

## **ARCHAEOLOGICAL DESK-BASED ASSESSMENT**

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**SCCAS REPORT No. 2009/280**

# **Land South of Grove Hill, Belstead**

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## **HER information**

<b>Planning application no:</b>	B/09/00901/OUT
<b>Grid Reference:</b>	TM 1345 4136
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<b>Project Officer:</b>	M. Sommers
<b>Documentary Study:</b>	A. M. Breen
<b>Funding Body</b>	Trevor Sparkes Consulting Ltd.
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## List of abbreviations used in the text

DBA	Desk Based Assessment
HER	Historic Environment Record
PAS	Portable Antiquities Scheme
PDA	Proposed Development Area
PPG 16	Planning Policy Guidance 16
SAM	Scheduled Ancient Monument
SCCAS	Suffolk County Council Archaeological Service
SCCAS/CT	Suffolk County Council Archaeological Service / Conservation Team
SSSI	Site of Special Scientific Interest

## Summary

Through an examination of the Suffolk HER, a documentary and map study, an aerial photographic assessment and a site walkover, this DBA has set the PDA within its immediate archaeological landscape.

No known archaeological sites lie within the PDA but a high potential for prehistoric and Roman sites and a medium potential for medieval sites has been identified. This is due to the presence of sites relating to these periods recorded on the County HER in the Study Area around the PDA, and cropmarks noted in aerial photographs in adjacent fields. The levels of preservation are considered to be high as the PDA appears to have been primarily pasture with only one small area having been ploughed.

The proposed development will have a severe negative impact upon the potential archaeological resource within the PDA. The proposed construction of housing with associated roadways and buried services will cause serious damage and even destroy any buried remains that may be present.

Consultation with the County Council Planning Archaeologist should be at the earliest opportunity to avoid any potential delays to the project as any further archaeological investigations that may be deemed necessary by the County Conservation Team can have cost and time implications.

It is recommended that in order to identify and assess the extent, character, density and depth of any archaeological remains that may be present a trenched evaluation of the area within the PDA that is outlined for the construction of housing be undertaken. The results of this work will inform the decisions of the County Archaeologist in determining the need and scope for the next stage of archaeological works.



# **1. Introduction**

## **Project background**

This archaeological DBA has been prepared by M. Sommers of Suffolk County Council Archaeological Service for Trevor Sparkes Consulting Ltd..

This DBA is the first stage of a programme of archaeological works to access the archaeological potential of the PDA in advance of a housing development (application No. B/09/00901/OUT).

## **Site description**

The subject of this DBA covers an area of approximately 9.5ha centred at TM 1345 4136 in the parish of Belstead (Fig. 1). Although this is a large site it is understood that only a 2.4ha area in the northwest corner will actually be developed with the remainder of the site becoming an area for wildlife.

The present land use is young, but established, woodland with occasional clearings.

## **Geology and topography**

The PDA is located 600m to the south of the Belstead Brook. It is on the valley side at circa 35-40m above sea level. The site slopes down to the north and gently to the east.

The geology comprises fine-grained loess deposits that originated as wind-blown sediments from glacial sources resulting in deep loams that are mainly well-drained, although some waterlogging can occur.

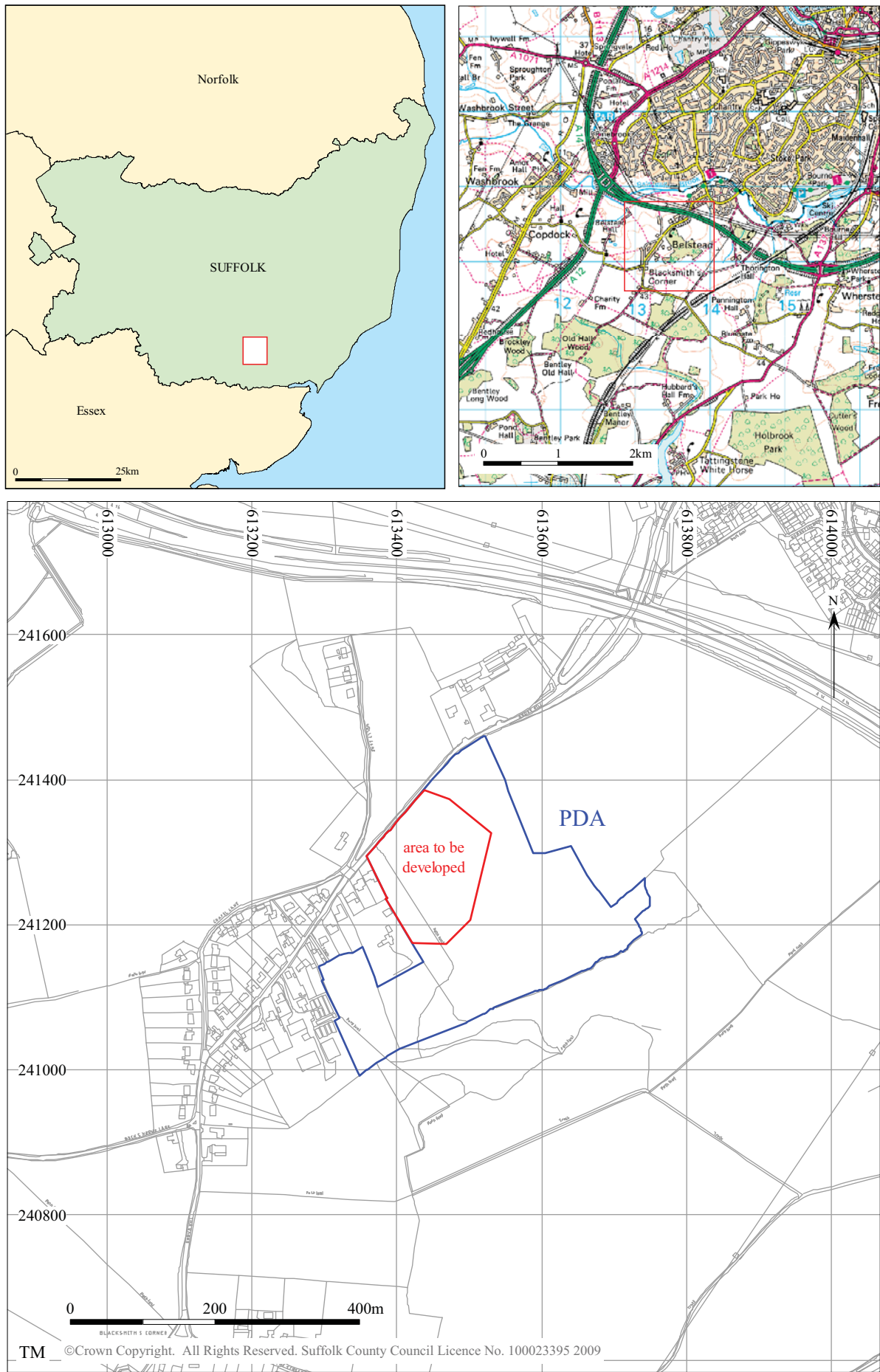
## **Scope of this report**

In order to set the PDA in its archaeological context a large study area was selected for examination. It is defined by the main A12 road to the northwest, Belstead Brook to the northeast, and the London-Norwich main railway line to the southeast. The southwest boundary is delineated by a series of existing field boundaries (Fig. 2). This equates to a study area of nearly 360ha.

In accordance with PPG16, the Government's guidance on archaeology and planning, ([www.communities.gov.uk/publications/planningandbuilding/planningpolicyguidance9](http://www.communities.gov.uk/publications/planningandbuilding/planningpolicyguidance9)) and based on a SCCAS/CT specification, this assessment examines the available archaeological sources. These include the Suffolk HER, reports of any archaeological investigations, all readily available cartographic and documentary sources, an aerial photographic survey and a site walkover.

## **Aims**

To determine as far as reasonably practicable from the existing records, the previous land use, the nature of the archaeological resource and the potential resource within the PDA.



## Methods

The methodology involved interrogating the following sources of data to meet the aims of this DBA.

- A search of the Suffolk HER for any records within 1km from the centre of the PDA. The results are described and mapped in the main body of the report.
- An examination of the literature with reference to archaeological excavations within the study area.
- A search for listed buildings within the study area, with particular reference to any that occur within the PDA. A summary is presented in the main report.
- An assessment of all cartographic sources relevant to the PDA to identify historic land-use, the siting of old boundaries and earlier buildings.
- A historical documentary; the results have been summarised in Section 2, with the full report presented in Appendix 2.
- An aerial photographic survey was commissioned and the archives held at Suffolk County Council HER, the National Monuments Record Office at Swindon, and the Cambridge University Collection of Aerial Photographs were examined. The results are summarised in the main report, Section 2, with the full details presented in Appendix 3.
- A site walkover was conducted on the 30/11/2009, during which notes and digital photographs were taken.

## Legislative frameworks

PPG 16 (November 1990) provides guidance for planning authorities, developers and others in the investigation of archaeological remains. This guidance advises developers to discuss their plans, preferably at a pre planning stage, with the County Archaeological Planning Officer for any possible archaeological constraints on their development proposal. The planning guidance sets out to protect nationally and locally important monuments and their settings. There will be a presumption in favour of preservation *in situ* of important remains. In certain circumstances field evaluation will be carried out to enable an informed decision to be made. On sites where there is no overriding case for preservation *in situ* provision will be made for their recording and excavation prior to development.

The Ancient Monuments and Archaeological Areas Act of 1979 statutorily protects Scheduled Ancient Monuments (SAMs) and their settings as nationally important sites. There are no SAMs within 1 km of this PDA.

Listed buildings are protected under the Listed Buildings and Conservation Areas Act of 1990. This ensures that listed buildings are given statutory protection against unauthorised demolition, alteration and extension. Buildings are listed because they are of special architectural importance, due to their architectural design, decoration

and craftsmanship; also because they are of historical interest. This includes buildings that illustrate important aspects of the nation's social, economic, cultural or military history or have a close association with nationally important persons or events. There are no listed buildings within the PDA although seventeen listed structures are present within the study area (Fig. 12).

A Site of Special Scientific Interest (SSSI) is an area that has been notified as being of special interest under the Wildlife and Countryside Act of 1981, due to its flora, fauna or geological or geomorphological features. There are no SSSI's within the study area although there is one just to the east of the Study Area at Bobbitts Hole (TM 1492 4141 - a geological site that is the type locality for the Ipswichian (Last) Interglacial, a nationally important Pleistocene reference site).

