



CAM ARC Report Number 984

Dales Manor Business Park, Sawston, Cambridgeshire

Desk Based Assessment

Shannon Hogan

November 2007

CAM ARC Report Number 984

**Dales Manor Business Park,
Sawston, Cambridgeshire**

Desk-Based Assessment

Shannon Hogan MA

Site Code: SAW DMP 07
Date of works: November 2007
Grid Ref: TL 4905 5042

Editor: Toby Gane MPhil HND AIFA
Illustrator: Séverine Bézie BA MA

CAM ARC OASIS Report Form

OASIS Number: 36239

PROJECT DETAILS				
Project name	Dales Manor Business Park, Sawston, Cambridgeshire: A Desk-Based Assessment			
Short description	The study was commissioned by Savills Ltd (on behalf of Endurance Estates) in advance of the proposed redevelopment of Dales Manor Business Park to determine the likely nature, extent and state of preservation of archaeological remains within the site. The site was deemed to have moderate (to low) potential of archaeological remains likely to date to the later prehistoric, specifically Bronze and Iron Age, and Roman periods. Cropmark enclosures and ring ditches have been recorded extensively throughout Sawston and the neighbouring parishes although the disused 19 th century railway and earthworks of the moated site of Dale manor are the only remains within an approximate 500m radius of the business park. The location of the site on the brink of the heavy peats and in an area prone to flooding and water logging suggests that it is unlikely to have ever been a focal point of activity. However, it is possible that Bronze and Iron Age features relating or similar to the Police Station and Lynton Way activity may extend into the site. Furthermore, the proximity of the Roman route southeast of the site may have resulted in some sporadic activity associated with movement along this course. The degree of survival is indeterminable without full details of the nature and depth of the business park groundworks. However excavations in Sawston village noted deep subsoils, which, if present at the assessment site, may allow for good preservation.			
Project dates	Start	12/11/07	End	20/11/07
Previous work	None		Future work	Unknown
Associated project reference codes	SAW DMP 07			
Type of project	Desk-Based Assessment			
Site status	None			
Current land use	Industrial Estate, car park			
Planned development	Redevelopment of the site for employment purposes			
Monument types / period (list all that apply and use thesaurus of monument types)	Industrial, Commercial			
Significant finds: Artefact type / period (list all that apply and use MDA object thesaurus)				
PROJECT LOCATION				
County	Cambridgeshire	Parish	Sawston	
HER for region	Cambridgeshire			
Site address (including postcode)	Dales Manor Business Park Grove Road Sawston Cambridgeshire CB2 4TJ			
Study area (sq.m or ha)	12.14 ha (21832 sq. m) This is the area for the whole business park in Sawston			
National grid reference	Easting (6 figure)	4905	Northing (6 figure)	5042
Height OD	Max OD	25m	Min OD	25m
PROJECT ORIGINATORS				
Organisation	Cambridgeshire County Council, CAM ARC			
Project brief originator				
Project design originator				
Director/supervisor				
Project manager	Toby Gane			
Sponsor or funding body				
ARCHIVES	Location and accession number		Content (e.g. pottery, animal bone, database, context sheets etc)	
Physical				
Paper				
Digital				
BIBLIOGRAPHY				
Full title	Dales Manor Business Par, Sawston, Cambridgeshire			
Report number	984			
Series title and volume				
Page numbers				
Author(s)	Shannon Hogan MA,			
Date	12 th November 2007			

Summary

This study was commissioned by Savills (L&P) Ltd of Cambridge on behalf of Endurance Estates in advance of the proposed re-development of an area of Dales Park Business Park, Sawston (TL 4905 5042) for employment purposes. This report aimed to assess the potential for and degree of survival of archaeological remains within the development area.

The site is located at the north end of the village, on the verge of the heavy alluvial peats. The area is deemed to have low to moderate potential of archaeological remains dating from the later prehistoric (Bronze and Iron Age) and possibly the early Roman period (1st century AD). The closest known archaeological remains are the earthworks of the 12th century Dale manor (400m southwest, CHER 00165), and it is possible that the development area was originally encompassed by the manor's associated Deal Grove. There is no evidence of any Saxon, medieval or post medieval activity within the assessment site although it was probably included in the acreage of the mid-late 19th century North Farm and remained so until bought out and built upon in the late 20th century. Traces of any 19th or 20th agricultural activity have undoubtedly been eliminated by the groundworks of the modern business estate.

Investigations at the Police Station (CB15777, MCB17152) and Lynton Way (MCB16829), 700m southwest and 800m southeast respectively have yielded evidence for occupation and land use in the Bronze Age and to a lesser extent, Iron Age. The Police Station site also revealed a junction between the Roman route to Cambridge (Cam Valley Way) and the east-running Ashwell Street/Street Way. The projected route of this latter road runs southeast of the development area.

The location of the modern business park on the brink of the heavy alluvial peats means it is unlikely to have ever been a focal point of archaeological activity, which is further supported by the lack of any known cropmarks close to the site or within a 500m radius. The uninhabitable nature of the peats has undoubtedly restricted settlement activity to the south, where the present village now exists. However, it is plausible that remains associated with (or at least similar to) the known Bronze and Iron Age activity and movement along the adjacent Roman road may extend into the development area.

The degree of preservation is indeterminable without full details of the groundworks associated with the extant business park. Deep soils elsewhere in the village, if present at the assessment site, could allow for good preservation of any existing remains.

Contents

1	Introduction	1
	1.1 Planning Background	1
	1.2 Location, Topography and Geology	1
2	Archaeological and Historical Sources	2
	2.1 Historical Sources	2
	2.2 The Historic Environment Record (formerly SMR)	2
	2.3 Cartographic Evidence	2
	2.4 Aerial Photographs	2
	2.5 Earthworks	3
	2.6 Archaeological Excavations and Surveys	3
3	Official Designations	3
4	Archaeological and Historical Background	4
	4.1 General Background	4
	4.2 Site Background	5
5	Confidence Rating	6
	5.1 Historical Sources	6
	5.2 The Historic Environment Record (formerly SMR)	6
	5.3 Cartographic Evidence	6
	5.4 Aerial Photographs	7
	5.5 Earthworks	7
	5.6 Archaeological Excavations and Surveys	7
6	Deposit Mapping of Archaeological Remains	8
	6.1 Prehistoric	8
	6.2 Roman	10
	6.3 Anglo-Saxon	11

6.4	Medieval	12
6.5	Post Medieval and Modern	13
7	Degree of Survival of Archaeological Remains	14
8	Rating	14
9	Conclusions	15
	Acknowledgements	16
	Bibliography	16
	Maps Consulted	18
List of Appendices		
	Appendix 1: Health and Safety Statement	19
	Appendix 2: Summary of HER entries	20
	Appendix 3: Aerial photographic assessment	22
List of Figures		
Figure 1:	Location of the development area with HER numbers	32
Figure 2:	1811 Inclosure Map	33
Figure 3:	First Edition Ordnance Survey Map 1886	34
Figure 4:	Second Edition Ordnance Survey Map 1903-1904	35
Figure 5:	Provisional Edition Ordnance Survey Map 1937-1950	36
Figure 6:	Oblique view of 3-dimensional model. Viewed from the south With development area highlighted (red)	37
Figure 7:	Vertical view of 3-dimensional model. Viewed from the south With development area highlighted (red)	38

1 Introduction

1.1 Planning Background

Cambridgeshire County Council, CAM ARC (formerly Archaeological Field Unit) has been commissioned by Savills (L&P) Ltd on behalf of Endurance Estates to produce a desk-based assessment of Dales Manor Business Park, Sawston, Cambridgeshire. The aim of this assessment is to determine the nature and extent of any archaeological remains within the proposed development area in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990).

The work contained in this document is entirely produced from a desk-based assessment and does not include any data from physical investigation at the proposed development site. On completion, a copy of this report will be housed in the Cambridgeshire County Council Archaeological store.

1.2 Location, Topography and Geology

The parish of Sawston is located in South Cambridgeshire, approximately 10km south of Cambridge. The River Cam flows south-east to north-west and forms the western parish border, whilst to the north lies the River Granta. The village is situated on the east bank of the Cam in the south-west of the parish. The parish is located along the chalk downlands separating the Cambridgeshire fenlands from the high Essex clay-lands, and which has been used as a main routeway through the area since prehistoric times (The Icknield Way, Malim 2000a:*passim*).

Dales Manor Business Park is situated on a flat area of land (Figures 6 and 7) to the north of the main village (NGR TL 4905 5042), at an approximate height of 25.0m AOD (Fig. 1). The site itself is bordered to the south-west by a housing estate; to the north-west by open rural land; to the north-east by a trackway and to the south-east by West Way road. Just less than 1km north of the site, the River Granta flows in a north-west direction.

The underlying solid geology consists of Upper Cretaceous grey chalk with overlying drift geology of alluvium deposited by the Rivers Cam and Granta (British Geological Survey 2002, Sheet 205). The site lies on the verge of heavy alluvial peats, prone to water logging during river flooding. The soils around the assessment site are of the Swaffham Prior association (typical brown calcareous earths) with some Thames

association (pelo-calcareous alluvial gley soils) throughout the Granta valley area (SSEW 1983). Farmland in the parish is suitable for winter cereals, cereal and grassland rotation with dairying and some horticultural crops (SSEW 1983).

2 Archaeological and Historical Sources

Historical Sources

The assessment site does not appear to have seen any construction or urban activity until the late 20th century. In view of this, few historical, primary or secondary, sources were referred to. The only resources used were the Post Office and Kelly's Directories of Cambridgeshire (1879, 1922, 1937) and the original enclosure award for Sawston (1811). The majority of information was gathered from published and grey literature, and the HER.

2.2 The Historic Environment Record (formerly SMR)

The HER research was gathered from a 1km search radius from the development area (Fig. 1). This generated a reasonable amount of archaeological information discussed in Section 6 and summarised in Appendix 2. The search also yielded entries for numerous listed buildings within the main village of Sawston. These have not been included in this report given that the assessment site did not fall within the urban limits of Sawston until the later half of the 20th century.

2.3 Cartographic Evidence

The primary cartographic sources were 19th and 20th century historical maps which were included to demonstrate the previous land use of the development area prior to the present business park. The maps used are as follows:

- 1811 Tracing of Sawston Enclosure Map
- 1886 Ordnance Survey Map
- 1903 Ordnance Survey Map
- 1937 Ordnance Survey Map

2.4 Aerial Photographs

Aerial photographs of the assessment area (see appendix 3) show a lack of any archaeological features. However, a curvilinear feature has been identified approximately 1km west of the site (Mortimer 2007 pers.com.).

