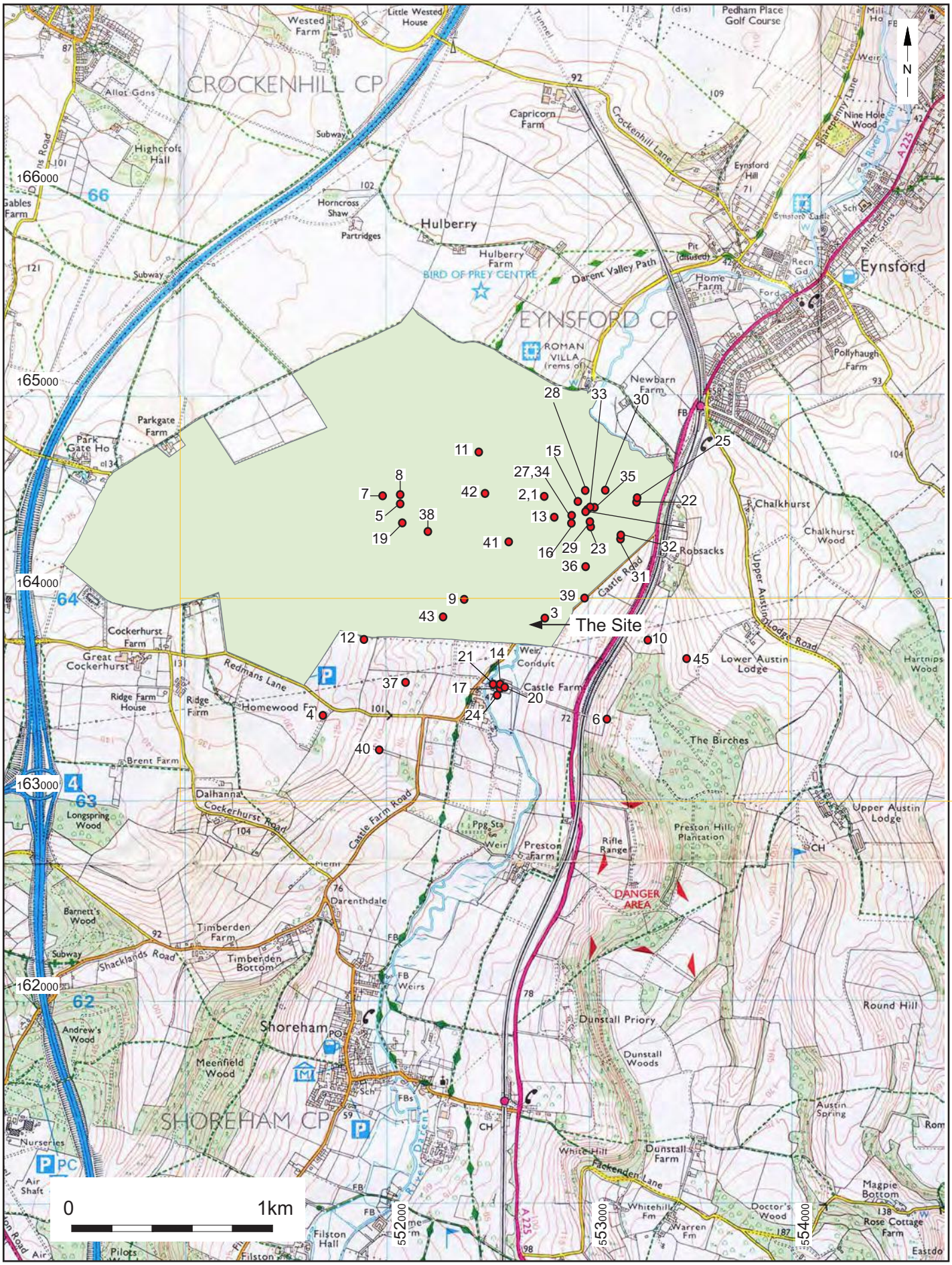
Project archives

Physical Archive recipient	Local Museum
Physical Contents	'Animal Bones','Worked stone/lithics'
Digital Archive recipient	Local Museum