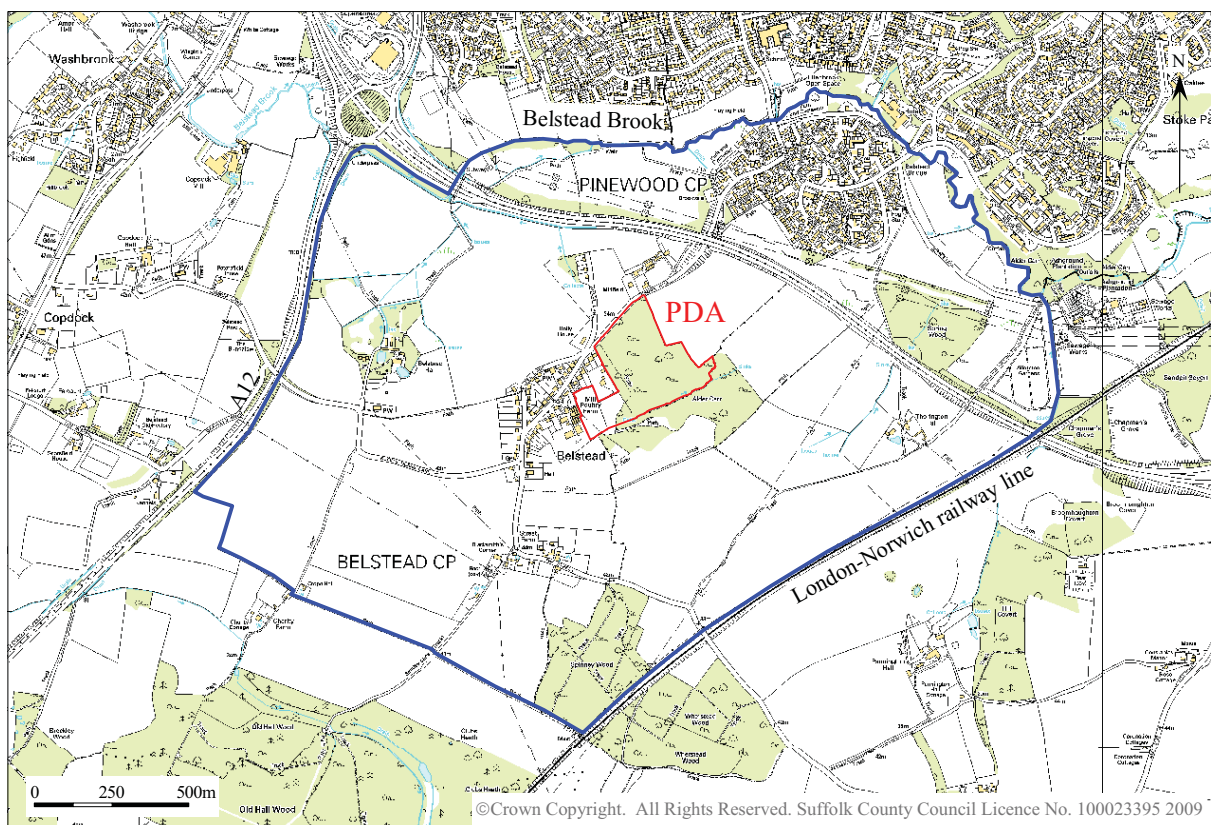


Figure 2. Extent of Study Area (outlined in blue)

## 2. Results

### Suffolk HER search

The HER only represents the archaeological material that has been reported, this is the 'known' resource. It is not therefore, a complete reflection of the whole archaeological resource of this area because other sites may remain undiscovered, this is considered as the 'potential' resource.

### All known archaeological sites within the PDA

There are no known sites recorded on the County HER within the PDA

### All known archaeological sites within the Study Area

A total of twenty-five sites are recorded within the surrounding Study Area. These are summarised below and their locations plotted in Figure 3.

<u>HER ref.</u>	<u>Description</u>
BSD 001	Surface scatter of flint implements comprising a lunette, two scrapers, a burin, a double-ended core, flakes and a light axe of a Mesolithic date.
BSD 002	Collection of Late Iron Age 'Belgic' pottery found in a gravel pit (now disused).
BSD 003	Bronze coin of Constantine I (AD 307-337) found in the garden of No. 4, Holly Lane, Belstead.
BSD 004	Bronze seal matrix of Greyfriars of Ipswich. Pointed oval shape with impression of ecclesiastic surrounded by words "FRATR' MINOR' GYPEWIC". Length 1.25 inches with an engaged shaft and loop.
BSD 005	Undated field system comprising linear ditches and enclosures as seen in aerial photography.
BSD 006	Undated field system comprising linear ditches and enclosures as seen in aerial photography (southward continuation of BSD 005).
BSD 007	Medieval tower/gateway (c. late 13 <sup>th</sup> to early 14 <sup>th</sup> century) incorporated into present house. Interpreted as an entrance in the corner of an enclosed space to the southwest.
BSD 008	Area of linear cropmarks of unknown date. Comprises possible trackways and associated fields. As seen in aerial photography.
BSD 009	Dark brown pottery sherd with red-brown outer surface, burnt flint gritting. Possibly Iron Age.

BSD 010	Belstead parish church, dedicated to St. Mary. Medieval in date.
BSD 011	Site of a bridge over the Belstead Brook as shown on maps of 1783 and later. Construction date unknown.
BSD 012	Cropmarks of possible ring-ditches within former parkland of Belstead Hall as seen in aerial photography. Undated, possibly remnants of post-medieval landscape features.
WHR 002	Bronze Age inhumation with Beaker.
WHR 006	Cropmark of the semi-circular remains of a possible ring-ditch or small circular enclosure (c. 40m diameter). Undated. As seen in aerial photography.
WHR 007	Cropmark of a ring-ditch, c. 35m in diameter. Part of southeast side removed by road. Undated, as seen in aerial photography.
WHR 008	Large early Bronze Age ring-ditch or circular enclosure excavated in 1980. 48m in diameter with thin scatter of pottery (some Beaker) but no burials were identified. Radiocarbon date of 1260 +/-70bp (HAR-4631) obtained from charcoal in upper fill of ditch.
WHR 010	Dense concentration of Roman pottery sherds across top and southeast slope of hill.
WHR 022	Cropmark of a ring-ditch or small enclosure, c. 40m in diameter. Undated, as seen in aerial photography.
WHR 023	Cropmark of a ring-ditch, c. 15m in diameter. Undated, as seen in aerial photography.
WHR 024	Complex rectilinear field system with trackways. Undated, as seen in aerial photography.
WHR 036	Scatter of Roman coins (range - Trajan, AD 98-117, through to Constantinian, AD 335-341). Recovered by metal detectorist.
WHR 046	Spinney/Wherstead Woods - area of designated Ancient Woodland, undated.
WHR 047	Spring Wood - area of designated Ancient Woodland, undated.
WHR 048	Possibly cropmark of a ring-ditch spotted by a motorist on the A14. Said to be '12-14 feet across'. Undated.
WHR 068	Small scatter of seven Bronze Age flint flakes.

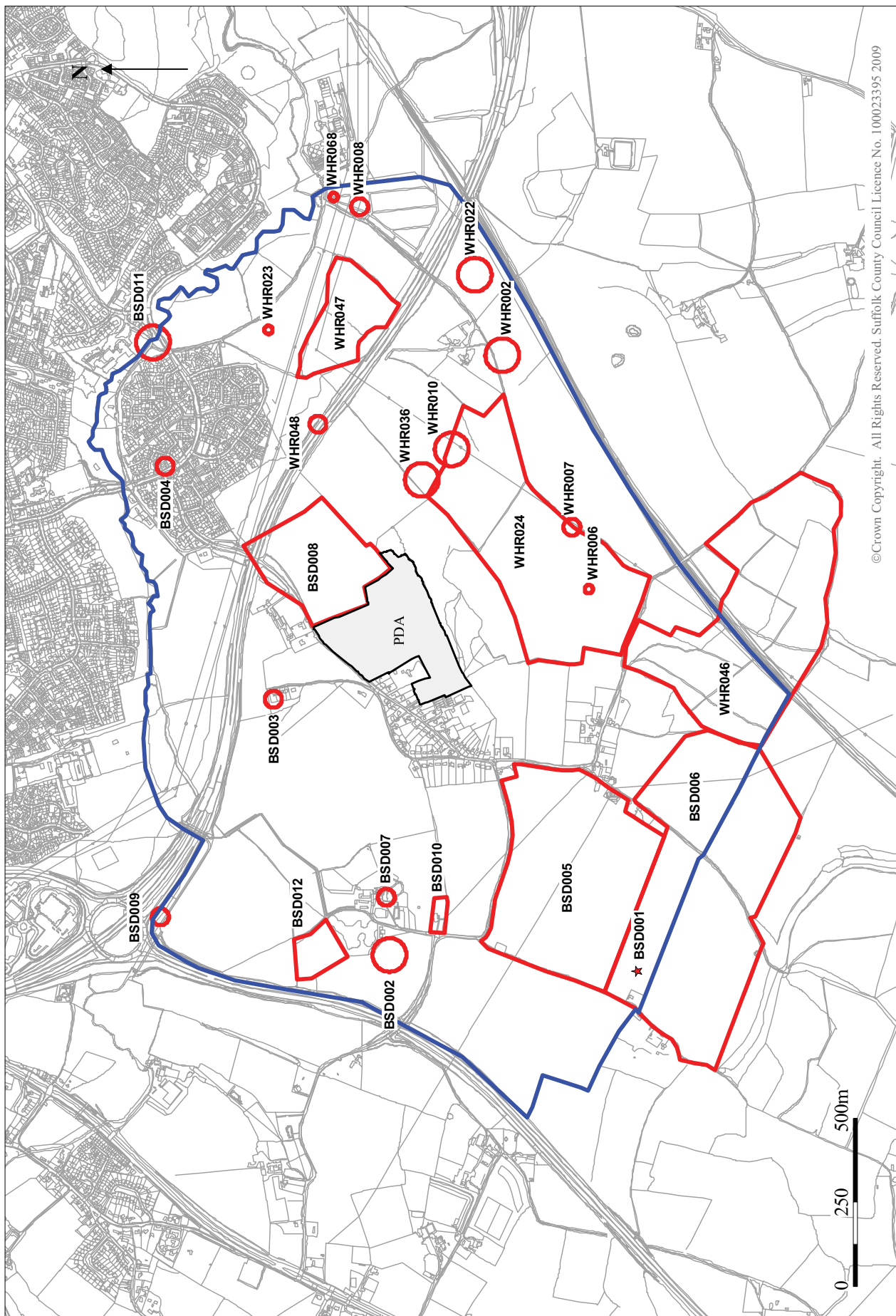


Figure 3. HER entries within the Study Area

## Listed buildings

No Listed Buildings exist within the PDA although a total of seventeen such structures are present within the Study Area (Fig. 4).

The only Listed Building whose setting may be affected by the development is 'The Round House', 10, Chapel Lane, Belstead (NGR: TM 13299 41246).

It comprises an early 19th century, timber framed lodge, rendered, with a slate roof. It is octagonal in plan with two storeys and single storeyed wings to left and right, and added to rear. Central rendered octagonal brick chimney stack. Pedimented porch on timber supports. It is listed Grade II

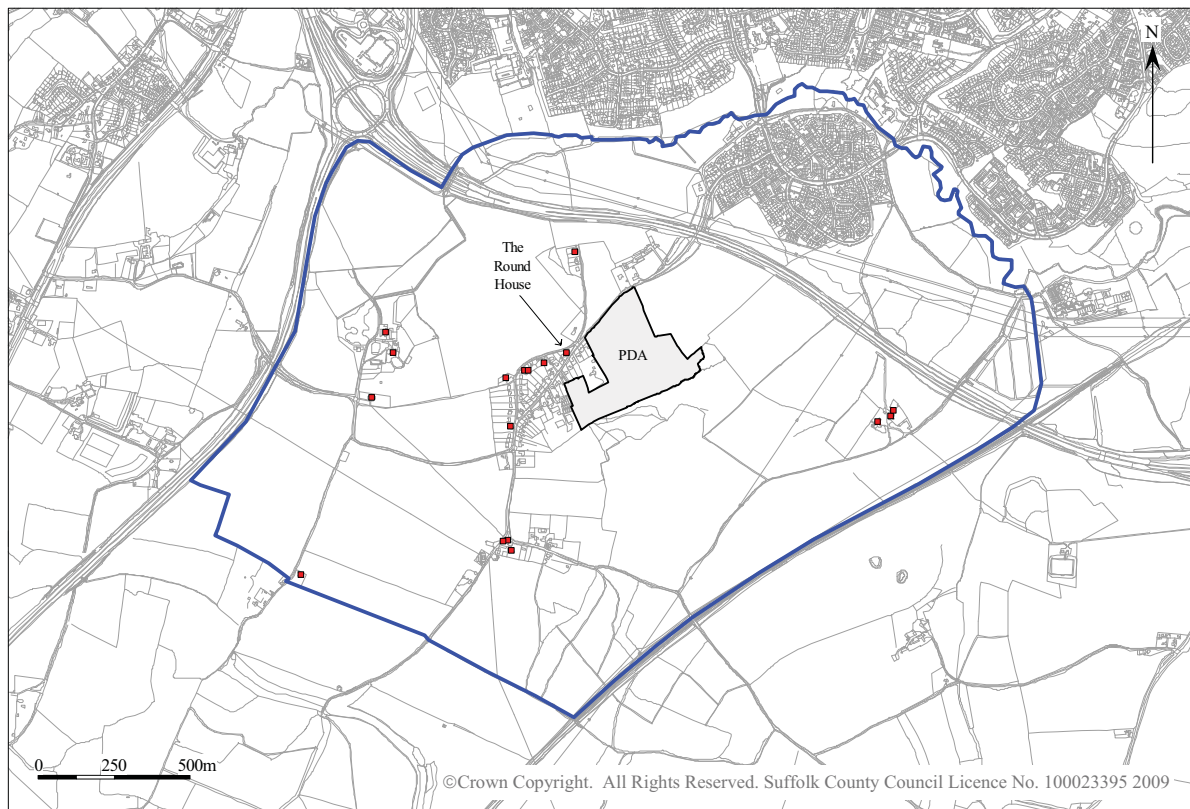


Figure 4. Location of Listed Buildings within the Study Area

## Aerial photographic survey summary

This assessment of aerial photographs examined an area of some 130 hectares (centred TM134412) in order to identify and accurately map archaeological, recent and natural features.