2.5 Earthworks

The moated site of Dale manor survives as earthworks 400m southwest of the development area and cropmarks in the surrounding area marks the sites of prehistoric (likely Bronze and Iron Age) and Roman monuments and features. Borough Hill Iron Age hillfort lies 1.5km to the southwest and parts of the bivallate defences are still slightly raised.

2.6 Archaeological Excavations and Surveys

Sawston has seen a number of small scale archaeological investigations largely concentrated in three main areas: the Police Station, 700m southwest of Dales Manor Business Park, Lynton Way 800m to the southeast, and Sawston Hall in the village centre, more than 1km south of the development area. The first two (CHER CB15777 and MCB16829 respectively) have yielded some of the most important late prehistoric and Roman finds in the area indicating a level of activity and occupation in these periods. A smaller project adjacent to the Police Station off Cambridge Road (MCB 17152) has provided further evidence of late prehistoric activity.

An evaluation and excavation at a housing development behind Sawston Police Station revealed three elements of a large Bronze Age field or enclosure system (Mortimer 2006). The enclosure had been recorded in a previous excavation immediately to the south during the first stage of development at the site in 2003, where it was interpreted as being of Roman origin (Cessford & Mortimer 2004).

3 Official Designations

Borough Hill hillfort, some 1.5km southwest of the development area has been designated a Scheduled Ancient Monument (SAM 24407), however it is too far from the site to be of any direct significance. The relevance of the hillfort is discussed in its wider context below.

Sawston is home to numerous listed buildings although they are far enough from the assessment area to bear no relevance to the site's history and development. The HER entries for listed buildings have not been included in this report.

4 Archaeological and Historical Background

4.1 General Background

Sawston lies on a chalk ridge south of the Grant valley and that forms part of the Icknield Way. Scatters of finds, residual occupation evidence and burial monuments dictate a general route along which people, commerce and trade passed between south-eastern England and North Norfolk from at least as early as the later Neolithic. Although scatters of some Mesolithic and Neolithic flints have been recovered from Sawston parish, evidence suggests the earliest settlement probably occurred during the Middle to Late Bronze Age. A series of field systems and enclosures recorded at the Police Station site (700m southwest of the development area; Cessford & Mortimer 2004) point to occupation in the area although no definitive occupation evidence was found. Bronze Age enclosures and a roundhouse were also identified at Lynton Way, some 800m to the south-east (Weston *et al.* 2006) strengthening the plausibility of settlement at this time.

Occupation in the general area during the Iron Age is confirmed by the presence of Borough Hill hillfort, 1.5km south-west of the assessment site (JSAC 2003; 2001). Settlement activity has also been confirmed at Dernford Farm in the north of the parish and some features at Lynton Way suggest re-use and possible reoccupation of the Bronze Age site (Eddisford *et al.* 2005; Woolhouse *et al.* 2006).

Roman pottery scatters dating to the 1st century AD, and enclosures have been recorded close to Lynton Way (CHER 04118, 04151). This evidence, coupled with the road junction superimposed over the Bronze Age ditch system at the Police Station (CHER CB15777) indicate some level of Roman re-use, although concrete occupation evidence has not yet been confirmed at these sites (Woolhouse *et al.* 2006; Cessford & Mortimer 2004). The northerly bound road is part of a previously unknown route to Cambridge (Cam Valley Way) whilst the easterly bound route forms part of Ashwell Street/Street Way (*ibid*) and runs immediately southeast of the assessment area. The alignment of the Cam Valley Way has been adhered to by the present Cambridge Road whilst the extant Church Street is also thought to follow a Roman route, possibly an alternative Ashwell Street. It is possible that the Cam Valley Way was originally established in the later prehistoric (Rosen 1978:247), and extremely likely that the two easterly bound roads follow the Icknield Way route. Roman activity, including an additional roadway, has also been found at Borough Hill, suggestive of some continuation or at least re-use of the site.

The pre-Conquest Dernford Mill (Rosen 1978:247), the Domesday Survey and etymological evidence hint at small manorial settlements in the north-west of the parish during the late Saxon era; however there is as yet no archaeological evidence to confirm this. A single Saxon

inhumation at Huckeridge Hill (CHER 04537) could be part of a larger cemetery, but again, no additional finds have been made to support this.

Three of the four Sawston manors may have had late Saxon origins, and were certainly established by the time of the Domesday Survey. References to a settlement at Sawston are made in the 11th, 12th and 13th centuries, with 125 households being recorded in 1279 (Taylor 1998:76-7). The village church was originally established in the 12th century, probably by the dominant Pirot family, who held Pyratts manor and for a time also the manors of Dernford and Dale (Rosen 1978:258). The location of the church at the southern end of the modern village indicates that the medieval urban development was focused around this area, possibly representing a settlement shift from any pre-Conquest activity concentrated at the manor sites in the west and north-west.

The post medieval period saw considerable urban and industrial expansion of the village, which in turn led to a rapid population increase. The urban development continued at first to emanate from the medieval core at the south end of the modern village, expanding along High Street/Cambridge Road and the Church Street junction. Listed buildings in the village demonstrate the focal points of the post medieval village development, which occurred approximately 1km south of the study area. In the later centuries, industrial development began to spread outside of the village core but it was not until the later 20th century that Dales Manor Business Park was constructed. The site appears to have remained rural land throughout the post medieval period and may have fallen within the lands held with North Farm from the mid-late 19th century until the late 20th century. The northern parts of the parish are prone to severe flooding, and although drainage is evident on the 1811 enclosure map, the heavy alluvial peats have restricted building development in this area.

4.2 Site Background

The development site lies to the north of the main Sawston village, on the north-east end of a larger business park, adjacent to the disused 19th century railway. Beyond the business park are rural lands of the parish, which appear to have seen very little agricultural activity in the last 200 years, as shown by the cartographic sources. The regular flooding of the peat soils in the north of the parish has prevented building works from encroaching into this area, and cultivation has also been somewhat limited.

The enclosure and Ordnance Survey maps indicate that the development site has seen no construction activity until the late 20th century business park was built. This is confirmed by the

archaeological and historical information regarding this area. The closest activity sites are the grove associated with the medieval Dale manor and the 19th century North Farm north of the development area.

5 Confidence Rating

5.1 Historical Sources

Few historical sources were consulted for this project as the study area has been void of medieval or post medieval urban and industrial activity until the construction of the business park in the late 20th century. The Post Office and Kelly's Directories are unbiased accounts of the social and economic status of the village and parish and its development. As these are more useful for urban studies, they were consulted only for general historical information of Sawston. The 1811 enclosure award is a lengthy document from which information on land names and use, ownership and occupancy can be obtained. Minimal information was needed for this study and minimal information was available as the assessment site lay beyond the limits of Sawston village and agricultural lands in 1811.

5.2 The Historic Environment Record (formerly SMR)

A radius of 1km from the site was searched in the HER, which yielded 29 records of archaeological features, events and finds. A number of listed building records were also found, although these were not included in this report as their location in the medieval/post medieval core of the village, 1km south of Dales Manor Business Park, means they hold little significance to the development area. As only a handful of records were produced in a 500m search, the radius was expanded to gather sufficient information to contextualise any possible remains within the development area. The records are usually very detailed and many can be cross-referenced with published and grey literature. Occasionally find spots are not accurately recorded and thus the information is not reliable for the study. The lack of records immediately surrounding the assessment site versus the number of records from a broader search radius should not necessarily lead to the conclusion that there are no archaeological features within the vicinity of the study area.

5.3 Cartographic Evidence

The cartographic sources were extremely useful for demonstrating that the site had not been subjected to urban development in the last 200 years, although it was not possible to determine with any certainty if the assessment area had previously been included with the lands held by North Farm.

Ordnance Survey maps can also reveal information not found in historical sources or HER records, such as earthworks (tumuli etc) visible or known about in the 19th century but now lost or levelled. There do not appear to have been any such monuments in the vicinity of the assessment site recorded at any time.

5.4 Aerial Photographs

Aerial photography is useful for the identification of heavily disturbed and levelled earthworks as well as cropmark features and often prompts further archaeological investigation. Many of the undated cropmarks in the area are known from or visible in aerial photographs and evidence of additional, as yet unrecorded or documented, features in the Sawston landscape.

A full aerial photographic assessment can be found in appendix 3.

5.5 Earthworks

Earthworks of the moated site of Dale manor are still visible 400m southwest of the site. Segments of the bivallate ramparts of Borough Hill hillfort (1.5km southwest) are also still slightly raised and clearly visible from the air. There are no earthworks or cropmarks visible immediately around the assessment area.

5.6 Archaeological Excavations and Surveys

Two major areas within 800m of the assessment site have been subjected to archaeological investigation. These are the Police Station and Lynton Way to the southwest and southeast respectively. The excavations found evidence of Bronze Age, Iron Age and Roman activity and also demonstrated that Cambridge Road follows a previously unknown Roman route (the Cam Valley Way). These sites reflect the nature of other archaeological remains in the area; transient Neolithic activity with Middle to Late Bronze Age occupation and rural activity. Late Iron Age and Roman (1st century AD) occupation evidence has been found to the north of the parish at Dernford Farm and in the Granta valley and is implied by the presence of various features at the Police Station and Lynton Way sites. Saxon material is lacking in Sawston and later material is limited to the original village nucleus, along the old High Street and junction with Church Street and around the church. There have been no archaeological evaluations in the vicinity of the development area.

6 Deposit Mapping of Archaeological Remains

In this section, an attempt has been made to map all known monuments and events and, based on this mapping, to predict the existence of further remains within the proposed development area. These predictions should not be used to produce 'constraint maps'.

6.1 Prehistoric

Evidence for human activity prior to the late prehistoric period has come from chance finds in the general area. A Palaeolithic and a Mesolithic flint implement have been discovered in the neighbouring parishes of Babraham and Stapleford respectively (Taylor 1998:13,80). Fieldwalking and trial trenching at Dernford Farm northwest of the site have revealed scatters of Early Mesolithic to Early Neolithic struck flint (Grant & Weston 2004). Additional Mesolithic material was discovered during work at Borough Hill Iron Age fort (Mortimer 2004) and 1km southwest at Bowers Terrace (CHER MCB17619). However, there is insufficient evidence to categorise the nature and extent of the early prehistoric activity in the Sawston area.

