

**NISSAN TECHNICAL CENTRE,  
CRANFIELD  
BEDFORDSHIRE**

**DESK-BASED HERITAGE ASSESSMENT**

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## **Preface**

*All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.*

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## **Version History**

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## **The Structure of this Document**

After the introductory Section 1, the objectives of the heritage assessment are discussed against the background of national and regional policy and research frameworks in Section 2. Section 3 contains the heritage assessment. This gives a summary of the known information on all historical, archaeological and architectural heritage assets within the PDA and assesses their significance. The impact of the development on known and potential heritage assets and likely mitigation strategies are discussed in Section 4. Section 5 is the bibliography and Section 6 contains the appendices.



## **Key Terms**

Throughout this report the following abbreviations are used:

Albion	Albion Archaeology
BLARS	Bedfordshire and Luton Archives and Record Service
CBC	Central Bedfordshire Council
Client	Nissan Technical Centre Europe
EH	English Heritage
HER	Central Bedfordshire Historic Environment Record, Central Bedfordshire Council
IFA	Institute for Archaeologists
LPA	Local Planning Authority
NMR	National Monuments Record
OS	Ordnance Survey
PDA	Proposed development area



## **Non-technical Summary**

*Nissan Technical Centre Europe Ltd (NTC) are gathering baseline information on land to the south of the Technical Centre building complex at Cranfield, Bedfordshire, in support of a planning application for a car park extension and associated tree planting. As part of this work, Albion Archaeology has been commissioned to prepare this desk-based heritage assessment.*

*Its purpose is to characterise the nature, likely date, potential for survival and significance of known and potential heritage assets within the Proposed Development Area (PDA) and a 500m-radius study area around it. It also assesses the potential impact of the proposed development on any affected heritage assets.*

*One heritage asset has been identified within the study area. This consists of a complex of cropmarks, mainly situated in the field immediately south of the PDA and the Moulsoe-Cranfield Road. The cropmarks were plotted from the available aerial photographs in HER and consist of three possible sub-rectangular enclosures and a number of smaller sub-circular features which may also be archaeological in nature. It is possible that features associated with the cropmarks extend northwards into the PDA.*

*The clay geology of the area makes archaeological sites difficult to identify and the cropmarks are not complex in nature. However, intrusive investigations of two similar cropmark complexes to the east of the site near Cranfield village have revealed substantial settlement evidence dating to the Iron Age and Roman period with further evidence for Saxo-Norman occupation and medieval agricultural activity. In addition the location of the PDA on the edge of the Cranfield plateau overlooking the river valleys could make it a preferred settlement site.*

*Based on the cropmark evidence and comparative analysis with the neighbouring sites, the potential for the existence of buried heritage assets on the PDA is assessed as high.*

*The construction of the Moulsoe-Cranfield road and gas and cement slurry pipelines will already have affected the survival and the setting of the heritage asset. In addition, previous development of the PDA into two sports pitches may have had an additional impact on its survival and quality. However, it is difficult to assess the scale of this impact.*

*The current proposed development could further impact the significance of any heritage assets (in the form of sub-surface archaeological remains). Any direct development impacts could be mitigated by measures to investigate and record the presence/absence, nature and significance of the potential heritage assets. This may be achieved by a programme of archaeological evaluation and mitigation prior to any development taking place.*



## 1. INTRODUCTION

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### 1.1 *Planning Background*

Nissan Technical Centre Europe Ltd (NTC) are gathering baseline information on land to the south of the Technical Centre building complex at Cranfield, Bedfordshire, in support of a planning application for a car park extension (CB/11/00856/FULL). Martin Oake, the Central Bedfordshire Council Archaeologist, requested that a heritage assessment should accompany the planning application<sup>1</sup> due to the proximity of the proposed development area (PDA) to a heritage asset listed in the HER.

Albion Archaeology has been commissioned to prepare the desk-based heritage assessment. Its purpose is to characterise the nature, likely date and potential for survival of known and potential heritage assets within the PDA and to assess their significance. It also assesses the impact of the proposed development on any affected heritage assets.

In March 2010 the government issued a new Planning Policy Statement for the historic environment (DCLG 2010). Known as PPS5, this guidance combined and replaced the previous Planning Policy Guidance notes 15 and 16. This Assessment has been drafted in accordance with the new guidance.