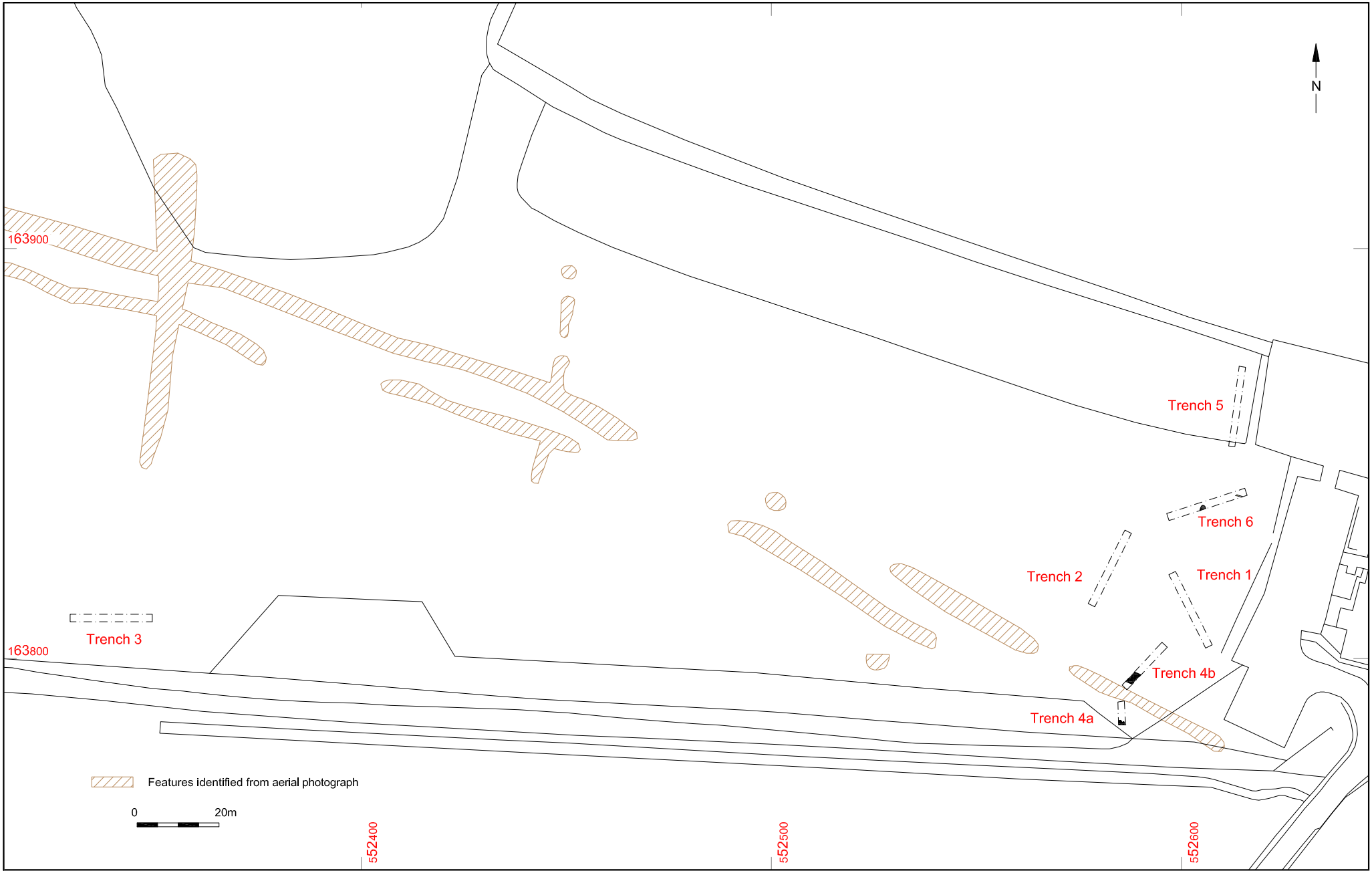
Digital Contents	'Animal Bones','Worked stone/lithics'
Digital Media available	'GIS','Text','Images raster / digital photography','Survey'
Paper Archive recipient	Local Museum
Paper Contents	'other'
Paper Media available	'Context sheet','Drawing','Notebook - Excavation',' Research',' General Notes','Photograph','Section','Unpublished Text','Unspecified Archive'