6.1.1 Neolithic

The stretch of chalk ridge on which Sawston is located formed a network of routeways between south-central England to north Norfolk, known as the Icknield Way (Muir 2002:94-5, Malim 2000a:*passim*). This general route is thought to have been in use from at least the Neolithic period, although may have originated even earlier.

Little Neolithic material has been recovered from Sawston, despite its location on a route of the Icknield Way. Scatters of tools and debitage form the only evidence of human presence during this period, suggestive of transient activity rather than established settlements (Pollard in Kirkby & Oosthuizen 2000:7). Finds from the Police Station site (CHER CB15777) and at the Bowers Terrace site (CHER MCB17619) are indicative of this transient activity.

6.1.2 Bronze Age

Human activity in the wider area is increasingly more abundant from the Bronze Age. Ring ditches of probable barrows can still be seen 1km south-east of the site and flint daggers have also been recovered to the north of this (CHER 09354, 07906; Taylor 1998:75). Burial mounds and find scatters are commonly located along the Icknield Way, with occupation focused along the river valleys (Last in Kirkby & Oosthuizen 2000:9).

Although Bronze Age barrows do not necessarily point to occupation in the immediate area, evidence of land use and settlement has been

discovered in Sawston at the Police Station and Lynton Way sites. The former traced portions of a large system of enclosures extending out of the evaluation area (Mortimer 2006) whilst the latter found evidence of a Bronze Age roundhouse and other linear and pit features (Weston *et al.* 2006). The flint assemblage and carbon dating of the bone material from the Lynton Way site revealed a date of 1100BC (*ibid*). An aerial survey of the land around Lynton Way showed the ditches and enclosures continuing beyond the western site boundary, indicating that the excavated area was only part of a much larger field/enclosure system or possibly settlement.

Immediately north of the Police Station site, an evaluation found the remains of a Middle to Late Bronze Age flint working site (MCB 17152), contemporary with the ditched enclosure system. Over some of these Middle Bronze Age ditches, gravel surfaces indicated a later phase of Roman road and track construction through this area (Mortimer 2007 pers.comm; Mortimer 2005, see below).

The presence of an additional barrow site might be indicated by a Saxon burial found at Huckeridge Hill 1km west of Dales Manor Business Park (CHER 04537). Bronze Age artefacts found in this area, including lance heads and celts (CHER 04537a), may represent the remains of barrow burial finds. Saxon burials are regularly found amid barrow sites in East Anglia and the presence of barrows on the east side of village (CHER 09354) suggests that more may have existed along this part of the Icknield Way route.

6.1.3 Iron Age

Following the Bronze Age activity at Dernford Farm, a phase of Middle to Late Iron Age activity in the form of field systems and possible occupation evidence has been identified (Eddisford *et al.* 2005). Furthermore, Borough Hill Iron Age hillfort (SAM 24407), just 1.5km southwest of the assessment site, is a large and undoubtedly important fort in South Cambridgeshire. Investigations here examined the bivallate defences and also revealed some evidence of Middle-Late Iron Age occupation enclosed by the inner defensive ditch (JSAC 2003;2001, Bray 1994). Borough Hill falls into the group of 'larger-scale hillforts' in Cambridgeshire (similar in size to Arbury and Stonea Camp), which usually reveal limited occupation evidence; Borough Hill is the exception to this (Bray & Way 1997).

As well as some dated Mesolithic, Bronze Age, Roman and Saxon finds and features, geophysical surveys have highlighted a variety of unexplored features in and around the fort (Mortimer 2001; Bray & Way 1997), which could relate to any of these archaeological phases or perhaps even later re-use. Neolithic and Bronze Age burnt and worked flints were found in a buried palaeosol (French & Sulas 2005). The evidence suggests possible continuation of activity from the Mesolithic through to the early Saxon era, although further

investigation of the fort would be required to appreciate the site in its full historical and archaeological context.

Although the investigations at Lynton Way revealed primarily Bronze Age occupation, some features dated to the late Iron Age and represent re-use of the area following the Bronze Age activity (Woolhouse *et al.* 2006). The Iron Age features suggest occupation in the vicinity. The presence of Bronze and Iron Age features within Sawston to the southeast and southwest of the site suggest similar features may extend into the development area. The location of Dales Manor Business Park, on the brink of the Sawston's peat lands in the north, means that it is unlikely the site has ever been the focal point of activity.

6.2 Roman

An evaluation at the Police Station in Sawston indicated a system of Roman roads and tracks superimposed over parts of the Bronze Age enclosures (CHER CB15777, Cessford & Mortimer 2004). The recovered pottery dated to the 1st century AD and was of a generally low quality. Furthermore the context of the finds was not indicative of occupation (Mortimer 2007 pers.comm., Cessford & Mortimer 2004). An alignment of ditches had originally been interpreted as the remains of a Roman military camp, however this has since been refuted.

The Police Station investigations revealed a Roman northerly bound roadway, previously unknown and now referred to as the Cam Valley Way (Cessford & Mortimer 2004). The main artery through Sawston village appears to adhere to this route. Additionally, Church Street is thought to follow a Roman road intersecting with the Cam Valley Way toward the centre of village. However the Police Station site revealed another Roman road heading north-east, parallel to Church Street with a projected line running immediately south-east of the assessment site (Mortimer 2007 pers.comm., Cessford & Mortimer 2004). These north-east running routes represent segments of Ashwell Street/Street Way (*ibid*).

A Roman building and alignment of ponds has been recorded 1km north of Dales Manor Business Park in the Granta Valley (CHER 04788) adjacent to a possible barrow site. Finds scatters including pottery, fibulae fragments and part of a pudding stone quern have been found around the building and ponds (CHER 04325, 04764). An interesting set of slave shackles were found 500m to the south-east (CHER CB15667) and may be associated with the building site or perhaps an undated enclosure adjacent to their find spot (CHER 09283).

Although excavations have been limited at Borough Hill Iron Age fort (approximately 1.5km southwest of the assessment site), evidence suggests some Roman occupation (including an adjacent roadway,

probably part of Ashwell Street) as well as later Saxon activity (Mortimer 2007 pers.comm.; Mortimer 2001). Continuation or reoccupation of Iron Age sites is a common occurrence throughout Roman Britain, however the Dernford Farm site, despite yielding some 1st century AD pottery sherds, contained no evidence of Roman occupation (Eddisford *et al.* 2005). Roman activity is present elsewhere in Sawston although occupation evidence is limited. Finds recovered during building works south of Lynton Way and 900m south of the development area (CHER 04151) may be associated with the adjacent network of enclosures (CHER 04118).

The nature of the Roman activity in Sawston is not fully understood, especially for the period following the 1st century AD for which there is no evidence. The route of a Roman road southeast of the development area may suggest some activity within the Business Park or at least stray finds associated with movement along the road.

6.3 Anglo-Saxon

The Saxon period in Southern Cambridgeshire is poorly understood and Sawston is no exception. Borough Hill has yielded some sparse material indicating re-occupation of the fort in the early Saxon era (Mortimer 2001; Bray & Way 1997:11), whilst a single Saxon burial was found at Huckeridge Hill, 1km west of the site in 1806 (Rosen 1978:247, CHER 04537).

A reference is first made to Sawston in the 10th century (Taylor 1998:76, Reaney 1943:96) and the name appears again before the Norman Conquest in the Chronicle of Ramsey Abbey (Ekwall 1936:386). Furthermore, the manor estates of Dernford, Huntingdon and Pyratts were all established prior to the Conquest (Rosen 1978:249-251), and Dernford Mill may also have been pre-11th century (*ibid*). Several watermills are also mentioned in Sawston in the Domesday Survey. This evidence may point to small, nucleated occupation sites established close to the river courses (the north and east of the parish) for practical and possibly industrial reasons (Williams & Martin 2003:528, 536, 538). To date no evidence for Saxon settlements have been found within Sawston although investigations at the manor sites have been limited.

Sawston appears as a variant of Salse and Salsi in the 10th and 11th centuries and translates to 'the enclosure/farmstead of Salse (or Salse's people)'. The prefixes derive from old Germanic and old Scandinavian/Norwegian (Reaney 1943:96), associated with the pre-medieval European invasions and migrations. Saxon activity in the wider area is attested to by the dykes, Brent dyke being only 2km southeast of Sawston. The positioning of the dykes across Roman roads suggests defensive or territorial functions.

6.4 Medieval

There were four primary manors controlling Sawston's lands documented in the early medieval. The most prominent were Pyratts, held by the Pirot family, and Dernford, both noted at the time of the Norman Conquest, (by the 14th century, the latter was also held with Pyratts) (Rosen 1978:249-51). A smaller moated manor house, known as Huntingdons (or Somerys) existed prior to the Conquest, on the site of what is now Huntingdon Farm, 1.4km south-west of the assessment area. A fourth estate, Dale manor, was originally held by the Pirot family but held separately by the 12th century (Rosen 1978:251). These estates were fairly dispersed across the parish. Dernford manor was originally located at the north of the parish, where Dernford Farm now exists. Dale manor stood within a moated site on the east side of the road from Cambridge and north of the main village (Taylor 1998:76; Rosen 1978:251). Much of the Dale estate was covered by Deal Grove. A large portion of this woodland still exists adjacent to the business park. By 1766 the manor was no longer extant, although earthworks of the moated site can still be seen 400m south-west of the development area in Deal Grove (CHER 00165).

The Domesday Survey records these manors as having a combined population of 38 villagers, suggesting an extant small, pre-Conquest settlement. Furthermore, the position of Dernford and Dale manors at the northern end of the parish, coupled with the single Saxon inhumation at Huckeridge Hill, could suggest that any pre-Conquest settlement occurred in this area, rather than to the south where the medieval village developed. However, this is mere speculation. By 1279, there were some 125 dwellings, home to perhaps as many as 625 people (Taylor 1998:76-7). This was likely a direct result from increased cultivation in the northern fields of the parish and surrounding areas (Taylor 1973:98). Environmental and economic difficulties were documented in a survey in 1342. These difficulties forced many landowners to sell or lease their lands to peasants, which led in many cases to their independence and freedom (Taylor 1973:142).

The location of Dale manor on the east side of the road from Cambridge, as noted in the late 13th century, demonstrates that by this time, Sawston had at least one major road passing through the settlement. This road linked Cambridge and Royston to London in the south. A village cross dating to the later medieval, (CHER 04167), marked the junction between this main road (High Street) and Church Street, which itself may have followed the alignment of an old Roman route, (Mortimer 2007 pers.comm.). The heavy traffic along the High Street eventually led to the decline of dispersed settlement in the parish, in favour of linear development along Sawston's main artery.