### 1.2 *Site Location and Description*

The NTC Europe is part of the Cranfield Technology Park which lies to the south of Cranfield University and to the west of Cranfield Airfield and the village of Cranfield itself (Figure 1).

The PDA lies to the south of the Technical Centre between an existing border area (incorporating a landscaped park, car parks and perimeter access road) and the Moulsoe-Cranfield main road.

A small rectangular car park already exists in the north-eastern part of the plot, with access to the Technical Centre. The car park lies adjacent to two tennis courts with mesh fencing and floodlights. The rest of the PDA is taken up by two sports pitches which consist of graded topsoil and short grass (Figure 2a). It is bordered by a small area of woodland in the west, the main road to the south, an access track towards the Technical Centre to the north-west and the Technical Centre itself to the north-east. Low earth banks form a bund towards the road.

The proposed development consists of the re-design of the existing car park into larger area with around 130 spaces for cars, covering the south-eastern part of the PDA (Figure 2b). A screen of tree planting is proposed to line the edges of the car park.

The PDA is *c.* 2.5ha in size and is centred on grid reference SP 933370 425508.

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<sup>1</sup> Document reference: 900/HER/16478/MKO



### **1.3 Topography and Geology**

Cranfield lies on raised plateau above the valleys of the Marston Vale and River Ouzel in the west and east. The underlying geology is Oxford Clay Formation Mudstone with Till drift geology consisting of gravelly and loamy deposits.

The PDA lies on level ground at an average height of 100–105m OD. To the south and west the land falls away gently into the river valleys.





## 2. OBJECTIVES OF THE HERITAGE ASSESSMENT

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### 2.1 **National Policy Framework**

PPS5 defines heritage assets as: *“The elements of the historic environment that are worthy of consideration in planning matters.”* These can include: *“buildings, parks and gardens, standing, buried and submerged remains, areas, sites and landscapes, whether designated or not and whether capable of designation”* (Annex 2, Section 3.10).

Designated assets comprise, amongst others, Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Conservation Areas. Undesignated assets are any heritage assets that may formally be identified by the Local Authority to be important for the area, for example through local listing or as part of the plan-making process. These undesignated assets are still material in planning decisions and evidence of local listing and information on these heritage assets is held in the local Historic Environment Record (HER).

According to PPS5 the significance of heritage assets is demonstrated by their value to this and future generations because of their archaeological, architectural, artistic or historic interest and their setting.

National and regional planning policy and research frameworks (see Sections 2.1 to 2.3 ) provide the context within which heritage assets, affected by proposed development, can be characterised and their significance assessed. Policy HE6.1 of PPS5 states that: *“Local planning authorities should require an applicant to provide a description of the significance of the heritage assets affected [by a development proposal] and the contribution of their setting to that significance”*. Policy HE6.2 also requires: *“... an assessment of the impact of the proposal ...”*

In addition, this heritage assessment sets out a mitigation strategy for dealing with the impact of the proposed development on affected heritage assets and/or their setting.

### 2.2 **Local Development Framework**

Central Bedfordshire Council is in the process of preparing the Local Development Framework (LDF). However, a number of policies and designations set out in the relevant Local Plan have been retained until the LDF is in place. At present the relevant local policies are found in the existing and retained policies of the former South Bedfordshire Local Plan Review<sup>2</sup>.

In relation to conservation of the historic environment and heritage assets, the South Bedfordshire Local Plan Review (Policy BE1) will seek the preservation and conservation of scheduled ancient monuments and other sites of archaeological importance and their setting as appropriate by:

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<sup>2</sup> South Bedfordshire Local Plan Review: Adopted January 2004.  
[http://www.centralbedfordshire.gov.uk/\\_sbdc-localplan/DATA/contentsfr.html](http://www.centralbedfordshire.gov.uk/_sbdc-localplan/DATA/contentsfr.html) (accessed 14/04/11).



- requiring that sufficient information is provided by developers, including where necessary the results of evaluation by fieldwork, through an agreed programme of archaeological investigation and recording, to evaluate the importance of the site and the impact of the proposal on the site;
- resisting or modifying development proposals likely to have an unacceptable adverse effect upon sites and their settings by seeking in turn the preservation and conservation of significant archaeological features on the site;
- requiring developers to provide for and fund excavation and recording of archaeological remains prior to development in those cases where the local planning authority accept that in situ preservation is not justified. Such provision will be secured through agreements, planning obligations or planning conditions; and
- the district planning authority will encourage and support steps to achieve the appropriate management and interpretation of sites of archaeological importance.