No archaeological features were identified within the Development Area but there are some in the surrounding Study Area. These include:

A system of droves with possible attached fields in land south-east of the Development Area.

One ring ditch (probably marking a Bronze Age burial) and an arc of what may be a second close to the south-east corner of the Study Area.

Two ditches at a right angle in land just outside the Study Area. The ditches may extend into the Study Area.

Four locations of ditches that possibly are of archaeological origin although this is uncertain.

One field shows evidence of broadly-spaced ridge and furrow.

Non-archaeological features include deeper soil that has accumulated in lower ground and some evidence of periglacial cracking.

Land use has been mainly arable in the Study Area but only one field within the Development Area has been in arable use. The Development Area is grass and shrubs on the most recent photographs (2007).

## Historic map search



Figure 5. 1847 tithe map of Belstead (extract – no scale)

The earliest large-scale map showing the PDA is the 1847 tithe map of the parish of Belstead (Fig. 5). It shows the PDA to be open fields situated to the south of the

road through Belstead. No buildings are depicted within the PDA. The later 1<sup>st</sup> Edition Ordnance Survey map shows the area still to be open land but the fields numbered 103, 104 and a large part of 102 in the 1847 survey have been amalgamated into one large enclosure.

The alignment of the smaller strips of land depicted in the west of the PDA on the tithe map suggest possible medieval enclosures associated with individual properties fronting onto the road but this is not conclusive.

It can be seen that part of the southern edge of the PDA is coincidental with a small stream or ditch which forms the boundary between Belstead and Wherstead parishes.

## **Documentary study summary**

The earliest references to the area are in the Domesday survey in which the land is in the possession of the Countess of Albermarle. It is later described as copyhold land held by the manors of Goddlesford Abbey Canonry and Little Bestead. After the dissolution the Canonry land holding was granted to Sir John Raynesfield in 1540 and sold in 1548 to Sir William Windsor. Lord Windsor's family held the land until the end of the 16th century.

Throughout the 17th and 18th centuries the land was sold on many occasions and occupied by various tenants. At the time of the 1847 survey the major part of the land was owned by Fredrick William Campbell and occupied by William Waspe. Part of the PDA was owned by Sir Robert Harland and occupied by Thomas Harland of Belstead Hall whilst the remainder was owned by a James Josselyn and occupied by William Brown.

A large part of the PDA was offered for sale in 1918 during the disposal of Stoke Park although it was never actually part of the Stoke Park estate. On the sales document it is described as being copyhold land of the Manors of Goddlesford Abbey Canonry and Little Belstead and was sold subject to the customs thereof.

The site is invariably described as open fields and meadows with the strip adjacent the small stream as described fen in manorial court records. The area offered as part of the Stoke Park sale is described as 'valuable arable land' in the 1918 catalogue but a 1930s survey of land use depicts the PDA as 'meadowland and permanent grass'.

The parish has, until recently, been thinly populated with just seventeen names listed under 'Villata De Bestede Parva' in 1327. The 1851 census records a population of just 308 inhabitants in the parish of Belstead.

## **Site walkover**

The site was visited on the 30th November 2009 for a brief walkover. It was noted that the site comprised open land and deciduous woodland with some evergreens. The open land was grassed with occasional areas of brambles and self seeded young trees. The area outlined for actual development within the PDA primarily consisted of what appeared to be older, more mature woodland.

The topography of the majority of the northern half of the PDA was relatively level although towards the southern boundary it sloped down, steeply in places, to form the northern side of a small valley running east to west.

## **3. Assessment of impacts and effects**

### **The archaeological potential of the PDA**

The PDA is in a rural location and has been open farmland, which from documentary evidence and the aerial photographic survey, has been primarily pasture with some woodland although there is evidence for some arable farming within the Study Area.

There is no documentary evidence for any structures or settlement sites that may have stood within the PDA although there is the potential for medieval small holdings or individual dwellings to have been present in the area fronting onto the road to Belstead village.

There is potential for earlier sites to be present within the PDA as indicated by sites and finds dating from the Mesolithic, Bronze Age, Iron Age and Roman periods which have been recorded within the Study Area in the County HER. Areas of undated field systems identified from cropmarks are also present in the fields to the northeast, south and southwest and a possible ring-ditch lies close to the southeast corner of the PDA.

### **Potential of preserved archaeological remains within the PDA**

Apart from one arable field within the PDA, the majority of the area appears to have been unploughed pasture and consequently the potential for survival of early remains is high although there is a potential for localised damage from roots in the immediate vicinity of large shrubs or trees

### **Assessment of the impact of the development on the archaeological resource**

The excavation of footings, the creation of access roads and the installation of buried services will have a severe negative impact upon the potential archaeological resource as there is the potential to destroy or cause serious damage to any buried archaeological features or deposits that may survive within the area outlined for development.

## **4. Mitigation measures**

The type of archaeological mitigation will ultimately depend upon the exact nature of the development and construction methods used.

Due to the archaeological potential of the PDA, any development that involves ground disturbance would need to have a programme of archaeological works specified by SCCAS/CT.

In the first instance trial trenching of the PDA would be required to identify and assess the character, density and depth of the archaeological deposits present.

The results of the evaluation can then be used to inform the decisions of the Council Planning Archaeologist to determine the need and scope for the next stage of archaeological works which could include full-scale excavation.

## **Archaeological evaluation**

Applicants for planning consent are reminded that national guidance recommends that potential archaeological sites are evaluated (fieldwalking and/or geophysical survey and/or trenching) prior to the determination of any application and that refusal of consent is an option to ensure that nationally important sites are preserved *in situ* (PPG16 paragraphs 8, 27 and 28).

Purchasers of land should be aware that, until an evaluation is undertaken, it is usually impossible to define the extent of archaeological work that may be required on a site and equally difficult to calculate the likely cost and time implications. Bearing this in mind developers are strongly advised to undertake archaeological evaluations at the earliest opportunity to clarify the likely archaeological work required and its cost.

## **5. Conclusions / Recommendations**

Through an examination of the Suffolk HER, a documentary, map and aerial photography study and a site walkover, this DBA has set the PDA within its immediate archaeological landscape.

The potential for Roman and prehistoric remains to be preserved within the PDA is thought to be high, due to the location of sites recorded on the HER within the Study Area.

The potential for encountering Saxon deposits is low but cannot be entirely ruled out.

Despite the lack of documentary evidence, there is the potential for medieval small holdings or individual dwellings to have been present in the area fronting onto the road to Belstead village.

The development will have a severe negative impact upon the archaeological resource within the PDA. Serious damage and potentially total destruction could occur due to building footings, service trenches, drains and terracing / earth moving.

It is recommended that trial trenching of the area outlined for construction be carried out at the earliest possible opportunity, preferably after any above ground demolition has taken place. The normally recommended density of 5% by area should be sufficient to adequately characterise the nature of the deposits or features that may be present.

It is proposed to create a wild life zone in the remainder of the PDA although what this actually entails is at present unknown. If the work entails significant ground disturbance (i.e. ditch digging, tree planting, grubbing out of large tree stumps, etc.) an archaeological mitigation strategy may be required.

Whilst it is recognised that final mitigation will be strongly dependant on final construction design it should be pointed out that the site has potential, and that the benefits of basic characterisation of the deposits at an early stage will likely far outweigh a more targeted but significantly delayed evaluation exercise carried in response to detailed design proposals.

## **6. List of contributors and Acknowledgements**

This project was funded and commissioned by Trevor Sparkes Consulting Ltd..

The desk based assessment was carried out by M. Sommers, of Suffolk County Council Archaeological Service (SCCAS), the documentary study by Anthony M. Breen, a freelance local history researcher and the aerial photographic survey by Roger Palmer of Air Photo Services.

The project was managed by Stuart Boulter, Contracts Manager, of SCCAS and advice was given by Jess Tipper, SCCAS Conservation Team.

### **Disclaimer**

Any opinions expressed in this report about the need for further archaeological work are those of the Field Projects Team alone. Ultimately the need for further work will be determined by the Local Planning Authority and its Archaeological Advisors when a planning application is registered. Suffolk County Council's archaeological contracting services cannot accept responsibility for inconvenience caused to the clients should the Planning Authority take a different view to that expressed in the report.



# Appendix 1

## Brief and Specification for Desk-Based Assessment

### LAND SOUTH OF GROVE HILL, BELSTEAD, SUFFOLK (B/09/00901/OUT)

#### 1. Background

- 1.1 A planning consent (application B/09/00901/OUT) has been submitted to Babergh District Council for the erection of nine dwellings on Land south of, Grove Hill, Belstead, Suffolk (TL 134 412). **(Please contact the developer for an accurate plan of the development).**
- 1.2 The Planning Authority has been advised that, in order to establish the archaeological implications of this application, the applicant should be required to provide an archaeological impact assessment of the proposed site prior to consideration of the application, as suggested in DoE Planning Policy Guidance 16 (November 1990), paragraph 21.
- 1.3 The proposed application area measures 2.28 ha. in area on the south side of and overlooking the valley of Belstead Brook at c. 35 - 40.00m AOD and gently sloping down eastwards. The underlying glaciofluvial drift geology comprises glaciofluvial drift (deep loam).
- 1.4 This application lies in an area of archaeological importance recorded in the County Historic Environment Record. Archaeological remains are recorded as cropmarks by aerial reconnaissance immediately to the north-east (HER no. BSD 008). The site has good potential for the discovery of important unknown archaeological sites and features in view of its proximity to known remains and also given the landscape setting overlooking the valley of Belstead Brook, a tributary of the River Gipping. This location is topographically favourable for early occupation. Moreover, the location of this large development has not been subject to systematic archaeological survey. The proposed works would cause significant ground disturbance with the potential to damage any archaeological deposit that exists.
- 1.5 A detailed desk-based assessment of the known and potential archaeology for the application area is required as the first part of a programme of archaeological work. Further information concerning the location, extent, survival and significance of the known archaeological remains on the site, as well as the potential for further archaeological remains to survive, is required. This brief sets out the requirement for an initial stage of work comprising an archaeological desk-based assessment and walk-over survey.
- 1.6 This initial stage of assessment may lead to a further programme of works, likely to consist of a general programme of archaeological evaluation (trial-trenching). **A further archaeological specification will be required for any subsequent stage of work from the desk-based assessment.**

#### 2. Objectives

- 2.1 To collate and assess the existing information regarding archaeological and historical remains within and adjacent to the site shown in the accompanying plan. It is important that a sufficiently large area around the target area is studied in order to give adequate context; in this instance an area with boundaries 1,000m beyond the parcel boundaries will be the minimum appropriate.
- 2.2 To identify any known archaeological sites which are of sufficient potential importance to require an outright constraint on development (i.e. those that will need preservation *in situ*).
- 2.3 To assess the potential for unrecorded archaeological sites within the application area.
- 2.4 To assess the likely impact of past land uses and the potential quality of preservation of below ground deposits, and where possible to model those deposits.