6.5 Post Medieval and Modern

The village of Sawston saw considerable industrial development from the 17th century on, and the opportunity for employment lead to increased population. By the later post medieval period, Sawston was one of the larger villages in South Cambridgeshire, home to a wide variety of commercial and industrial businesses (Post Office Directories 1879:96; Kelly's Directories 1937:230). Sawston parish was officially enclosed in 1811 although illegal enclosing of lands had been occurring since the early medieval period.

Residential development in Sawston village continued along the High Street (Cambridge Road) and the junction with Church Street. Registered listed buildings in the HER indicate that the post medieval development occurred along Cambridge Road from Huntingdon Farm to just north of the modern school with a small concentration around the present police station. The majority of the housing estates and business parks immediately around the assessment site were not built until the latter half of the 20th century. The north of the parish is prone to flooding and, as the cartographic study shows, with the exception of North Farm, the north of the parish appears to have remained rural land until the late 20th century. The maps reveal that the extant North Farm dates to the mid-late 19th century. The flooding was a serious problem even in the 20th century, when in 1918 floodwaters resulted in the collapse of a row of cottages on Mill Lane (Taylor 1998:74).

The Inclosure map of 1811 shows the land on which the development area is located as belonging to the prominent Richard Huddlestone, who owned a large portion of the parish lands. Unfortunately, there is little supplementary information to be obtained from this source.

The later maps show the disused railway running along what is now the north-east boundary of the site and the presence of North Farm, which was built some time between 1811 and 1886. North Farm, built on Huddlestone land was indeed owned by the family, who in 1879 still owned prominent estates including St Mary's Church and Sawston Hall (Post Office Directories 1879:95). However, 1922 sales documents indicate that many of their estates were sold, including North Farm with its 158 acres. This land undoubtedly encompasses the development area and so it can be surmised that the site was at least used as agricultural lands from the mid to late 19th century.

The farm was accessed by a small track leading from the main village, and what is now West Way. The farm appears to have changed very little from its original layout, displaying some signs of building alterations.

7 Degree of Survival of Archaeological Remains

This section broadly assesses the degree of survival of archaeological remains in the areas defined by deposit mapping. The assessment takes the form of a prediction model based on probability and not certainty. It is intended as a guide only.

There is no indication of any building activity within the assessment site prior to the construction of the business park in the late 20th century. North Farm, 150m northeast of the site dates to the mid-late 19th century and its proximity suggests the development area may have fallen within the farm's agricultural lands prior to the construction of the business park. Numerous unexcavated archaeological features have been identified by aerial photographs of cropmarks in the wider area. No features have been recorded in the immediate vicinity of the assessment site (with the exception of the disused 19th century railway) implying that this area has remained essentially inactive until the modern industrial development. The documentary evidence indicates that Deal Grove has existed since at least the early-mid medieval period (Rosen 1978:251). The original extent of this grove is unknown but it may have stretched over what is now the Business Park and northern parts of the village.

The survival of any archaeological remains will depend entirely on the nature and depth of the levelling associated with the business park construction and of the building foundations. However, excavations elsewhere in the village noted deep subsoils (Mortimer 2007 pers.comm.) which, if present at the assessment site, may allow for good preservation of archaeological remains. It is not possible at this stage to accurately determine the potential survival of any archaeological remains.

8 Rating

Based on the distribution of known finds and their degree of survival in the study area, as defined in the previous sections, rating can be summarised as follows:

Period	Distribution	Survival
Prehistoric	moderate/low	unknown
Roman	moderate/low	unknown
Saxon	low	unknown
Medieval	low	unknown
Post medieval	low	unknown

9 Conclusions

The cumulative evidence points toward moderate to low potential for Bronze and Iron Age remains to exist beneath the development area. Remains of this date are likely to be associated with or at least similar to the finds and features revealed during excavations at the Police Station and Lynton Way sites. That is, Middle to Late Bronze Age occupation activity and networks of field/enclosure systems and to a lesser extent, remains of late Iron Age features, including enclosures and possibly traces of occupation.

Similarly, the scatters of Roman material from the village and parish (including the site of a building to the north in the Granta valley) and the likely route of a Roman road running south-east of the development area suggest traces of contemporary (1st century AD) land use and stray finds associated with movement along the roadway may be encountered. Settlement evidence during the Roman era is scarce, although the known Roman route to which Church Street adheres and the road junction recorded at the Police Station site, suggest the possibility of some occupation in the Sawston area.

Finds associated with movement along the Icknield Way during the late prehistoric are also potentially likely to have been deposited around the development area. There is no evidence for activity on the site during the Saxon, medieval and post medieval periods, although it may have been encompassed by Deal Grove for some or all of the medieval period. The site's inert history is owed to the recurrent flood problems in the north of the parish and the heavy peats to the north of the site which have rendered the land unusable for building purposes. The development area is located on the brink of these heavy peats.

The presence of later prehistoric and Roman remains to the south-east and south-west of the site could suggest that similar features may extend into the assessment area, although it is not likely that the site has been a focal point of activity at any time. The nature and depth of the existing groundworks at Dales Manor Business Park are not known and therefore the survival and likely preservation of any remains is indeterminable, although the ephemeral traces of agricultural activity relating to the adjacent North Farm are likely to have been obliterated by the modern construction.

Acknowledgements

The author would like to thank Savills (L&P) Ltd for commissioning and funding the report. The project was managed by Toby Gane, of Cam Arc. Severine Bezie illustrated the assessment.

Bibliography

- | | | |
|--|----------|---|
| Aerial Photo Services | 2005 | 'Land off Lynton Way, Sawston, area centre on TL 4945 4975, Cambridgeshire: Aerial Photo Assessment |
| Bray, S. | 1994 | 'Borough Hill Enclosure, Sawston: An Archaeological Watching Brief' CCC report 95 |
| Bray, S. & Way, T. | 1997 | 'Borough Hill, Sawston, Cambridgeshire: An Archaeological Watching Brief' CCC report A123 |
| Cessford, C. & Mortimer, R. | 2004 | 'Sawston Police Station, Sawston: An Archaeological Evaluation and Watching Brief CAU report 596 |
| Eddisford, D, Williamson, I, Doyle, K & O'Brien, L | 2005 | 'Dernford Farm, Sawston, Cambridgeshire: Archaeological Trial Trench Evaluation' AS Ltd report 1741 |
| Ekwall, E. | 1936 | <i>The Concise Dictionary of English Place-Names</i> Oxford University Press: Oxford |
| French, C. & Sulas, F. | 27/06/05 | 'A Micromorphological Analysis of the Buried Palaeosol at Borough Hill, Sawston, Cambridgeshire' Short paper |
| Grant, J. & Weston, P. | 2004 | 'Dernford Farm, Sawston, Cambridgeshire: An Archaeological Desk-based Assessment and Investigation (fieldwalking & geophysical survey)' AS Ltd report 1447 |
| Kelly's Directories | 1937 | <i>Kelly's Directories of Cambridgeshire, Suffolk and Norfolk</i> Kelly's Directories Ltd: London pp229-230 |
| JSAC | 2003 | 'An Archaeological Evaluation Excavation at Borough Hill, Sawston, Cambridgeshire' John Samuels Archaeological Consultants |
| JSAC | 2001 | 'An Archaeological Evaluation Excavation at Borough Hill, Sawston, Cambridgeshire' John Samuels Archaeological Consultants 685/01/07 |
| Kirby, T. & Oosthuizen, S. (eds.) | 2000 | <i>An Atlas of Cambridgeshire and Huntingdonshire History</i> Centre for Regional Studies, Anglia Polytechnic University: Cambridge |
| Last, J. | 2000 | 'The Bronze Age' in Kirby, T. & Oosthuizen, S. (eds.) <i>An Atlas of Cambridgeshire and Huntingdonshire History</i> Anglia Polytechnic University: Cambridge p9 |

- Malim, T. 2000a 'Prehistoric Trackways' in Kirby, T. & Oosthuizen, S. (eds.) *An Atlas of Cambridgeshire and Huntingdonshire History* Anglia Polytechnic University: Cambridge p11
- Malim, T. 2000b 'Roman Communications' in Kirby, T. & Oosthuizen, S. (eds.) *An Atlas of Cambridgeshire and Huntingdonshire History* Anglia Polytechnic University: Cambridge p21
- Mortimer, R. 2001 'The Hillfort at Borough Hill, Sawston, Cambridgeshire: An Archaeological Watching Brief' CAU report 450
- Mortimer, R. 2006 'Bronze Age enclosures on land at rear of 16-20 Cambridge Road, Sawston, Cambridgeshire (the Police Station site)' CCC AFU report 831
- Muir, R. 2002 *The New Reading the Landscape. Fieldwork in Landscape History* University of Exeter Press: Exeter
- Pollard, J. 2000 'The Neolithic' in Kirby, T. & Oosthuizen, S. (eds.) *An Atlas of Cambridgeshire and Huntingdonshire History* Anglia Polytechnic University: Cambridge p7
- Post Office Directories 1879 *Post Office Directories of Cambridgeshire* Kelly & Co: London pp95-6
- Reaney, P.H. 1943 *The Place-Names of Cambridgeshire & the Isle of Ely* English Place-Name Society vol. 19 Cambridge University Press: Cambridge
- Rosen, A.B. 1978 'Sawston' in APM Wright (ed.) *Victoria history of the County of Cambridge and the Isle of Ely. Volume VI*. The Institute of Historical Research/Oxford University Press, 246-63
- Sutherland, T.L. 1995 'Archaeological Evaluation at The Spike, High Street, Sawston. Cambridgeshire' CCC report A54
- Taylor, A. 1998 *Archaeology of Cambridgeshire vol. 2: South East Cambridgeshire and the Fen edge*. Cambridgeshire County Council: Cambridge
- Taylor, A. 1997 *Archaeology of Cambridgeshire vol. 1: South West Cambridgeshire*. Cambridgeshire County Council: Cambridge
- Taylor, A. 1978 *Anglo-Saxon Cambridgeshire* The Oleander Press: Cambridge
- Taylor, C. 1977 *Prehistoric Cambridgeshire* The Oleander Press: Cambridge
- Taylor, C. 1973 *The Cambridgeshire Landscape: Cambridgeshire & the Southern Fens*. Hodder & Stoughton: London
- Weston, P., Newton, A., & Nicholson, K. 2006 'Late Bronze Age Enclosures at Lynton Way, Sawston, Cambridgeshire' AS Ltd.
- Williams, A. & Martin, G.H. (eds.) 2003 *Domesday Book: A Complete Translation*. Penguin Books: Strand, London
- Woolhouse, T., Williamson, I. & Harris, P. 2005 'Land at Lynton ay, Sawston, Cambridgeshire: An Archaeological Desk-base Assessment and Field Evaluation' AS Ltd report 1878

Maps Consulted

British Geological Survey 2002	Sheet 205, England and Wales 1:50,000 (Provisional Series)
Soils of England and Wales 1983	Sheet 4, Eastern England, 1:250,000
Inclosure Map 1811 (Tracing)	R60//24/2/62
Inclosure Award 1811	P136/26/1A
1st Edition Ordnance Survey Map 1886 25" Scale	Planweb accessed 15/11/07
2nd Edition Ordnance Survey Map 1903 25" Scale	Planweb accessed 15/11/07
1937 Ordnance Survey Map 6" Scale	Planweb accessed 15/11/07

Appendix 1: Health and Safety Statement

CAM ARC will ensure that all work is carried out in accordance with Cambridgeshire County Council's Health and Safety Policies, to standards defined in *The Health and Safety at Work, etc. Act, 1974* and *The Management of Health and Safety Regulations, 1992*, and in accordance with the manual *Health and Safety in Fieldwork Archaeology* (SCAUM 1997).