Project bibliography 1

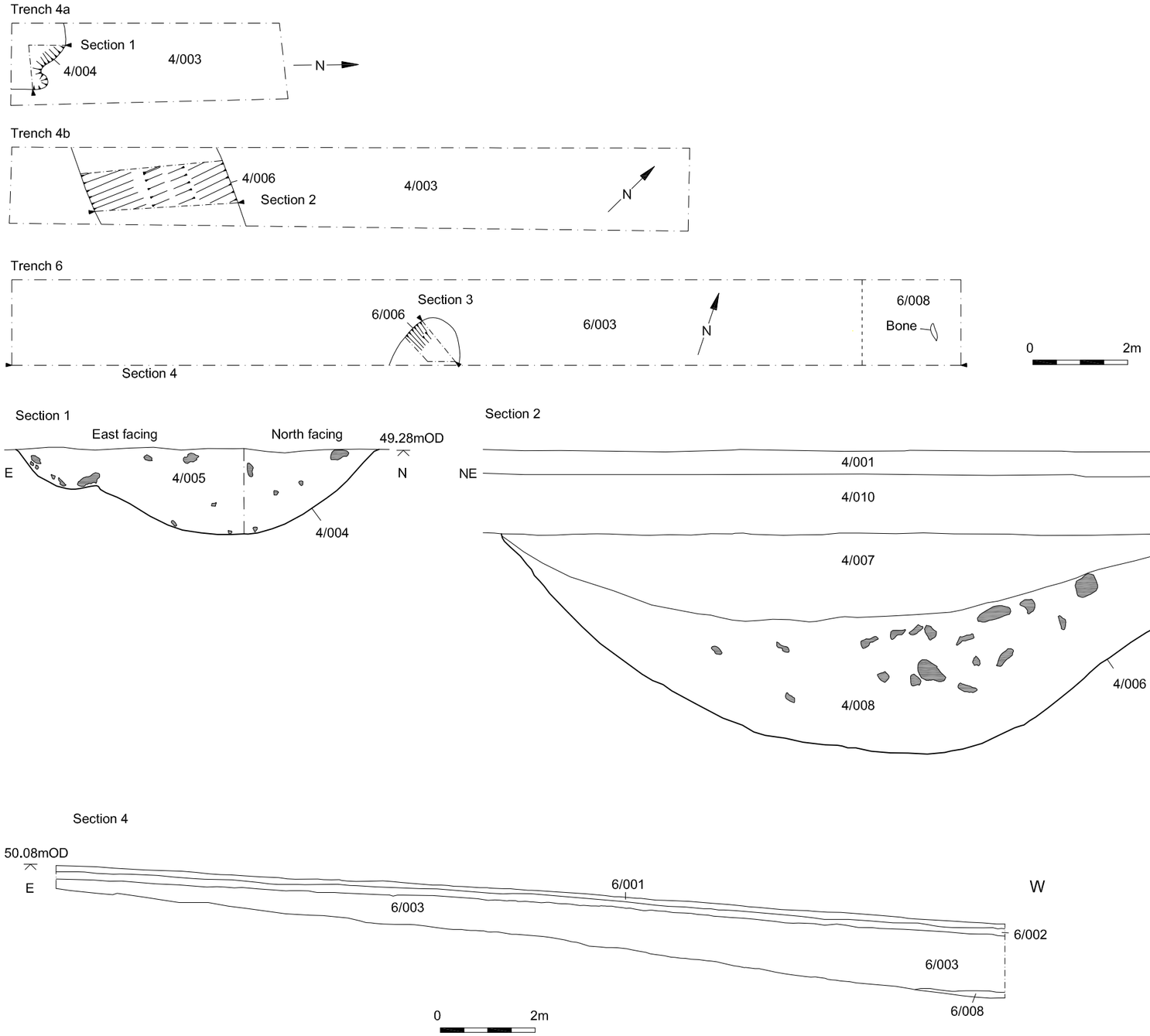
Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation at Lullingstone Country Park, Castle Road, Eynsford, Kent
Author(s)/Editor(s)	Dr Matt Pope and Greg Priestley-Bell
Other bibliographic details	2009052
Date	2009
Issuer or publisher	Archaeology South-East
Place of issue or publication	Portslade
Description	A4 pamphlet
Entered by	Greg Priestley-Bell (gregpbell@btinternet.com)
Entered on	2 April 2009



© **Archaeology South-East**		Lullingstone Country Park	Fig. 1
Project Ref: 3793	April 2009	Site Location Plan with SMR data	
Report Ref: 2009052	Drawn by: JLR		



© Archaeology South-East		Lullingstone Country Park	Fig. 2
Project Ref: 3793	April 2009	Trench location	
Report Ref: 2009052	Drawn by: RC/JR		



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Project Ref: 3793	Aprill 2009	Trench plans and sections	
Report Ref: 2009052	Drawn by: RC/JR		

Fig. 4: Ditch [4/006]

Fig. 5: Ditch [4/006]

Fig. 6: Pit [6/006]

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Project Ref: 3793	April 2009		
Report Ref: 2009052	Drawn by: JLR		

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