- 2.5 To assess the potential for the use of particular investigative techniques in order to aid the formulation of any mitigation strategy.
- 2.6 An outline specification, which defines certain minimum criteria, is set out below. In accordance with the standards and guidance produced by the Institute of Field Archaeologists this brief should not be considered sufficient to enable the total execution of the project. A Written Scheme of Investigation (WSI) based upon this brief and the accompanying outline specification of minimum requirements, is an essential requirement. This must be submitted by the developers, or their agent, to the Conservation Team of the Archaeological Service of Suffolk County Council (Shire Hall, Bury St Edmunds IP33 2AR; telephone/fax: 01284 352443) for approval. The work must not commence until this office has approved both the archaeological contractor as suitable to undertake the work, and the WSI as satisfactory. The WSI will provide the basis for measurable standards.

### **3. Specification**

- 3.1 The assessment shall be undertaken by a professional team of field archaeologists. The archaeological contractor is expected to follow the Code of Conduct of the Institute of Field Archaeologists.
- 3.2 Collation and assessment of the County Historic Environment Record to identify known sites and to assess the potential of the application area.
- 3.2 Collation and assessment of all cartographic sources relevant to the site to identify historic landuse, the siting of old boundaries and any earlier buildings. Where possible copies should be included in the report.
- 3.3 Assess the potential for historic documentation that would contribute to the archaeological investigation of the site.
- 3.4 Re-assessment of aerial photographic evidence and, where relevant, a replotting of archaeological and topographic information by a suitably qualified specialist with relevant experience at a scale of 1:2500. It should be possible to obtain residual errors of less than  $\pm 2\text{m}$ . Rectification of extant mapped features such as field boundaries and buildings shall be undertaken in order to give additional indication of accuracy of the transcription.
- 3.5 Examination of available geotechnical information to assess the condition and status of buried deposits and to identify local geological conditions. Relevant geotechnical data should be included as appendices to the report.
- 3.6 Ascertain whether there are other constraints on the site (e.g. SSSI, County Wildlife Site, AONB, etc).
- 3.7 A site visit to determine any constraints to archaeological survival.

### **4. Report Requirements**

- 4.1 The report shall be submitted within a length of time (but not exceeding 1 month) from the end of fieldwork, to be agreed between the developer and archaeological contractor, with a copy supplied to the County Historic Environment Record. A full digital copy of the report will be supplied to Suffolk County Council Archaeological Service Conservation Team (SCCAS/CT).
- 4.2 Assemble, summarise and order the available evidence.
- 4.2 Synthesise the evidence and place it in its local and/or regional context.
- 4.3 The Report must include a discussion and an assessment of the archaeological evidence within the regional context. The conclusions must include a clear statement of the archaeological potential of the site, highlighting any research priorities, and the significance

of that potential in the context of the Regional Research Framework (*East Anglian Archaeology*, Occasional Papers 3 & 8, 1997 and 2000).

- 4.4 Comment on the reliability of the evidence and give an opinion on the necessity and scope for further assessment including field evaluation.
- 4.5 A comprehensive list of all sources consulted (with specific references) should be included.
- 4.6 A copy of the report should be deposited with the County Historic Environment Record within six months.
- 4.7 At the start of work (immediately before fieldwork commences) an OASIS online record <http://ads.ahds.ac.uk/project/oasis/> must be initiated and key fields completed on Details, Location and Creators forms.
- 4.8 All parts of the OASIS online form must be completed for submission to the County Historic Environment Record. This should include an uploaded .pdf version of the entire report (a paper copy should also be included with the archive).
- 4.9 A digital copy of the air photographic evidence should be supplied with the report for inclusion in the County Historic Environment Record; AutoCAD files should be exported and saved into a format that can be imported into MapInfo (for example, as a Drawing Interchange File or .dxf) or already transferred to .TAB files and ArcView.
- 4.10 The IFA *Standard and Guidance for Archaeological Desk-Based Assessments* (1999) should be used for additional guidance in the execution of the project and in drawing up the report.
- 4.11 Publication of the results, at least to a summary level (i.e. round up of archaeology in the annual 'Archaeology in Suffolk' section of the *Proceedings of the Suffolk Institute for Archaeology*), shall be undertaken in the year following the archaeological field work. An allowance shall be made within the costs for full publication in an appropriate journal.
- 4.12 The involvement of SCCAS/CT shall be acknowledged in any report or publication generated by this project.

## **5. Monitoring**

- 5.1 SCCAS/CT will be responsible for monitoring progress and standards throughout the project. This will include the fieldwork, post-excavation and publication stages.
- 5.2 Notification of the start of work shall be given to SCCAS/CT one week in advance of its commencement.
- 5.3 Any variations to the written scheme of investigation shall be agreed with SCCAS/CT prior to them being carried out.

## **References**

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Date: 21 September 2009

Reference: / GroveHill-Belstead2009

**This brief and specification remains valid for six months from the above date. If work is not carried out in full within that time this document will lapse; the authority should be notified and a revised brief and specification may be issued.**

## **Appendix 2**

### **Documentary Study by A.M Breen**

## **Land in Belstead Village: Documentary Report**

### **Introduction**

The research for this report has been carried out at the Suffolk Record Office in Ipswich. The site is within the civil parish of Belstead in Babergh District Council and is separated from other parts of the former civil parish, whose boundaries were redrawn in 1894 (Youngs 1979), that are now in the area of Pinewood. The boundary of the Borough of Ipswich and the neighbouring parishes to the south has rested on the line of the Belstead Brook. The brook is first mentioned, though not by name, in the 10th century charter describing the boundaries of St Mary Stoke and then in subsequent perambulations of the borough's boundaries from 1351 onwards (Fairclough 2003). The brook was formerly the boundary between Ipswich and Wherstead but not Ipswich and Belstead or more precisely Little Belstead, as it was known in medieval records. Of immediate relevance, the southeastern boundary of this site rests on a small stream or ditch dividing the site from the area of woodland, named as 'Alder Carr' on the Ordnance Survey maps and situated in the parish of Wherstead. The western boundaries of the parish of Belstead, though set from the thirteenth century onwards, mask the earlier division between Little Belstead and 'Great Belstead', now in the neighbouring parish of Washbrook. These parishes were in Samford Hundred, a former division of the county. Washbrook, in common with other parishes situated outside the boundaries of the borough of Ipswich, such as Copdock and Sproughton, they are not mentioned in the Domesday survey. Instead Belstead was a single geographic area with the lands subdivided under five manors. The main area of Great Belstead was part of a manor later known as 'Amer or Hamer or Amor Hall' and included the site of the former church of Felchurch, situated close to the present Copdock Interchange. The records for the manor of Amor Hall are now held in the Walsingham (Merton) Collection at the Norfolk Record Office and were examined in part during the research for the 'Copdock Mill Interchange Report' in 1996. This site was part of the manors of Little Belstead and Goddlesford Abbey Canonry (Gusford Hall), the surviving records of these manors are held at the record office in Ipswich.

The history of the site has been traced back to the sixteenth century through the surviving manorial records. The land in the main was formerly copyhold land held of the manors of Goddlesford Abbey Canonry and Little Belstead. This form of tenure was abolished in 1922, though earlier acts from 1865 allowed for the enfranchisement of copyhold land, that is the conversion of the tenure into freehold. This land remained copyhold until at least 1918. Field name evidence has been used to identify earlier owners of the site.

The parish of Belstead or Little Belstead, until the creation of the modern area of Pinewood, has always been thinly populated with just 17 names listed under 'Villata De Belstede Parva' in the published subsidy returns of 1327. These same returns omit any mention of Washbrook and instead there are 17 named landholders listed under 'Belsted Magna' (Hervey 1906). Over five hundred years later in 1851 there were just 308 inhabitants in Belstead and 514 inhabitants in Washbrook (White

1851). Since that time the parish boundaries have been redrawn on a number of occasions.

## Maps

Though the record office in Ipswich holds a full range of earlier editions of the Ordnance Survey maps of this area, these documents are currently not available for research due to building work at the office. To assist in the research for this report, the Suffolk County Council Archaeological Service has provided a copy of the first edition of the 1:2500 map of this site (Fig. 1). The map was published in 1882. The land is situated to the south of the road from St Mary Stoke, Ipswich, to the village of Belstead. The site was then divided into a large field numbered 76 and parts of smaller enclosures to the southwest numbered 79, 80 and 81 on the map. As has been stated in the introduction to this report the site's southeastern boundary rests on the parish boundary between Belstead and Wherstead and this boundary is in the form of a small brook or ditch that drains to the north east. The few houses shown on the map are all outside the area of this site and include Lenton Hall and the site of a windmill. The alignment of the smaller strips at the south west suggest possible medieval enclosures with the houses situated along the road frontage and the land, smaller areas of garden, pasture and arable, to the rear.

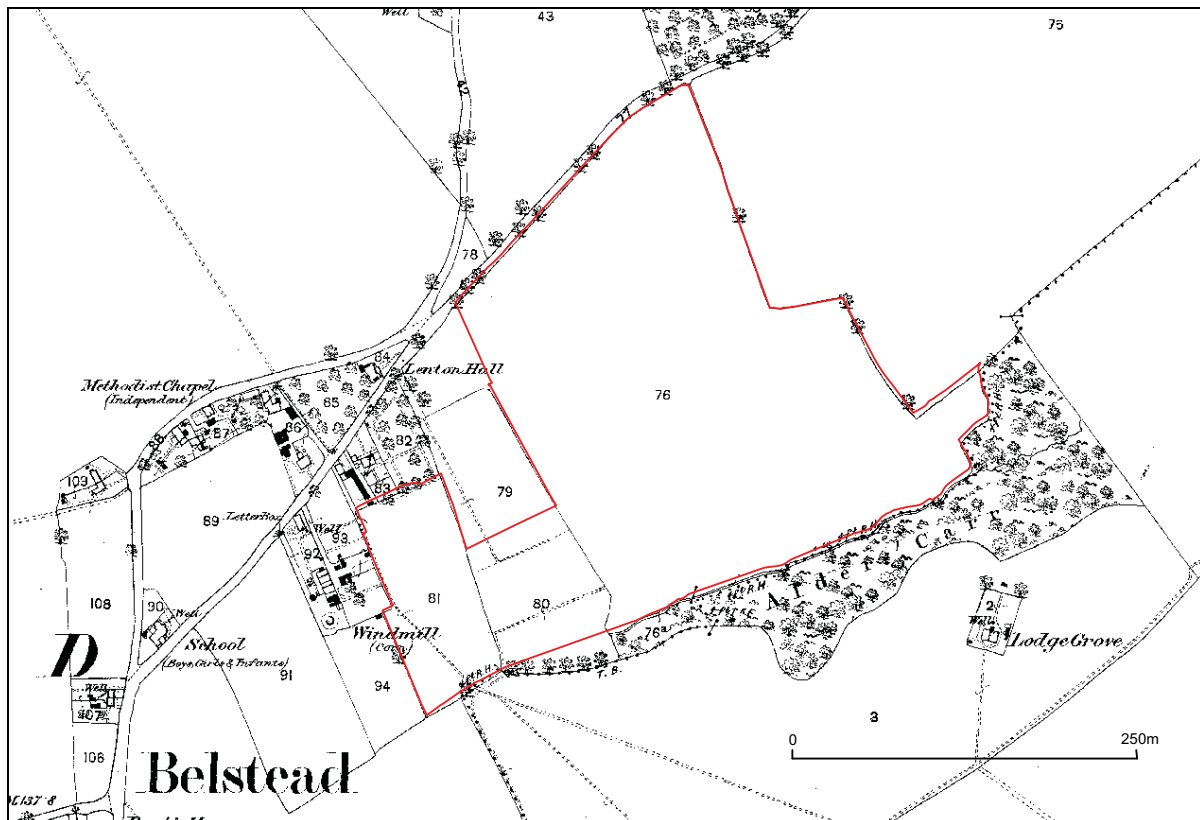


Figure 1. 1<sup>st</sup> Edition Ordnance Survey (extract)

The main area of this site is shown on a map of the Stoke Park Estate prepared as part of the sale of the estate in 1918 (Fig. 2). The land was then offered for sale as lot 20 'coloured in blue and numbered 74 on the plan'. This land was further described as 'a valuable enclosure of arable land occupying an area of 19a 3r 34p situated in the parish of and just outside the village of Belstead surrounded on all sides by the property of C. E. Dashwood of Wherstead Park'. The land was 'let on a yearly 11<sup>th</sup> October tenancy to the executrix of Henry Waspe deceased, with other land comprised of Lots 5, 13, 17, 19 and 21, at a rent apportioned to this lot for the

purpose of sale'. The description then adds a further detail that is extremely useful and helps to identify earlier records, the description states 'This lot is copyhold of the Manors of Goddlesford Abbey Canonry and Little Belstead and is sold subject to the customs thereof and Quit rents of 18s 6d and 5s respectively per annum'. The land tax was given as 19s 6d and the tithe at £6 13s 2d (ref. SC 242/86). In the descriptions of the other lots the lands forming 'Gusford Hall' containing over 195 acres are listed under lot 17, the tenants of the hall were then the 'executrix of Henry Waspe'. As early as 1824 a Jonathon Waspe is stated to have 'resided there and farmed the land' (Copinger 1909). It is important to emphasise that though this land was included in the sale of the estate of Stoke Park in 1918 it was not part of the original estate as shown on earlier maps of 1839, 1805 and 1727 (Breen, Stoke Park report 2007). The owners of the park had acquired the land in an entirely separate conveyance described later in this report.