Risk assessments prepared for the CAM ARC office will be adhered to.

CAM ARC has Public Liability Insurance. Separate professional insurance is covered by the Public Liability Policy held by CAM ARC as part of Cambridgeshire County Council. CAM ARC's insurance cover is:

Employers Liability	£20,000,000
Public Liability	£30,000,000

Full details of Cambridgeshire County Councils' Health and Safety Policies and the archaeological unit's insurance cover can be provided on request.

Appendix 2: Summary of HER Entries

HER No.	Grid Ref. (TL)	Keywords	Period	Form	Designation
00165	485 502	Moated site at Dales Wood (manor, house, moat)	Med	Earthworks	N/A
04113	489 493	Neolithic flint tools found near vicarage, including blades, scrapers and cores.	Neo	Find Spots	N/A
04118	491 496	2 D-shape and 2 rectangular enclosures. Roman pottery recovered from the site during building work.	Ro	Cropmarks, now covered by modern housing	N/A
04151	493 495	Roman pottery found during building work.	Ro	Find Spots	N/A
04167	4866 4923	Site of market cross	Med	Monument	N/A
04325	4932 5137	Part of pudding stone quern, Babraham Common	Ro	Find Spot	N/A
04330	495 514	Horseshoes and horseballs, Stapleford	Med	Collection	N/A
04537	4850 5041	Inhumation burial, found 1806 at Huckeridge Hill	AS	Burial	N/A
04537a	4806 5041	Lance heads and 'celts' found at Huckeridge Hill	BA	Find Spots	N/A
04761	4963 5133	Part of pudding stone quern found in 1952	Med	Find Spot	N/A
04764	496 514	Fragments of artefacts and fibulae	Ro	Find Spots	N/A
04764A	496 514	U casting	U	Find Spot	N/A
04788	493 514	4 ponds in a rough line, roughly circular	Ro	Monument	N/A
04788a	493 514	Linear features, mostly pingos	U	Cropmarks	N/A
06323	50 50	Levallois flint flake in Babraham Park.	Pa	Find Spot	N/A
09283	500 508	Enclosure, Babraham	U	Cropmark	N/A
09354	500 495	Three ring ditches, Pampisford	U	Cropmarks	N/A
09743	487 499	D shape enclosure, now built over	U	Cropmark	N/A
10450	4853 4946	Late 17 th century dovecote on Mill Lane.	P Med	Building	N/A
CB15667	4980 5090	Slave shackles, perhaps from R site 500m NW	Ro	Find spot	N/A
CB15777	4851 4983	Neo scraper and flake; LBA/EIA ditches and pottery; R road, ditches, features; Med agricultural headland. Found at Sawston Police Station	Neo, LBA/EIA, Ro, Med	Evaluation	N/A
MCB16829	4943 4978	Enclosure, pits, roundhouse and D shape enclosure at Lynton Way	M/LBA	APS, Evaluation, Excavation	N/A
MCB17152	4856 4990	Enclosures, lithic working site and finds, Cambridge Road	M/LBA	Evaluation	N/A
MCB17619	48361 49415	Flint scatter, 3 Bowers Terrace	E Mes to E Neo	Find spots	N/A

Key to periods:

Pre	Prehistoric
Pa	Palaeolithic
Mes	Mesolithic
Neo	Neolithic
BA	Bronze Age
IA	Iron Age
Ro	Roman
AS	Anglo-Saxon
Med	Medieval
P Med	Post Medieval
Mod	Modern
E/L	Early/Late

Appendix 3: Aerial Photographic Assessment

By Rog Palmer

Summary

This assessment of aerial photographs examined an area of some 3 hectares (centred TL490 505) in order to identify and accurately map archaeological, recent and natural features and thus provide a guide for field evaluation.

No archaeological features were identified within or adjacent to the Development Area.

There is a possibility that any archaeological deposits may have been damaged by levelling or earth moving that was recorded on photographs taken in 1967.

Other damage within the Development Area may have been caused by three small quarries.

Land, including the Development Area, in this part of Cambridgeshire shows evidence of periglacial disturbance (pingos).

Original photo interpretation and mapping was at 1:2500 level.

1 Introduction

This assessment of aerial photographs was commissioned to examine an area of some 3 hectares (centred TL490 505) in order to identify and accurately map archaeological, recent and natural features and thus provide a guide for field evaluation. The level of interpretation and mapping was to be at 1:2500.

2 Archaeological and natural features from aerial photographs

In suitable cultivated soils, sub-surface features – including archaeological ditches, banks, pits, walls or foundations – may be recorded from the air in different ways in different seasons. In spring and summer these may show through their effect on crops growing above them. Such indications tend to be at their most visible in ripening cereal crops, in June or July in this part of Britain, although their appearance cannot accurately be predicted and their absence cannot be taken to imply evidence of archaeological absence. In winter months, when the soil is bare or crop cover is thin (when viewed from above), features may show by virtue of their different soils. Upstanding remains, which may survive in unploughed grassland, are also best recorded in winter months when vegetation is sparse and the low angle of the sun helps pick out slight differences of height and slope.

Such effects are not confined only to archaeological features. Disturbance of soil and bedrock can produce its own range of shadow, crop and soil differences and it is hoped that a photo interpreter, especially one familiar with local soils, is able to distinguish archaeological from other features. There may, however, remain some features of unknown origin that cannot be classified without specialist knowledge or input from field investigation.

3 Photo interpretation and Mapping

Photographs examined

The most immediately informative aerial photographs of archaeological subjects tend to be those resulting from observer-directed flights. This activity is usually undertaken by an experienced archaeological observer who will fly at seasons and times of day when optimum results are expected. Oblique photographs, taken using a hand-held camera, are the usual products of such investigation. Although oblique photographs are able to provide a very detailed view, they are biased in providing a record that is mainly of features noticed by the observer, understood, and thought to be of archaeological relevance. To be able to map accurately from these photographs it is necessary that they

have been taken from a sufficient height to include surrounding control information.

Vertical photographs cover the whole of Britain and can provide scenes on a series of dates between (usually) 1946-7 and the present. Many of these vertical surveys were not flown at times of year that are best to record the archaeological features sought for this Assessment and may have been taken at inappropriate dates to record crop and soil responses that may be seen above sub-surface features. Vertical photographs are taken by a camera fixed inside an aircraft and with its exposures timed to take a series of overlapping views that can be examined stereoscopically. They are often of relatively small scale and their interpretation requires higher perceptive powers and a more cautious approach than that necessary for examination of obliques. Use of these small-scale images can also lead to errors of location and size when they are rectified or re-scaled to match a larger map scale.

Cover searches were obtained from the Cambridge University Collection of Aerial Photographs (CUCAP) and the National Monuments Record: Air Photographs (NMRAP), Swindon. Photographs included those resulting from observer-directed flights and routine vertical surveys. All CUCAP photographs were examined and a selection from NMRAP bought as laser copies.

Photographs listed and consulted are in section 5 of this report.

Base maps

Digital data from original survey at scales of 1:2500 or greater were provided by the client. This was supplemented by using the First Edition OS six-inch map to provide control information for one early photograph.

Study area

Photographs were examined in detail within a radius of 500m from the development site.

Photo interpretation and mapping

All photographs were examined by eye and under slight (2x) magnification, viewing them as stereoscopic pairs when possible. Scanned digital copies of the most informative were transformed to match the digital data using the specialist program AirPhoto (Scollar 2002). All scanned photographs were enhanced using the default setting in AirPhoto before being examined on screen. Transformed files were set as background layers in AutoCAD Map, where features were overdrawn, making reference to the original prints, using standard conventions. Layers from this final drawing have been used

to prepare the figure in this report and have been supplied to the client in digital form.

Accuracy

AirPhoto computes values for mismatches of control points on the photograph and map. In all transformations prepared for this assessment the mean mismatches were less than $\pm 1.50\text{m}$. These mismatches can be less than the survey accuracy of the base maps themselves and users should be aware of the published figures for the accuracy of large scale maps and thus the need to relate these mismatches to the Expected Accuracy of the Ordnance Survey maps from which control information was taken (OS 2007).

4 Commentary

Soils

The Soil Survey of England and Wales (SSEW 1983) shows the area to be situated on a soil of Chalky drift and chalk (soil association 511e: SWAFFHAM PRIOR) and the Development Area is at, or close to, the junction of two later deposits – Drift over chalk (soil association 571k: MOULTON) to the east and river alluvium (soil association 814a: THAMES) on the west side. The alluvial deposits may mask features and the Soil Survey notes that both Chalky Drift and Drift are liable to include local areas of patterned ground of stripes and polygons resulting from periglacial action.

Archaeological features (see figure)

No archaeological features were identified within or immediately adjacent to the Development Area. Four enclosures, each of a D-shape, have been recorded south of the Development Area: a single enclosure at TL488500 is just within the Study Area and at a greater distance is a pair of enclosures (TL491496) with a single enclosure close by to the northeast. The latter were mapped for an earlier Assessment (Palmer 2005).