### 2.3 **Research Frameworks**

English Heritage has produced an extensive library of national guides covering a wide range of topics, and most of these are available for free download from the HELM website<sup>3</sup>.

The regional research framework for Bedfordshire (Oake *et al.* 2007) states that in terms of settlement characterisation and distribution patterns much still remains unknown for the Late Iron Age to Saxon periods. Most work in Bedfordshire has been done on the gravel soils of the river valleys, which are more directly accessible and affected by modern gravel extraction, and on which below ground archaeological assets are much more easily visible.

Increasingly, however, settlements have been investigated on the more heavy clay soils, for example on the clay plateau in northern Bedfordshire. Cranfield represents another area located on clay soils in the west of the county. Its central plateau affords good locations with viewsheds over the surrounding valleys and could, therefore, have been a preferred place for settlement, notwithstanding the heavy clay soils.

Further information from the Cranfield region would add to our understanding of prehistoric to medieval settlement characterisation, pattern and development within more marginal areas of the county, a stated research aim in the framework for Bedfordshire.

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<sup>3</sup> Historic Environment Local Management (HELM) <http://www.helm.org.uk> (accessed 05/09/10).



## **2.4 Method Statement**

This heritage assessment was carried out in accordance with the Institute for Archaeologists' *Standard and Guidance for Archaeological Desk-Based Assessments* (IFA 1999). It reviews known and potential heritage assets for land within a study area, which encompasses the PDA and land within a 500m-radius (Figure 3).

It was agreed with the CBC Archaeologist that the search radius would be cast from the centre of the proposed car park development, rather than the red line indicated on the documents submitted as part of the planning application (which denotes land in the possession of NTC Europe, rather than the PDA, and is indicated in blue on Figure 1).

During the preparation of this document, the sources of information listed below were consulted:

### **2.4.1 Central Bedfordshire Historic Environment Record (HER)**

This is a database of archaeological information, which contains written and pictorial records of known archaeological monuments, previous archaeological investigations, find spots and buildings of historical and archaeological significance.

The HER contains information specific to the county of Central Bedfordshire. It is maintained by Central Bedfordshire Historic Environment Record, Central Bedfordshire Council, Chicksands.

### **2.4.2 Cartographic data and historical records**

Early maps and other illustrations of an area can be a very productive form of research. Often, they indicate dramatic changes in land-use during the post-medieval and modern periods. This can be very helpful in appreciating how the archaeological resource may have been affected by the expansion of settlements and/or industrial sites during, in particular, the 19th and 20th centuries.

The principal source consulted in this case was the Bedfordshire and Luton Archives and Records Service (BLARS), a shared service between Bedford Borough Council and Central Bedfordshire Council.

### **2.4.3 Aerial photographs**

The Central Bedfordshire HER holds a comprehensive collection of aerial photographs (APs) taken of the region throughout the 20th century and more recently. Given the right circumstances (light, crop conditions, moisture content of the soil and presence/absence of snow) aerial photographs can sometimes reveal crop and soil marks indicative of buried archaeological features.

The heritage asset (HER 16478) to the south of the PDA was initially identified through aerial photograph analysis. For the purpose of this heritage assessment, the relevant photographs were scanned at a high resolution and the visible cropmarks plotted (Figure 4).



#### **2.4.4 Walk-over survey**

As part of the heritage assessment, a preliminary walk-over survey of the PDA was undertaken on 15th May 2011 (see section 4.1), with the following aims:

- to examine any areas of archaeological potential identified during research for the assessment, in particular with a view to gauging the possible survival or condition of any remains present;
- to consider the significance of any above-ground structures, historic buildings or historic landscape features present;
- to assess the present ground conditions, with a view to the appropriate deployment of evaluative fieldwork techniques, if required.



### **3. HERITAGE ASSESSMENT**

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#### **3.1 *Heritage Assets and their Significance***

##### **3.1.1 Introduction**

The PDA lies in a landscape that has been dominated by agriculture since medieval times and there is also evidence for extensive woodland within the parish until the enclosure period (Coleman 1986). The villages of Cranfield, Wood End, Wharley End and Bourne End date from the 13th century and were part of a landscape of moated sites, farmsteads and hamlets, largely on poorly drained clay soils.