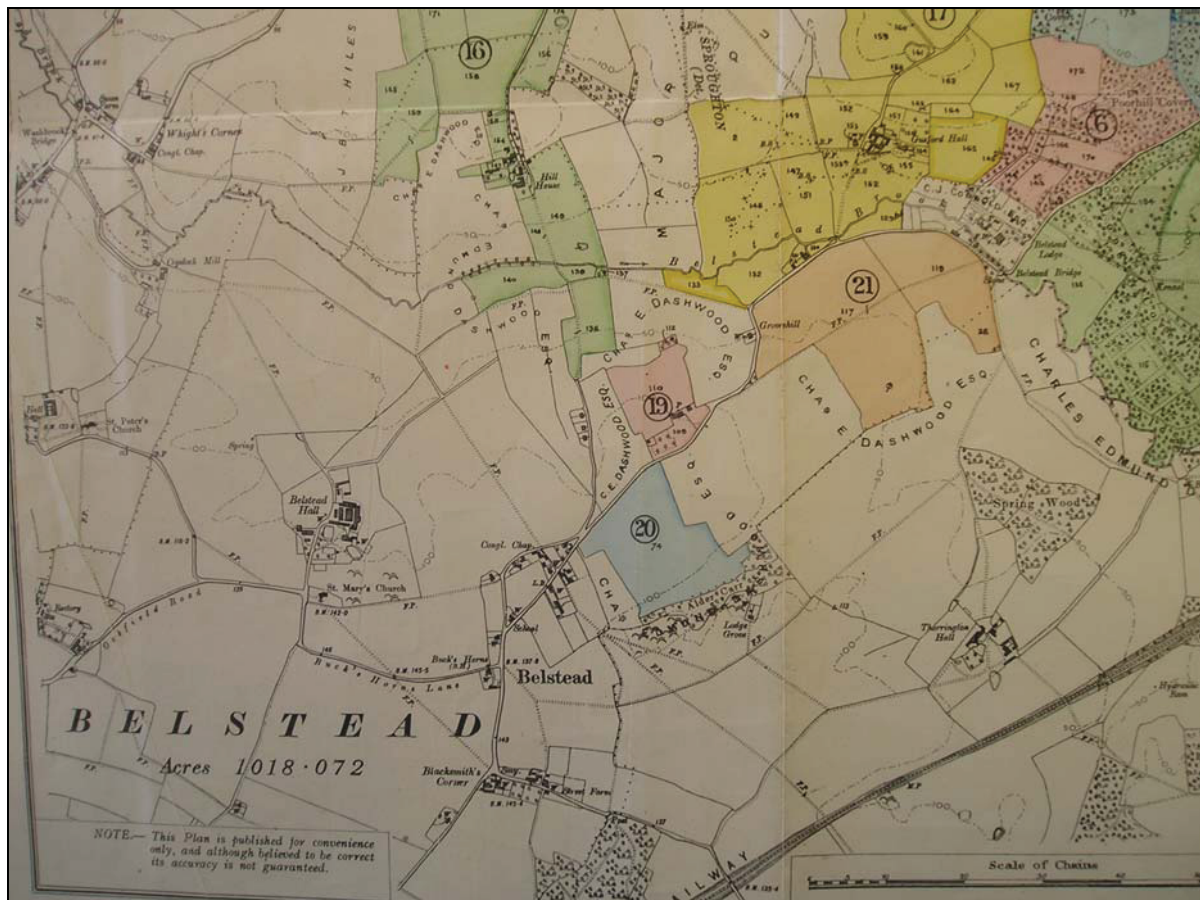


Figure 2. Sale Particulars Stoke Park Estate 1918 (extract of SC 242/86)

This site is shown on the 1847 tithe map of the parish of Belstead (ref. FDA23/A1/1b, Fig. 3). This is the only earlier large-scale map of this area. The lands are described in the printed tithe apportionment dated 14 August 1845 and date stamped by the Tithe Commission 10 December 1847 (ref. FDA23/A1/1a). The land forming Lot 20 in the 1918 sale particulars was then in the occupation of William Waspe as tenant to Frederick William Campbell. William Waspe occupied 85 acres 3 roods and 11 perches in this parish and was Frederick Campbell's principal tenant. Campbell's remaining six tenants only occupied small cottages or houses and their immediate gardens. In 1847 William Waspe held the fields 102 Fen Pasture 2a 3r 7p, 103 Hungry Hill arable 9a 2r 16p and 104 Butt Field arable 7a 0r 25p.



Figure 3. 1847 tithe map of Belstead (extract – no scale)

Of the parish's 1022 acres over half of the land in this parish was then the property of Sir Robert Harland who was also the lord of the manor of Little Belstead. Sir Robert lived at Wherstead Park and the land in Belstead was in the occupation of his tenants. Amongst the tenants Thomas Harwood occupied the largest landholding consisting of some 590 acres 3 roods 18 perches, his fields included, 100 Dungates arable 3a 0r 31p and 101 Fen pasture 0a 33r 33p.

The remaining parts of this site were the property of James Josselyn and in the occupation of his tenant William Brown who held just 3 acres and 27 perches. The land included plot 92 was again described as 'Fen' and 'pasture' and measured at 2 roods 22 perches. The plots 93 and 94 were both part of 'Great Field', with 93 in arable use and measured at 1a 1r 4p and 94, pasture was measured as 3r 5p. William Brown lived at the cottage numbered 99 on the map. James Josselyn held just one other property a cottage numbered 105 and in the occupation of his tenant, William Kettle.

## Manorial Records

Both of the manors of Goddlesford Abbey Canonry and Little Belstead had lands in Belstead. The site of 'Goddlesford now Gusford Hall' was in the neighbouring parish of St Mary Stoke, Ipswich and in the Domesday survey of 1086 it was in the possession of the Countess of Albemarle. In the late thirteenth century the manor

passed to the prior of Canons Leigh in Devon 'where it remained until the Dissolution, when it passed to the Crown and was granted in 1540 ... to Sir John Raynesford'. In 1548 the manor was sold to Sir William Windsor, Lord Windsor whose family held the manor until at least 1586. The manor was returned to the Crown at the end of the sixteenth century and was then 'In 1609 vested in Nicholas Barker'. The subsequent owners of the lordship are not mentioned in the published account (Copinger 1909).

At each sale or transfer of manorial copyhold land the property had to be surrendered back to the manor court before being granted to the new owners. In the manorial court books for this manor at a court held on 12 July 1910 Willoughby Merrick William Campbell, Baron Gwydyr was admitted to

'All that one tenement copyhold containing one acre with the appurtenances called Fenny otherwise Fennings lying in Little Belstead And one field called Dungate Field or five pieces of land lying in the same field as the same were abuttaled in the Court Rolls of the seventh year of the Reign of King Edward the sixth And also one meadow called King's Meadow otherwise Long Meadow lying at the south end of the field called Dungates And also one piece of land called Gosseys containing one acre And also one piece of land called Sterncroft lying and being in Little Belstead aforesaid And all other the copyhold lands and tenements which were formerly the estate of Peter Kingston deceased holden by copy of the court roll of the said manor (which premises the said Frederick William Campbell deceased had and took up to him and his heirs before the Lords of the said manor on the eleventh day of January ...) 1833. The previous owner had been bankrupted and the sale forced to satisfy his debts.

The preamble to this entry states Lord Gwydyr who lived at Stoke Park had produced the will of Frederick William Campbell dated 8 December 1849 in which he left his estate 'my Mansion House called Birkfield Lodge and all my real estate in the County of Suffolk and elsewhere to Sophia my wife for her life at her decease I give and devise the same to my son-in-law Peter Robert Burrell esquire for his life and at his decease I give and devise the same to my grandson Willoughby Burrell'. Willoughby had taken the additional names and is described as 'Willoughby Merrick William Campbell Baron Gwydyr being the same person as the Willoughby Burrell named in the said will'.

He also received other lands including 'one close called Goddlesfords containing by estimation fourteen acres' described in the records of this court. The field names listed in the manorial records do not appear in the tithe apportionment in the description of the property of Frederick William Campbell though the field name 'Dungates' numbered 100 appears in the list of the property of Sir Robert Harland. The property descriptions in these records and other forms of conveyance of this period tended to preserve the descriptions given in earlier sources and were not revised and reconciled to the later landscape until modern maps in the form of tithe maps and Ordnance Survey maps became freely available. In this court book, there are a series of small plans defining the boundaries of the properties based on the Ordnance Survey maps. At a court held on 10 December 1919 a field numbered 110 on the Ordnance Survey map and measured at 8.254 acres is shown on a plan pasted into the court book. This field corresponds to Lot 19 in the 1918 sale particulars, however there is no plan of this site in the court book.

The manorial court met only sporadically and then only to record the conveyance of land or to grant permission to cut timber. There is an earlier reference to the land later owned by Frederick Campbell at the court held on 28 December 1781 when John Laws was admitted as tenant to 'One tenement containing one acre with appurtenances called Fenny otherwise Fennings lying in Little Belstead and one field called Dungate Field ...'. The previous tenant had been Henry Laws who was admitted to the property on 10 June 1750. The property passed to John Laws the son of John Laws at a court held on 15 October 1819. The property was again exchanged at a court held on 21 October 1823.

An earlier tenant of 'Goddlesford' was Robert Pretymann who was admitted to the property on 21 November 1787 and against this entry there is the name 'Burrell' written in pencil. This property passed to Count Linsingen on 13 March 1823. The count was a Hanoverian noble who had settled in Ipswich at the end of the Napoleonic Wars and had built Birkfield Lodge. Frederick Campbell was admitted to this property at another court held on 22 August 1834 (ref. HD 670/5).

The court records for the period 1693-1761 are in another volume containing records of the manors of Bourne Hall and Wherstead Hall. At the court held on 10 June 1750 when Henry Laws was admitted to the property the entry adds that 'all the said copyhold premises now are or late were in the tenure or occupation of Thomas Howard'. The previous tenant was Peter Hingston (not Kingston as in the later records) was admitted in 1707 after the death of Emanuel Sorrell (ref. HD 670/15).