Possible damage to the site

The present factory on site was first recorded in 1967 at a time when there appeared to be extensive levelling of the ground on its northwest and northeast sides. The area being worked on this date is shown in the figure and comprised what may have been a quarried area (mapped as *Deeper topsoil stripping*) and a greater extent of worked ground that extended north from that to the railway. The condition of the ground surface suggests that damage will have been done to any archaeological contexts in that area. The 1967 photographs recorded

the activity on a single day. It is not known, and is not visible on other photographs, whether the mapped area shows the maximum amount of such working or just the work done by 8 May 1967.

Earlier photographs suggest there to have been three small rectangular quarries within the Development Area. By 1946 one (the smallest on the map) showed as a shallow square hollow and the other two were fenced off and covered in scrub and vegetation.

Non-archaeological features

Aerial photographs show there to have been an extensive area of fossil ground ice depressions (or open system pingos) in this part of Cambridgeshire. In upstanding form these would have been a series of ridges, often circular or arcs of circles, that surrounded the slightly lower ground of the ice depressions. The mechanism by which they were formed has been described and illustrated with air photographs of surviving examples by Harris (1990, 124-128).

These areas would have remained as uneven ground until levelled by cultivation or other means and by 1946 all fields in the Study Area had been levelled except (possibly) those immediately adjacent to North Farm. On recent photographs, taken at appropriate times of the year, the pingos are visible as swirls of lighter soil that show the former ridges and sometimes as 'ring ditches' that mark the junction of a ridge and its internal depression.

Traces of pingos have been recorded within the Development Area. Other non-archaeological features were noted above.

Land use

Most fields in the Study Area have been in arable use of all dates of photography. Exceptions are two fields by North Farm which were in pasture until the late 1960s. Use as arable land means that there is a good chance that aerial photographs taken at appropriate times of the year will record crop and soil differences that may indicate sub-surface features that may include those of archaeological origin. To date, the photographic record of the area has shown only periglacial features as crop and soil differences.

5 Aerial photographs examined

5.1.1 Cambridge University Collection of Aerial Photographs (searched 8 November 2007)

Oblique photographs

PHOTO_ID	NGRE	NGRN	DATE
FE5-9	549200	249700	29 Jun 1950
HE31	548700	250000	03 Jun 1952
VA21-22	548300	250600	14 Jun 1957
CFV21	549000	250700	10 May 1978
CFV26	549000	250700	10 May 1978

Vertical photographs

PHOTO ID	DATE	SCALE	NGRE	NGRN
V-CL017	11 Apr 1964	5500	548997	250195
RC8A207	8 May 1967	5280	548779	250664
RC8A208	8 May 1967	5280	548788	250196
RC8DH243	29 Oct 1979	4900	549290	251061
RC8DH244	29 Oct 1979	4900	548903	250956
RC8DH245	29 Oct 1979	4900	548517	250851
RC8JM265	30 Jun 1987	10000	548275	251187
RC8JM266	30 Jun 1987	10000	549172	251192
RC8JM267	30 Jun 1987	10000	549939	251203
RC8JQ116	21 Aug 1987	10000	549998	250895
RC8JQ117	21 Aug 1987	10000	549288	250882
RC8knBE063	12 Jun 1988	10000	550105	249619
RC8knBE064	12 Jun 1988	10000	549069	249512
RC8knBE122	12 Jun 1988	10000	548914	251003

5.2 National Monuments Record: Air Photographs (cover search 20535)

Vertical Collection

Photo ID	Grid Ref (start)	Grid Ref (end)	Date flown	Scale
RAF/106G/UK/1718	TL491509	TL485510	06-Sep-46	9800
RAF/58/651	TL488502	TL495502	24-Apr-51	10000
RAF/540/706	TL492506	TL492506	09-Apr-52	5100
RAF/540/706	TL493504	TL493504	09-Apr-52	5100
RAF/540/1143	TL491498	TL490510	09-Jun-53	10000
RAF/82/1428	TL491503	TL491503	23-May-56	10000
RAF/58/214	TL484509	TL494500	17-Apr-49	8000
MAL/68038	TL486503	TL497503	02-Jun-68	11000
MAL/69069	TL489505	TL489505	22-Jul-69	10500
OS/52R32	TL490501	TL485505	23-May-52	8000
OS/52R32	TL489510	TL495506	23-May-52	8000
OS/67145	TL491509	TL491502	05-Jun-67	7500
OS/76059	TL493503	TL493503	24-May-76	7600
OS/91163	TL487505	TL493504	15-Aug-91	8100

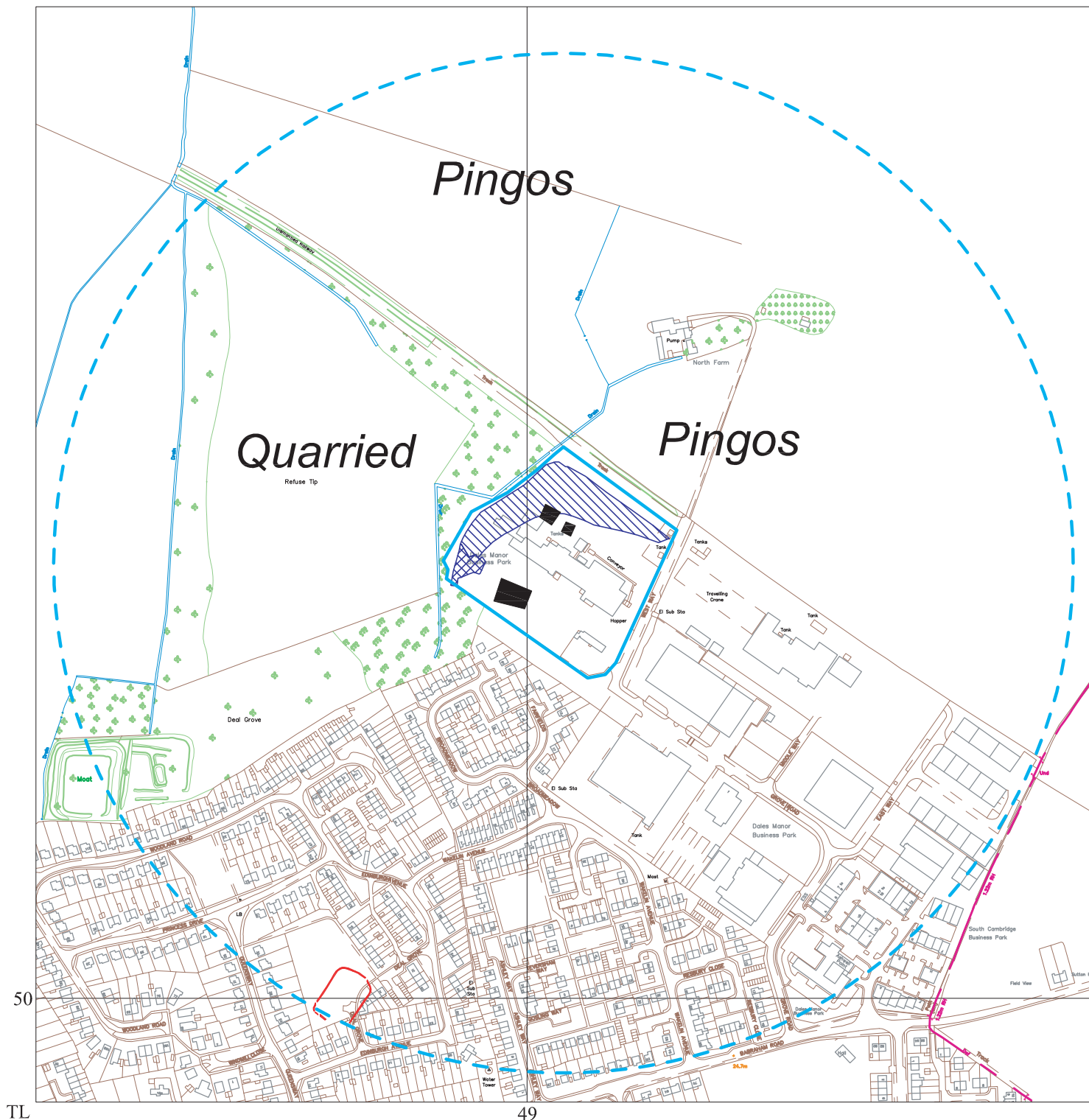
Specialist Collection

TL4950/2/161-162 13 April 1977

Most informative photographs

RC8-A 207
 RAF/106G/UK/1718: 4166-4167
 RAF/58/214: 5131-5132
 TL4950/2/161-162
 HE31

Dales Manor Business Park, Sawston, Cambridge:
Features mapped from aerial photographs



- Development Area
- - - Study Area
- - - Archaeological ditch
- Possible quarry
- ▨ Topsoil stripping
- ▩ Deeper topsoil stripping

Original photo interpretation and mapping at 1:2500 level
based on photographs at CUCAP/ULM and NMRC.

Air Photo Services Cambridge
December 2007
Drawing: 0719Dale.dwg

Bibliography

- Harris, C. 1990 'Periglacial landforms', in Stevens, N (ed), *Natural Landscapes of Britain from the Air*. Cambridge
- Ordnance Survey 2007 <http://www.ordnancesurvey.gov.uk/productpages/landline/positional-background.htm>
- Palmer, R. 2005 *Land off Linton Way, Sawston, area centred TL49454975, Cambridgeshire: aerial photographic assessment*. Air Photo Services Report 2005/22.
- Scollar, I. 2002 'Making things look vertical', in Bewley, R.H. and Rączkowski, W., (eds), *Aerial archaeology: developing future practice*, NATO Science Series, Vol **337**, 166-172.
- SSEW 1983 *Soils of England and Wales: sheet 4: Eastern England (1:250,000)*. Soil Survey of England and Wales, Harpenden.

Terms and Conditions

Air Photo Services have produced this assessment for their clients, CAMARC, subject to the following conditions:

- Air Photo Services will be answerable only for those transcriptions, plans, documentary records and written reports that it submits to the clients, and not for the accuracy of any edited or re-drawn versions of that material that may subsequently be produced by the clients or any other of their agents.
- That transcriptions, documentation, and textual reports presented within this assessment report shall be explicitly identified as the work of Air Photo Services.
- Air Photo Services has consulted only those aerial photographs specified. It cannot guarantee that further aerial photographs of archaeological significance do not exist in collections that were not examined.
- Due to the nature of aerial photographic evidence, Air Photo Services cannot guarantee that there may not be further archaeological features found during ground survey which are not visible on aerial photographs or that apparently 'blank' areas will not contain masked archaeological evidence.
- We suggest that if a period of 6 months or more elapses between compilation of this report and field evaluation new searches are made in appropriate photo libraries. Examination of any newly acquired photographs is recommended.

- That the original working documents (being interpretation overlays, control information, and digital data files) will remain the property of Air Photo Services and be securely retained by it for a period of three years from the completion date of this assessment after which only the digital files may be retained.
- It is requested that a copy of this report be lodged with the relevant Sites and Monuments Record within six months of the completion of the archaeological evaluation.
- Copyright of this report and the illustrations within and relevant to it is held by Air Photo Services © 2007 who reserve the right to use or publish any material resulting from this assessment.



© Crown Copyright. All rights reserved Cambridgeshire County Council 100023205 2007

Figure 1: Location of the development area outlined (red) with HER numbers (green)

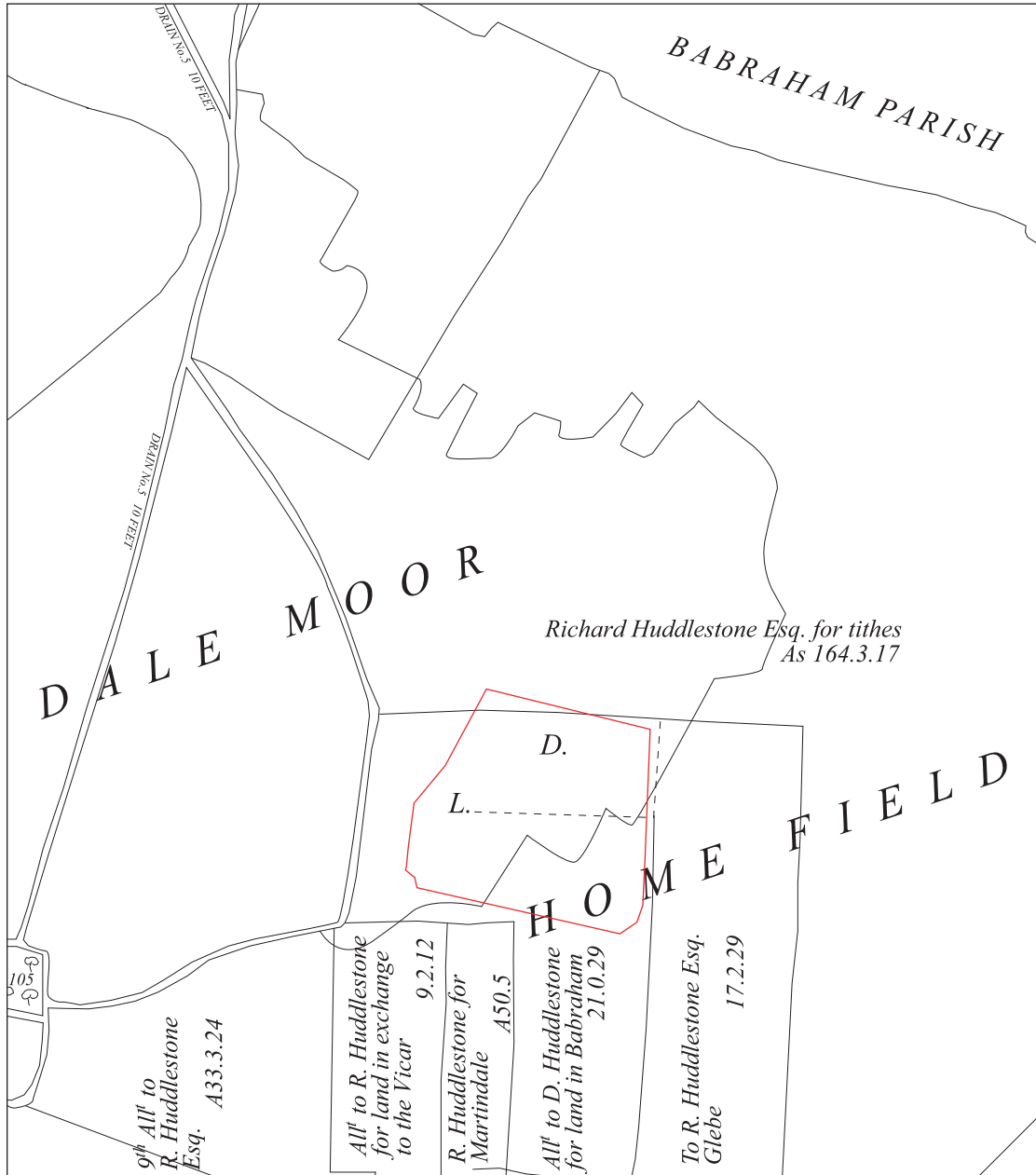


Figure 2: 1811 Inclosure Map

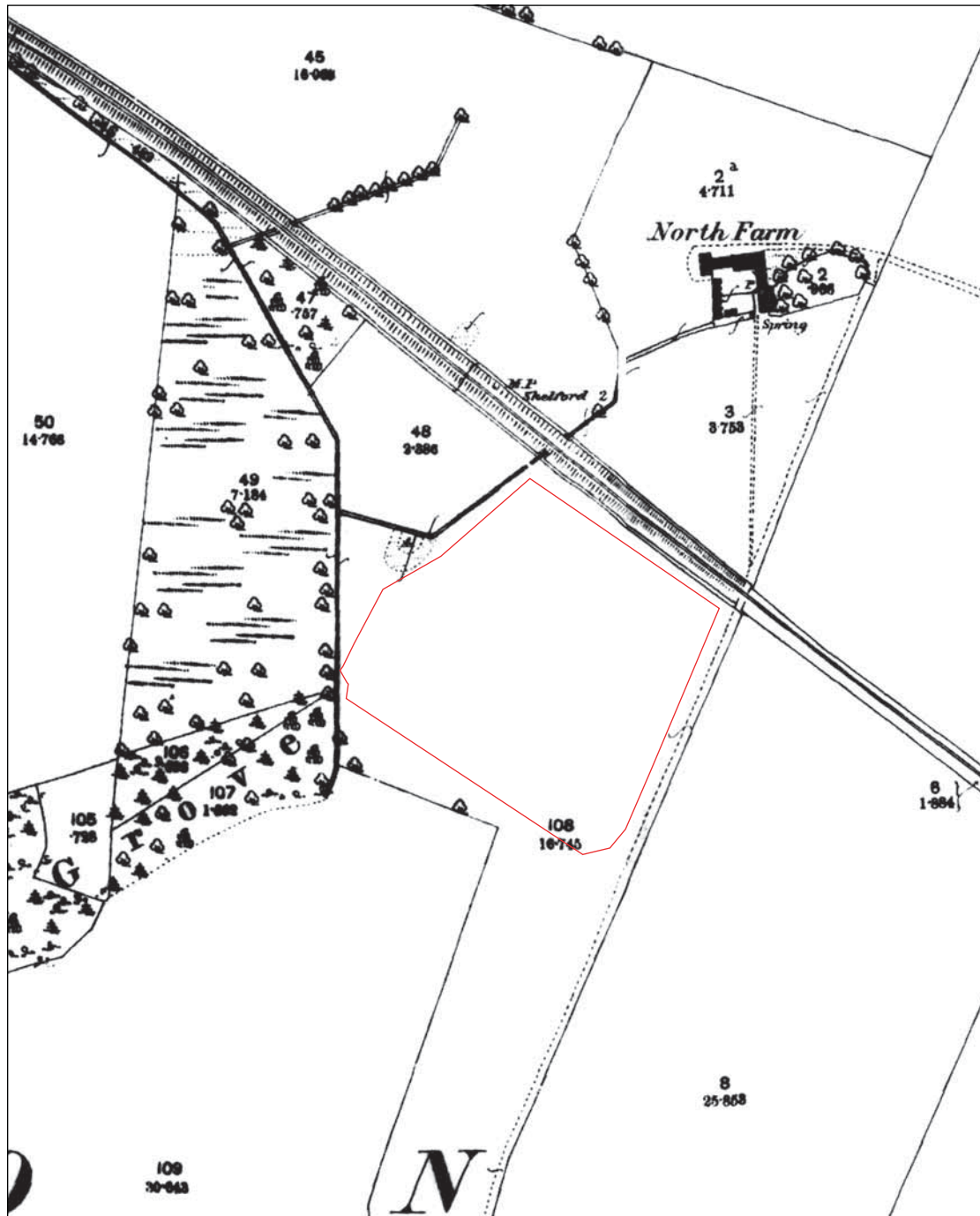


Figure 3: First Edition Ordnance Survey Map 1886

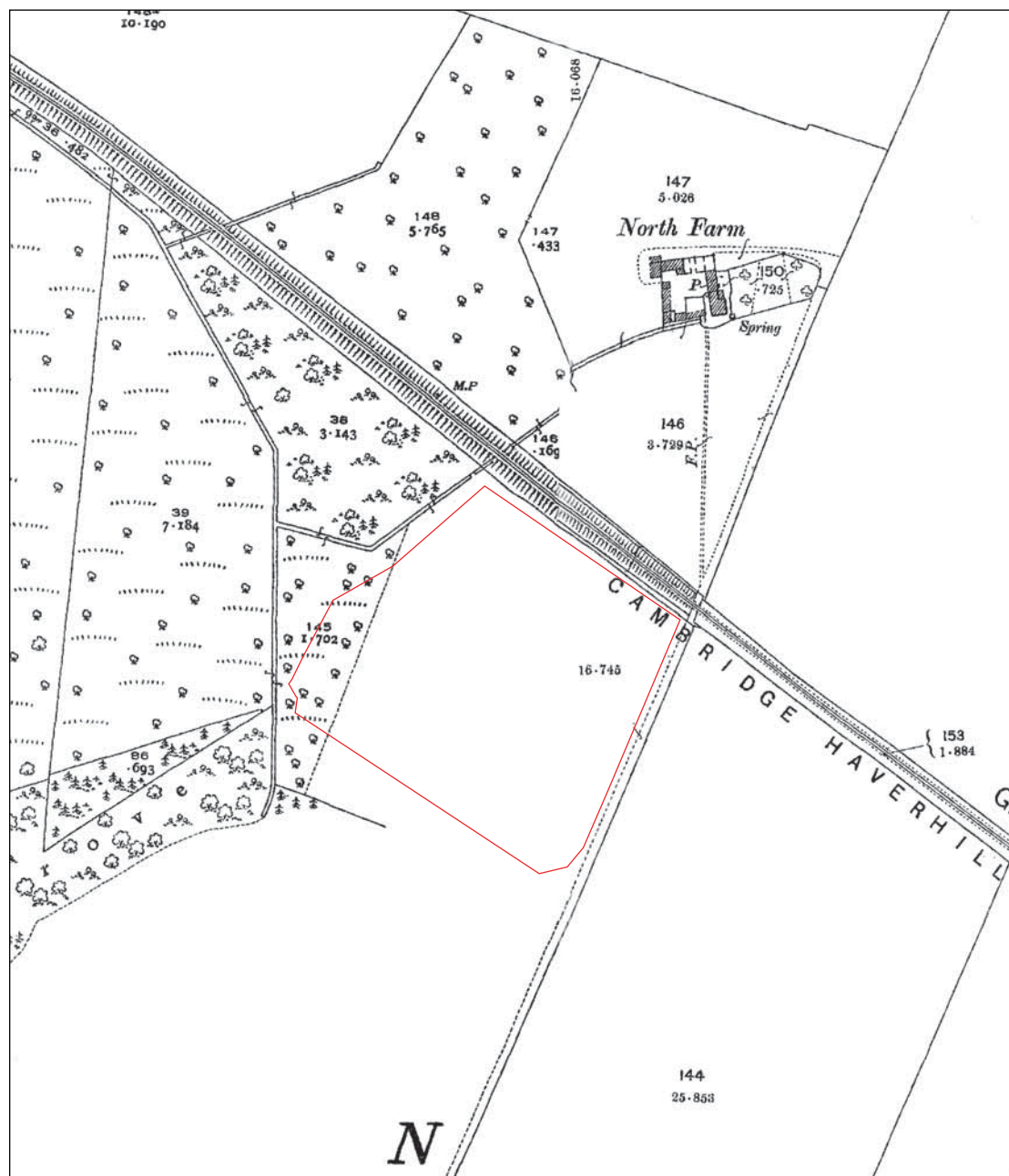


Figure 4: Second Edition Ordnance Survey Map 1903-1904

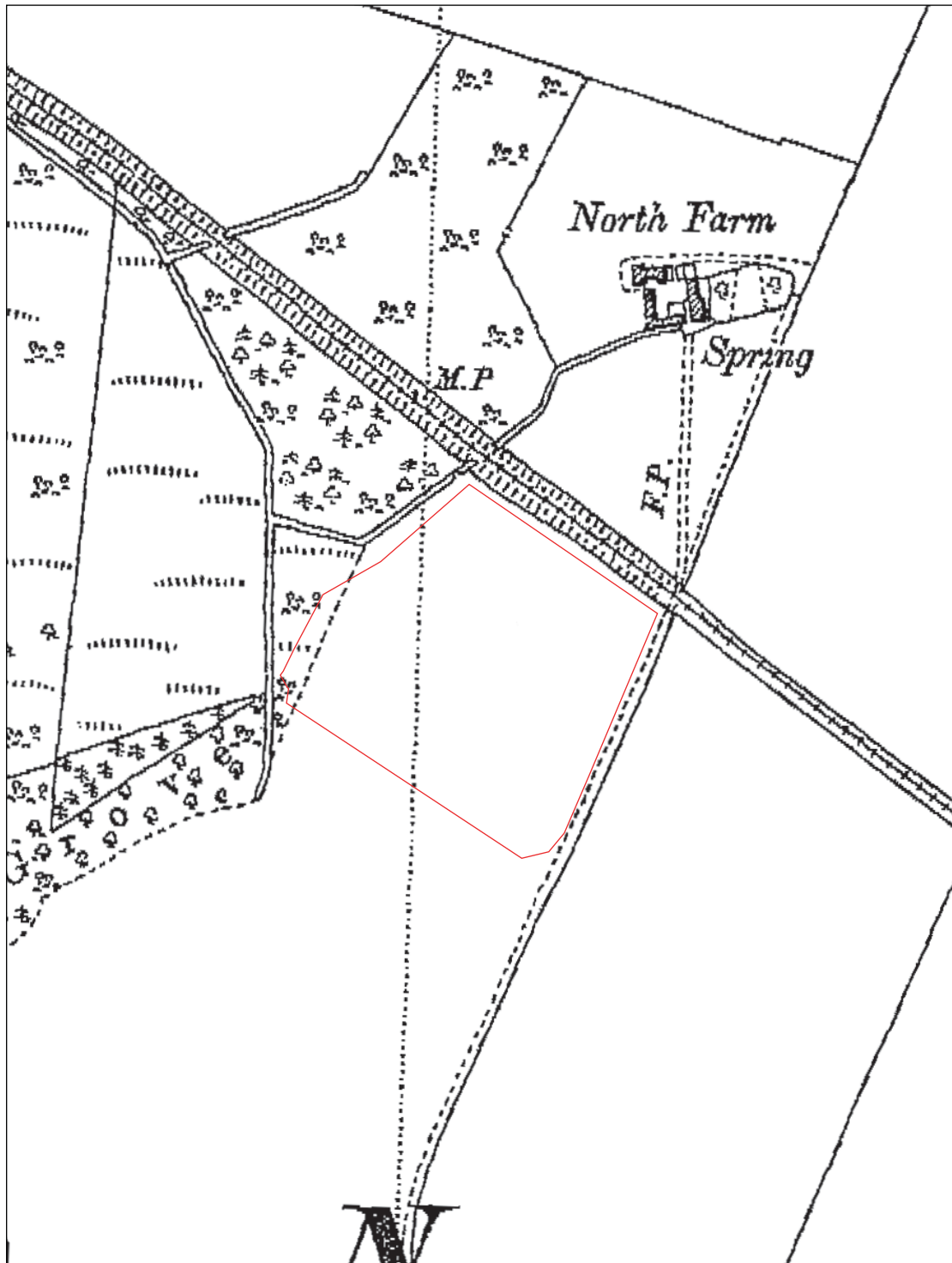


Figure 5: Provisional Edition Ordnance Survey Map 1937-1950



Figure 6: Oblique view of 3-dimensional model. Viewed from the south with development area highlighted (red)

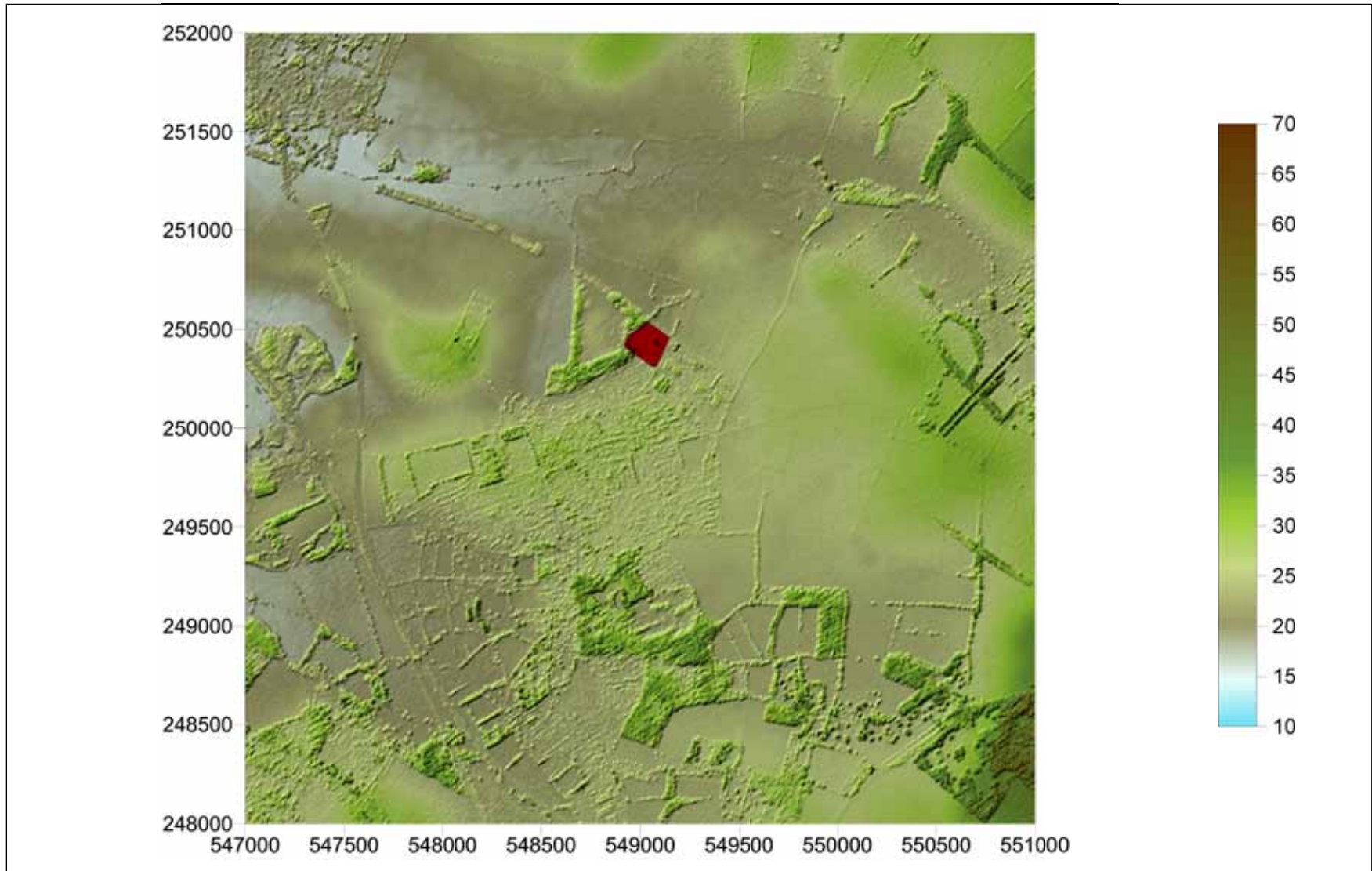
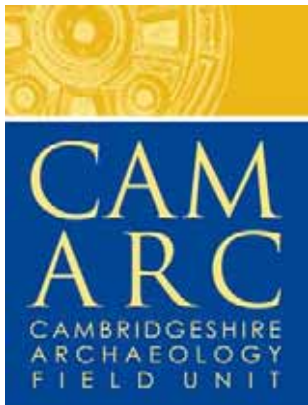


Figure 7: Vertical view of 3-dimensional model. Viewed from the south with development area highlighted (red)



CAM ARC,
Cambridgeshire County Council,
15 Trafalgar Way,
Bar Hill,
Cambridgeshire,
CB3 8SQ

General Enquiries: 01954-204191
Fax: 01954-273376

<http://www.cambridgeshire.gov.uk/archaeology>