In 1700 the lands forming this manor then 'in the tenure and possession of the Honourable Sir Edward Coke Baronet' were 'surveyed as well by due examination of the old extents, court books, rolls and other evidences, remaining in the hands of the present lord of the said manor as also by the relation and testimony of Thomas Blosses esq and Thomas Fairbrother copyhold tenants of the said manor' (ref. HD 670/6). The manorial court was then held at nut tree 'growing in the hedge' within the demesne lands of the manor. The land that was later the property of Frederick Campbell was then the property of 'Manuell Sorrell' who had entered the property on 13 November 1677 'late Nathaniell Sorrell heretofore Thomas and Robert Parkehurst'. These copyholders were prominent Ipswich merchants in the late sixteenth and earlier seventeenth centuries. The description is more or less that same as in later records with the property being described as Fennys Tenement, Dungatefeild, 'Thrush Meadow alias Long Meadow', Gosseys and 'Standcroft' instead of Sterncroft in the later records.

There is one earlier manorial court book for this manor. At a court held on 26 October 1643 Thomas and Robert Parkhurst were admitted to this property that had formerly been the property of their grandfather George Parkhurst who had in turn entered the property on 6 October 1565 on the surrender of Christopher Reynolds (ref. HD 670/4).

There are just two manorial court books for the manor of Belstead Parva or Little Belstead. 'Willoughby Merrik William Campbell Baron Gwydyr' had been admitted to copyhold land belonging to this manor at a court held on 12 July 1910. The land is described as 'All those four acres of land lying and being in Little Belstead ... divided into four pieces two pieces whereof lie in a field called Dungate Field

whereof one piece contains by estimation two acres more or less and lies between lands sometimes Lord Windsor. As well on the parts of the east and west as south and north the other piece contains half an acre and lying together in a field called Standcroft Field'. The former copyholder was Frederick William Campbell who had entered the property at a court held on 11 January 1833 once again following the bankruptcy of the former tenant.

In this court book there is the entry for the admission of Henry Laws to the same property at a court held on 26 March 1751. The previous tenant was Peter Hingeston of Capel, Suffolk who willed that the land be sold after his death. The property is further described in an abstract of Hingeston's will as a farm in 'Belstead in the occupation of Thomas Howard'. Peter Hingeston was admitted to the property on 28 May 1709 following the death of his uncle 'Manuel Sorrell'. Manuel Sorrell in his turn was admitted to the same property at a court held on 31 October 1678 following the death of Nathaniel Sorrell. The court record does not mention when Nathaniel had entered the property (ref. HD 670/2).

In the earlier court book at a court held on 'Tuesday in Easter Week' in the 36 year of the reign of Elizabeth I (2 April 1594) George Parkhurst entered the same property formerly Christopher Reynolds'. Christopher Reynolds entered the property on following the death of Ursula Reynolds his mother who was the widow of Henry Reynolds at a court held on 16 September 1588 (ref. HD 670/1). These records and those of all earlier courts were written in Latin until 1733.

Henry Reynolds is mentioned in connection with this manor 'In 1566 Henry Reynolds (but now he became entitled does not appear) sold [the manor] to William Plumbe and he to Thomas Blossie, a clothier of Ipswich' (Copinger 1910). The family are likely to held this date from a earlier date as the variant spelling of the surname 'Reignold' appears in the subsidy returns of 1524 (Hervey 1910).

## **Field names**

The main area of this site was formerly part of Dungate Field the ownership traced through the manorial records for the Little Belstead and Goddlesford Abbey Canonry. In the Belstead tithe apportionment of 1847 the only reference to Dungate is the in the description of the Harland property. This suggests that a large field, known as Dungate had been subdivided between the owners, however these owners were prominent Ipswich merchants who did lived in the parish of Belstead. It is likely that the land was tenanted from the late sixteenth century onwards. The name of one tenant farmer Thomas Howard appears in mid eighteenth century records and from at least 1824 onwards the property was in the occupation of the Waspe family who were tenants of Gusford Hall.

The records of both manors mention another field Standcroft or later Sterncroft. A croft was a small enclosure for animals and was normally attached to a tenement. The field-name 'Gosseys' though suggesting the name of an earlier owner does not suggest a place of habitation simply ownership.

The only tenement mentioned in the records is Fenny or Fennings and there was a family 'Fennyng' who lived in Ipswich in the fifteenth century. Their wills were proved at the Archdeaconry of Suffolk Court and included John who died in 1438, Agnes in 1443, Robert in 1458 and another John in 1473. Another possible family member

was Thomas Fennyng who lived in Sproughton and his will was proved at the same court in 1451. All these wills are written in Latin and most do not contain any reference to Belstead instead each of the Ipswich wills shows that the family resided in the parish of St Peter's with Agnes, the widow of John leaving the large sum of 5 marks to the building of the church tower. Just two of these wills contain references to Belstead, amongst the executors of Robert Fennyng in 1458 there is Robert Garson of Belstead but of greater importance John Fennyng in his will of 7 September 1438 left money for masses to be said for his soul in the church of St Mary's Belstead. This type of bequest is common in late medieval wills and does show a very strong link to this parish, it is therefore not unreasonable to suggest that the family had lived there before this date.

The manorial court records also include references to a meadow called Thrush Meadow alias Long Meadow and in the tithe apportionment there are the fields described as 'fen'. It is likely that meadow was situated close to the parish boundary with Wherstead and may have run parallel to Alder Carr in Wherstead.

Apart from the various wills of the Fennyng family there appear to be no earlier records for this site available at Ipswich or elsewhere.

Anthony M Breen October 2009

## **References**

### **Suffolk Record Office: Ipswich**

#### Maps

SC 242/86 Sale Particulars Stoke Park Estate 1918  
FDA23/A1/1b Tithe Map Belstead 1847  
FDA23/A1/1a Tithe Apportionment Belstead 1847

#### Manorial Records

##### Manor of Little Belstead

HD 670/1 Draft Court Book 1577-1654  
HD 670/2 Court Book 1673-1933  
HD 670/17 Rental 1776

##### Manor of Goddlesford Abbatissa Canal alias Canon Leigh in Little Belstead (Gusford Hall)

HD 670/4 Court Book 1633-1671  
HD 670/15 Court Book 1693 – 1761 (with records for manors of Bourne Hall and Wherstead Hall)  
HD 670/5 Court Book 1776-1933  
HD 670/6 Extent 1700  
HD 670/17 Rental 1776

#### Wills Archdeaconry of Suffolk

IC/AA2/1/5 John Fennyng 1438  
IC/AA2/1/23 Agnes Fennyng 1443  
IC/AA2/1/167 Thomas Fennyng (Sproughton) 1457  
IC/AA2/2/3 Robert Fennyng 1458  
IC/AA2/2/280 John Fennyng 1473

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# **LAND SOUTH OF GROVE HILL, BELSTEAD, AREA CENTRED TM134412, SUFFOLK:**

## **AERIAL PHOTOGRAPHIC ASSESSMENT**

**REPORT No: 2009/15**

**NOVEMBER 2009**

Commissioned by:  
Archaeology Service Field Team  
Suffolk County Council  
Environment and Transport  
St Edmund House  
County Hall  
Ipswich IP4 1LZ

**LAND SOUTH OF GROVE HILL, BELSTEAD,  
AREA CENTRED TM134412,  
SUFFOLK:  
AERIAL PHOTOGRAPHIC ASSESSMENT**

**SUMMARY**

This assessment of aerial photographs examined an area of some 130 hectares (centred TM134412) in order to identify and accurately map archaeological, recent and natural features.

No archaeological features were identified within the Development Area but there are some in the surrounding Study Area. These include:

- A system of droves with possible attached fields in land south-east of the Development Area.

- One ring ditch (probably marking a bronze age burial) and an arc of what may be a second close to the south-east corner of the Study Area.

- Two ditches at a right angle in land just outside the Study Area. The ditches may extend into the Study Area.

- Four locations of ditches that possibly are of archaeological origin although this is uncertain.

- One field shows evidence of broadly-spaced ridge and furrow.

Non-archaeological features include deeper soil that has accumulated in lower ground and some evidence of periglacial cracking.

Land use has been mainly arable in the Study Area but only one field within the Development Area has been in arable use. The Development Area is grass and shrubs on the most recent photographs (2007).

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

**LAND SOUTH OF GROVE HILL, BELSTEAD,  
AREA CENTRED TM134412,  
SUFFOLK:  
AERIAL PHOTOGRAPHIC ASSESSMENT**

Rog Palmer MA MIFA

**INTRODUCTION**

This assessment of aerial photographs was commissioned to examine an area of some 130 hectares (centred TM134412) 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.

**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.

Natural faults and deposits can cause similar differences in crop growth and may also appear as colour differences in bare winter soils. On the soils of this assessment area we may expect indications of periglacial cracks – which may be mistaken for archaeological ditches – and of patches of deeper and shallower soil. Both can affect the growth of crops and become visible at the same times as archaeological features. The visible edges and extents of deep soil areas tend to vary from year to year with the amount of ground moisture content. Deeper soil can accumulate in dry valleys and former watercourses and sometimes provides a guide to the earlier local topography before modern agriculture tended to smooth the surface.

## 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.

The collection of military obliques recently acquired by English Heritage comprises some 70,000 prints taken in the 1940s, 50s and 60s. Subjects include anti-invasion defences and other military sites along with some post-war developments, rural and coastal sites.

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. Additional photographs were loaned by Suffolk County Council. Photographs included those resulting from observer-directed flights and routine vertical surveys. Images current on Google Earth and Flashearth at the time of this work (November 2009) were also examined.

Photographs consulted are listed in the Appendix to this report.

### *Base maps*

Digital data from original survey at a scale of 1:2500 or greater were provided by the client.

### *Study Area*

The Study Area was specified by the client and extends at least 200m from the Development Area.

### ***Photo interpretation and mapping***

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

Images in Google Earth were initially viewed and selected from within AirPhoto which automatically geo-references saved files (Scollar and Palmer 2008). These were then imported into AutoCAD, interpreted and overdrawn.

### ***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.

## **COMMENTARY**

### ***Soils***

The Soil Survey of England and Wales (SSEW 1983) shows the area is situated on glaciofluvial drift (soil association 571x: Ludford) which is a well-drained soil. Along the extreme south of the Study Area, the Soil Survey map shows a band of aeolian and glaciofluvial drift (soil association 582e: TENDRING) although this was not apparent on the aerial photographs as a difference in tone or colour.

### ***Archaeological features (Figure 1)***

No archaeological features were identified within the Development Area but there are various features in land surrounding the Area.

In the south-east part of the Study Area is what appears to be a system of droves defined by broad double-ditches (centred TM138409). Ditches were cut perpendicular to the droves and may indicate contemporary field boundaries. In places these have been mapped as 'possible ditches' because the photographed evidence was weak or uncertain. Close to the south-east corner of the Study Area is a ring ditch (TM13654063) that probably marks a bronze age burial site, and there is an arc of what may be a second ring ditch some 140m to the east at TM13794067.

South of the village of Belstead in an area that includes bands of deeper soil and periglacial cracks are some possible ditches that may be of archaeological origin (TM132408) although this is uncertain from the aerial photographic evidence.

West of these, outside the Study Area and south of Buck's Horns Lane, are two ditches (TM128408) that, if they continue northwards, will extend into the Study Area. The eye suggests these two ditches may be part of a square or rectangular feature but there is no information to substantiate this on the photographs examined.

North-west of the Development Area, in land cut by a pipeline, are three 'islands' in a deeper soil deposit (TM129413, TM131414 and TM132415). Each shows evidence of ditched features although most have been mapped as 'possible' rather than of definite archaeological origin.

East of the Development area is a modern field (TM140413) that showed traces of what may be broadly-spaced ridge and furrow. No other evidence of medieval cultivation was identified on the photographs examined.

#### ***Non-archaeological features (Figure 1)***

Recent features include former field boundaries some of which were extant in the 1940s but others had been removed before the date of the earliest photographs. However, the landscape remained little unchanged until construction of the A14 along the northern edge of the Study Area at a date before 1984.

The pipeline, which is aligned north-south on the west side of Belstead village, was laid in 1986.

The ground surface in the area is undulating and deeper soil has accumulated in the valleys. Some of these are linear and may indicate former water courses although the only definite one is that on the east of the Development Area which occasionally becomes waterlogged. Land in the southern part of the Development Area shelves steeply to the current stream that bounds its south side and this may be fed by seasonal flows as, for example, are suggested by the three channels of deeper soil south of Alder Carr (TM136409).

#### ***Land use (Figure 2)***

Most of the Study Area has been in arable use on all dates of photography. However, the Development Area has seen several changes of use and for most of the time since 1946 (the earliest date of photography) these uses are more likely to mask than to indicate the presence of archaeological features. What this means is that the archaeological content of the Development Area remains unknown after this assessment of aerial photographs.

Within the Development Area land use has been broadly as follows:

**Field A.** Pasture on all dates.

**Field B.** Possibly showing the remains of an orchard in 1946 in an area that may have been used for vegetables in the 1950s after which shrubs and trees were removed and it was pasture although the orchard area remained in rougher condition than the southern part of the field.

**Field C.** Used for what appears to be a small holding, or extensive horticulture in the 1940s and 50s. By 1962 it was showing rows of shrubs or fruit trees and these remained in 1965. In 1969 it was part of one large arable field with Field D but, by 1971, had again been planted with shrubs or trees which remain as a dense cover of canopies in the most recent photograph (5 August 2007) in Google Earth .

**Field D.** This field was in arable use between 1946 and 1969 but has reverted to grass by 1971 since when it has been poorly-tended grass on which self-seeded bushes have been growing since 1984 and which, on the most recent photographs, cover about 50% of the field surface.

Roots from the shrub/tree cover may have caused damage to any archaeological contexts in these areas.

In the south part of all four fields there is a definite break of slope where the ground drops to the small stream that bounds the south edge of the Development Area.

Aerial photographs of the small fields A,B and C are unlikely to show identifiable archaeological evidence even if conditions had been right for crop growth to indicate sub-surface features. Such evidence may have been visible during the arable years of Field D although there was no suggestion of this on the relevant photographs.

## REFERENCES

- Scollar, I., 2002. Making things look vertical, in Bewley, R.H. and Rączkowski, W., (ed). *Aerial archaeology: developing future practice*. NATO Science Series, Vol **337**, 166-172.
- Scollar, I. and Palmer, R., 2008. Using Google Earth Imagery. *AARGnews* **37**, 15-21.
- SSEW, 1983. *Soils of England and Wales: sheet 4: Eastern England (1:250,000)*. Soil Survey of England and Wales, Harpenden.

## APPENDIX

*Aerial photographs examined**Source: Cambridge University Collection of Aerial Photographs (searched 22 October 2009)*

## Vertical photographs

PHOTO_ID	DATE	SUBJECT	SCALE	NGRE	NGRN
RC8FK001	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613508	241219
RC8FK002	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613877	241234
RC8FK003	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614247	241248
RC8FK004	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614617	241263
RC8FK005	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614987	241277
RC8FK020	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	615010	240273
RC8FK021	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614673	240269
RC8FK022	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614336	240266
RC8FK023	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613998	240263
RC8FK024	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613661	240259
RC8FK143	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613632	241930
RC8FK144	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	613945	241928
RC8FK145	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614258	241927
RC8FK146	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614571	241925
RC8FK147	13 Jun 1983	Farm Survey, Bond Hill Farm, Wherstead	5000	614884	241924

*Source: National Monuments Record: Air Photographs (cover search 44201)*

## Specialist collection

Photo reference	Film and frame number	Original number	Date	NGR
TM 1240 / 1	SFU 11548 / CR/26		21 JUL 1975	TM 128407
TM 1340 / 1	CCC 8829 / 6629		12 JUN 1928	TM 132405
TM 1340 / 2	NMR 826 / 242-249		07 JUL 1975	TM 135405
TM 1340 / 3	SFU 11555 / 2		19 JUN 1978	TM 137406
TM 1340 / 4	SFU 11548 / CR/18		21 JUL 1975	TM 138407
TM 1340 / 5	SFU 11548 / CR/19		21 JUL 1975	TM 138407
TM 1340 / 6	SFU 11548 / CR/20		21 JUL 1975	TM 138407
TM 1340 / 8	NMR 3117 / 64-65		08 JUL 1986	TM 137407
TM 1340 / 9	EXC 19111 / 03	CP/97/32	22 JUL 1997	TM 132404
TM 1340 / 10	EXC 19111 / 04	CP/97/32	22 JUL 1997	TM 133407
TM 1341 / 1	SFU 11563 / 10		14 JUL 1977	TM 137415
TM 1341 / 2	EXC 19111 / 05	CP/97/32	22 JUL 1997	TM 134410
TM 1341 / 3	EXC 19111 / 05A	CP/97/32	22 JUL 1997	TM 133410
TM 1341 / 4	EXC 19111 / 07	CP/97/32	22 JUL 1997	TM 138410
TM 1440 / 1	NMR 826 / 240-241		07 JUL 1975	TM 143408

## Military obliques

<i>Library and frame number</i>	<i>Photo reference</i>	<i>Original number</i>	<i>Date</i>	<i>NGR</i>
MSO 31367 / O-12403	TM 1441 / 5	1CU/12000	04 MAY 1943	TM 148418
RAF 30022 / PFFO-0289	TM 1241 / 1	540/60	17 JUL 1948	TM 124419
RAF 30022 / SFFO-0289	TM 1241 / 2	540/60	17 JUL 1948	TM 125419
RAF 30022 / SFFO-0290	TM 1242 / 4	540/60	17 JUL 1948	TM 128420

## Vertical collection

<i>Sortie number</i>	<i>Library number</i>	<i>Camera position</i>	<i>Frame number</i>	<i>Centre NGR</i>	<i>Date</i>	<i>Sortie quality</i>	<i>Scale 1:</i>
RAF/106G/UK/1635	423	RS	4032	TM 143 410	09 JUL 1946	AC	10000
RAF/106G/UK/1635	423	RS	4033	TM 138 410	09 JUL 1946	AC	10000
RAF/106G/UK/1635	423	RS	4034	TM 132 410	09 JUL 1946	AC	10000
RAF/106G/UK/1635	423	RS	4035	TM 127 409	09 JUL 1946	AC	10000
RAF/106G/UK/1707	459	RP	3324	TM 144 414	29 AUG 1946	AC	10250
RAF/106G/UK/1707	459	RP	3325	TM 136 416	29 AUG 1946	AC	10250
RAF/CPE/UK/1937	566	RP	3236	TM 142 407	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RP	3237	TM 136 408	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RP	3238	TM 131 409	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RP	3239	TM 126 410	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RS	4264	TM 147 410	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RS	4265	TM 141 409	18 JAN 1947	A	10000
RAF/CPE/UK/1937	566	RS	4266	TM 136 412	18 JAN 1947	A	10000
RAF/CPE/UK/2287	720	V	5094	TM 149 411	04 SEP 1947	A	4800
RAF/CPE/UK/2287	720	V	5095	TM 137 414	04 SEP 1947	A	4800
RAF/CPE/UK/2287	720	V	5096	TM 140 414	04 SEP 1947	A	4800
RAF/CPE/UK/2287	720	V	5097	TM 142 414	04 SEP 1947	A	4800
RAF/CPE/UK/2287	720	V	5098	TM 143 415	04 SEP 1947	A	4800
RAF/82/1088	1620	F21	83	TM 145 413	17 FEB 1955	A	8500
RAF/82/1088	1620	F21	84	TM 139 413	17 FEB 1955	A	8500
RAF/82/1088	1620	F21	85	TM 133 413	17 FEB 1955	A	8500
RAF/82/1088	1620	F21	86	TM 127 413	17 FEB 1955	A	8500
RAF/58/5506	2112	F21	139	TM 138 409	04 OCT 1962	AC	11000
RAF/58/5506	2112	F21	140	TM 130 409	04 OCT 1962	AC	11000
RAF/58/633	3344	Vp2	5109	TM 123 415	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5110	TM 128 411	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5111	TM 133 406	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5161	TM 145 404	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5162	TM 141 408	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5163	TM 136 413	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5164	TM 132 417	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5167	TM 136 419	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5168	TM 140 414	18 APR 1951	A	7900
RAF/58/633	3344	Vp2	5169	TM 145 410	18 APR 1951	A	7900

RAF/58/699	3399	Vp1	5077	TM 149 408	31 MAY 1951	A	7900
RAF/58/699	3399	Vp1	5078	TM 144 412	31 MAY 1951	A	7900
RAF/58/699	3399	Vp1	5079	TM 140 416	31 MAY 1951	A	7900
RAF/58/699	3399	Vp1	5080	TM 135 421	31 MAY 1951	A	7900
MAL/65094	4164	V	14	TM 127 420	03 NOV 1965	A	12000
MAL/65094	4164	V	15	TM 138 420	03 NOV 1965	A	12000
MAL/65097	4167	V	50	TM 132 399	06 NOV 1965	A	12000
MAL/65097	4167	V	51	TM 142 399	06 NOV 1965	A	12000
MAL/73044	7038	V	171	TM 149 419	22 AUG 1973	A	10000
MAL/73044	7038	V	172	TM 141 424	22 AUG 1973	A	10000
MAL/73046	7040	V	45	TM 146 424	31 AUG 1973	A	10560
MAL/73046	7040	V	46	TM 154 419	31 AUG 1973	A	10560
RAF/106G/LA/22	8310	RS	4070	TM 146 416	06 JUL 1944	A	11000
RAF/106G/LA/22	8310	RS	4071	TM 143 413	06 JUL 1944	A	11000
RAF/106G/LA/23	8311	RP	3056	TM 150 404	06 JUL 1944	A	11000
RAF/106G/LA/23	8311	RP	3057	TM 149 410	06 JUL 1944	A	11000
RAF/106G/LA/23	8311	RP	3058	TM 147 416	06 JUL 1944	A	11000
RAF/HLA/694	8600	RP	3038	TM 126 410	26 MAR 1944	A	10750
RAF/HLA/694	8600	RP	3039	TM 133 410	26 MAR 1944	A	10750
RAF/HLA/694	8600	RP	3040	TM 140 410	26 MAR 1944	A	10750
RAF/HLA/694	8600	RP	3041	TM 146 412	26 MAR 1944	A	10750
OS/80104	12447	V	1	TM 124 406	03 JUN 1980	A	10000
OS/80104	12447	V	2	TM 128 401	03 JUN 1980	A	10000
OS/80104	12447	V	3	TM 133 397	03 JUN 1980	A	10000
OS/84235	12662	V	6877	TM 121 411	14 OCT 1984	A	5200
OS/84235	12662	V	6878	TM 124 414	14 OCT 1984	A	5200
OS/84235	12662	V	6879	TM 126 418	14 OCT 1984	A	5200
OS/84236	12663	V	6826	TM 125 403	14 OCT 1984	A	5000
OS/84236	12663	V	6827	TM 126 407	14 OCT 1984	A	5000
OS/84236	12663	V	6828	TM 126 412	14 OCT 1984	A	5000
OS/84236	12663	V	6829	TM 126 416	14 OCT 1984	A	5000
OS/85226	12773	V	8610	TM 143 403	12 OCT 1985	A	2600
OS/85226	12773	V	8611	TM 143 407	12 OCT 1985	A	2600
OS/85226	12773	V	8612	TM 143 410	12 OCT 1985	A	2600
OS/85226	12773	V	8613	TM 143 414	12 OCT 1985	A	2600
OS/85226	12773	V	8614	TM 143 418	12 OCT 1985	A	2600
OS/85226	12773	V	8636	TM 133 405	12 OCT 1985	A	2600
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OS/85226	12773	V	8638	TM 133 413	12 OCT 1985	A	2600
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OS/86089	12831	V	18	TM 121 406	14 JUN 1986	A	7500

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OS/82199	12984	V	25	TM 149 408	02 SEP 1982	A	10000
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OS/82199	12984	V	27	TM 132 409	02 SEP 1982	A	10000
OS/82199	12984	V	28	TM 123 409	02 SEP 1982	A	10000
OS/88132	13278	V	216	TM 144 397	28 MAY 1988	A	7800
OS/88132	13278	V	217	TM 135 396	28 MAY 1988	A	7800
OS/88132	13278	V	218	TM 127 396	28 MAY 1988	A	7800
OS/89045	13415	V	29	TM 145 420	18 MAR 1989	A	5200
OS/89045	13415	V	30	TM 141 421	18 MAR 1989	A	5200
OS/89045	13415	V	31	TM 137 421	18 MAR 1989	A	5200
OS/89045	13415	V	32	TM 133 421	18 MAR 1989	A	5200
OS/89045	13415	V	33	TM 128 421	18 MAR 1989	A	5200
OS/89045	13415	V	34	TM 124 421	18 MAR 1989	A	5200
OS/91024	13798	V	4	TM 126 406	01 AUG 1991	A	8200
OS/95159	14843	V	20	TM 123 407	19 JUN 1995	A	7700
OS/95159	14843	V	21	TM 130 406	19 JUN 1995	A	7700
OS/95159	14843	V	22	TM 137 406	19 JUN 1995	A	7700
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OS/95159	14843	V	42	TM 130 419	19 JUN 1995	A	7700
OS/95159	14843	V	43	TM 123 419	19 JUN 1995	A	7700
MAL/62531	21185	V	101157	TM 135 398	06 JUN 1962	A	11000
MAL/62531	21185	V	101158	TM 139 407	06 JUN 1962	A	11000
MAL/62531	21185	V	101159	TM 144 416	06 JUN 1962	A	11000
MAL/62514	21216	V	98124	TM 141 401	12 APR 1962	A	6500
MAL/62514	21216	V	98125	TM 143 407	12 APR 1962	A	6500
MAL/62514	21216	V	98126	TM 145 413	12 APR 1962	A	6500
MAL/62514	21216	V	98127	TM 148 419	12 APR 1962	A	6500
MAL/62514	21216	V	98136	TM 137 418	12 APR 1962	A	6500
MAL/62514	21216	V	98137	TM 135 412	12 APR 1962	A	6500
MAL/62514	21216	V	98138	TM 133 406	12 APR 1962	A	6500
MAL/62514	21216	V	98139	TM 130 400	12 APR 1962	A	6500
MAL/55162	21586	V	22972	TM 145 416	01 JUN 1955	A	12000
MAL/55162	21586	V	22973	TM 137 424	01 JUN 1955	A	12000

*Source: Suffolk County Council*

#### Vertical photographs

HSL/UK/71041: 1578-1579	11 April 1971	1:10000
JAS/86014: 095-096	1 May 1986(?)	1:10000
ADAS/697/14-15	30 May 1986	1:10000
Digital crop	late spring 1999	1:10000

***Most informative photographs***

TM1340/2/243-245  
TM1341/3  
RAF/106G/UK/1635: 4033  
OS/80104: 001  
OS/88226: 8613  
OS/86089: 19  
OS/95159: 41  
Suffolk CC: 1999 digital crop  
Google Earth: undated 2000  
Google Earth: 19 February 2003  
Google Earth: undated 2007

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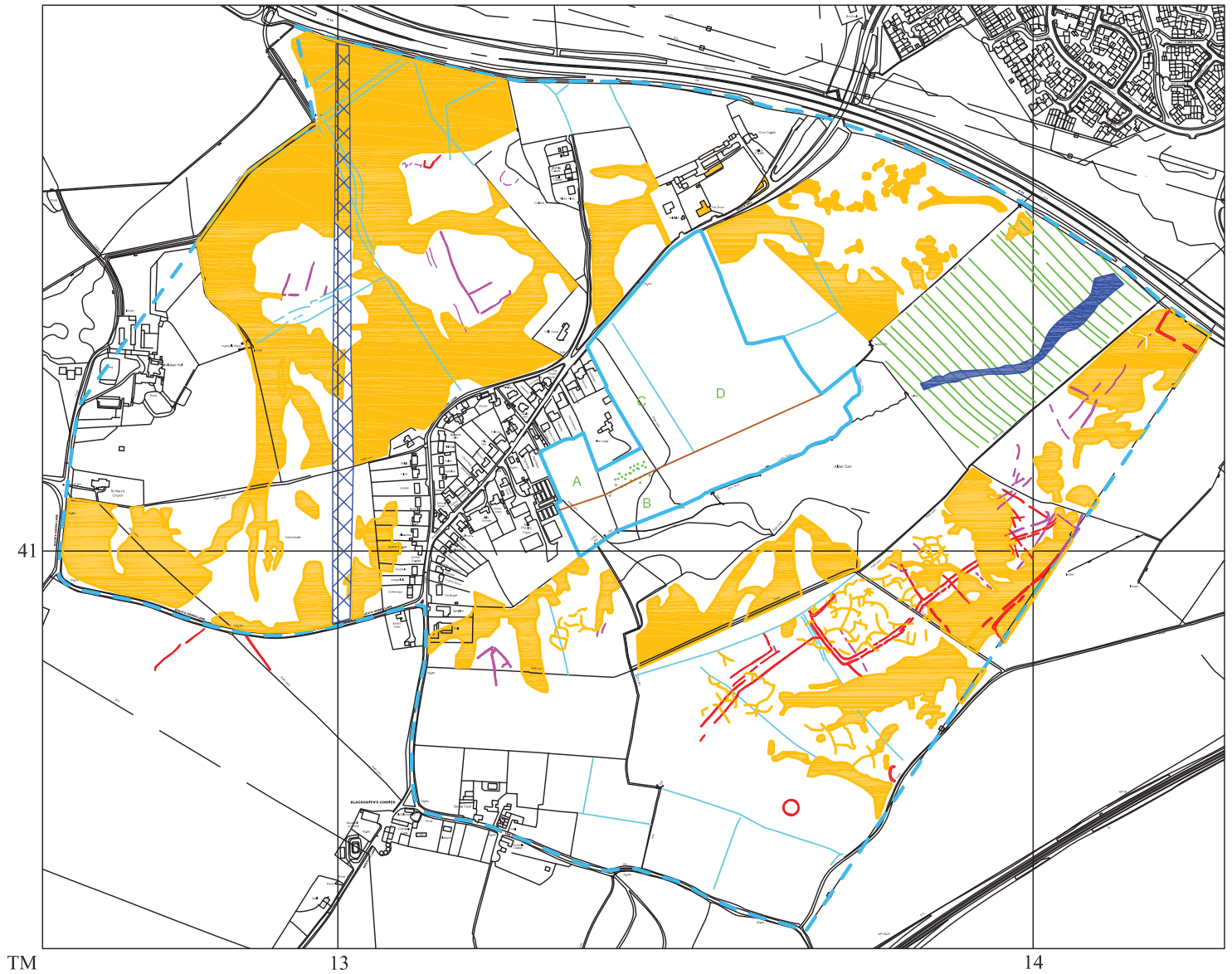
We suggest that if a period of 6 months or more elapses between compilation of this report and field evaluation new searches are made in appropriate photo libraries. Examination of any newly acquired photographs is recommended.

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Land south of Grove Hill, Belstead, Suffolk:  
Figure 1. Features identified on aerial photographs

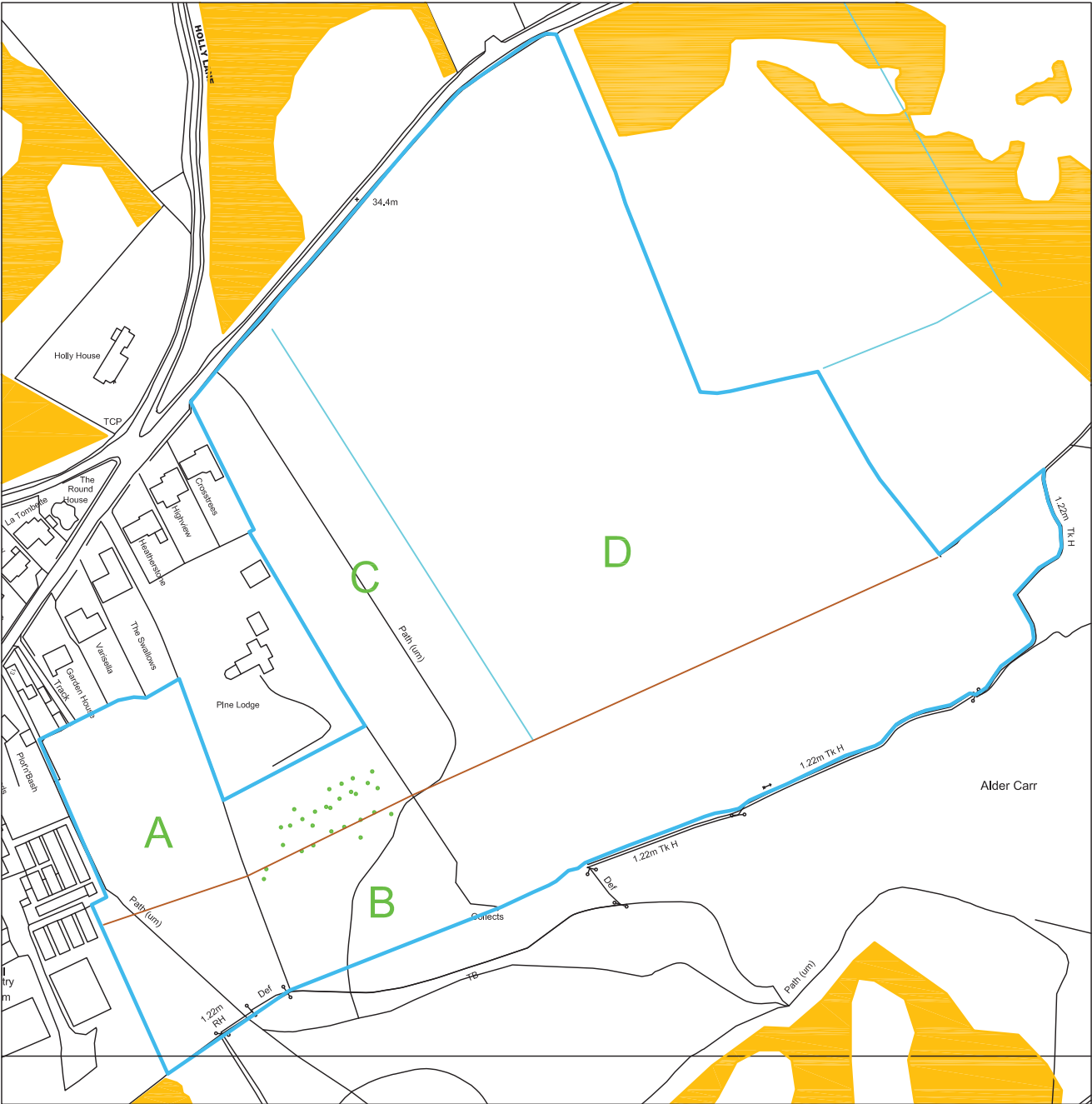


- Development Area
- Study Area
- Archaeological features
  - Ditch or pit
  - Possible ditch
  - Broad ridge and furrow
- Recent features
  - Field boundary
  - Pipeline easement
- Natural features
  - Deeper soil
  - Periglacial crack
  - Former stream

Original photo interpretation and mapping at 1:2500 level  
based on aerial photographs at CUCAP, NMRC, Suffolk  
County Council and Google Earth

Air Photo Services Cambridge  
November 2009  
Drawing: 0915Belstead-crop.dwg

Land south of Grove Hill, Belstead, Suffolk:  
Figure 2. Past land use in the Development  
Area as identified on aerial photographs



- Development Area
- Trees or shrubs 1946
- Break of slope

Field letters refer to report text

Based on aerial photographs from CUCAP,  
NMRC, Suffolk County Council  
and Google Earth

Air Photo Services Cambridge  
November 2009  
Drawing: 0915Belstead-crop.dwg