A search for heritage assets in a 500m-radius around the PDA revealed just one heritage asset — a grouping of cropmarks (HER 16478) immediately to the south of the PDA. On the recommendation of the CBC Archaeologist the discussion below also takes into consideration two intrusive archaeological investigations of similar sets of cropmarks c. 2km the east of the PDA, as their results may have repercussions for the significance of cropmarks HER 16478 (Figure 3).

For the purposes of this document the heritage assets are discussed in broad chronological categories. The two intrusive investigations are discussed within these categories.

##### **3.1.2 Undated**

Cropmark HER 16478, the only HER entry within the 500m-radius study area, lies immediately to the south of the PDA in the field bordering the Moulsoe-Cranfield road. Analysis and plotting of the cropmarks have revealed that they consist of three possible sub-rectangular enclosures and a number of sub-circular marks which may also represent archaeological features (Figure 4). Two of the enclosures are truncated by later field boundaries as well as the Moulsoe-Cranfield Road but one of the enclosures to the east seems complete.

Without intrusive evaluation it is impossible to draw any conclusions as to the precise form, function and date of the cropmarks. In the light of similar discoveries to the east, it is likely that they date to the prehistoric, Roman or early medieval period.

It is likely that the cropmarks, or any remains related to the cropmarks, extend across the road and into the PDA. Therefore, the potential for the existence of buried heritage assets on the PDA is high. If any were revealed, they would probably be of local to regional significance.

##### **3.1.3 Iron Age, Roman, Saxo-Norman (800 BC to AD 1150)**

No remains are listed in the HER within the study area. However, two investigations that lie close to Cranfield village, c. 2km to the east of the PDA, have both revealed substantial remains dating from the Iron Age to the early medieval period (Figure 5). These are discussed below.



### **3.1.3.1 Cranfield Airfield**

An area of cropmarks (HER 8725) always defined a potential archaeological site to the south-west of Cranfield consisting of curvilinear and linear cropmarks denoting possible enclosures and field boundaries. An intrusive evaluation was carried out on land surrounding the cropmarks in advance of proposed housing development (MoLAS 2005). The land lies within the eastern part of Cranfield Airfield, but ceased to be part of the operational airfield in 1990.

The evaluation consisted of a geophysical survey followed by trial trenching. The trial trenches targeted geophysical anomalies and tested blank areas. The geophysical survey undertaken prior to the trial trenching was of limited value. It did accurately reflect the existence and density of medieval and post-medieval agricultural features but was only able to a lesser extent to indicate earlier cut features on the site.

The trial trench evaluation, however, revealed substantial features indicating the existence of a late-middle Iron Age settlement and field systems within the central and eastern parts of the site. There was also evidence for later, post-medieval land use in the form of field drainage ditches and agricultural furrows. The results showed a high potential for well-preserved archaeological features of local to regional significance.

### **3.1.3.2 Cranfield Home Farm**

An open area excavation was undertaken at land at Home Farm (HER 5018) to the south-east of Cranfield on behalf of Persimmon Homes Ltd. An intrusive evaluation of the site was undertaken in 2005 consisting of a geophysical survey followed by targeted trial trenching (Albion 2005). Again, the geophysical survey was of limited use in defining foci of occupation but did assist in identifying several anomalies which proved to be archaeological features.

The trial trench evaluation revealed evidence for Iron Age settlement, agricultural and funerary activity, Roman settlement activity, non-specific Saxo-Norman activity and medieval settlement activity. Following the evaluation, parts of the area were selected for preservation *in situ* while others were subject to open area excavation. This took place between December 2010 and January 2011 and revealed an Iron Age settlement with boundary ditches, a roundhouse and a cremation, and an enclosed Roman farmstead.

The intrusive investigations revealed the survival of archaeological features of considerable depth and quality which are of local to regional significance.

### **3.1.4 Early medieval – Post-medieval (1150 – 1750)**

No heritage assets dating to the medieval period are listed in the HER. An aerial photograph dating from pre-1936 shows prominent ridge and furrow marks on the PDA, suggesting the potential survival of medieval agricultural earthworks until the early 20th century. These are now gone, although sub-surface furrows may remain (Figure 4).



Both investigations to the east of the site, HER 5018 and HER 8725 discussed above, revealed evidence of medieval and post-medieval agriculture and landuse.

The potential for the survival of any medieval or post-medieval heritage assets on the PDA, either relating to agriculture or other assets, is low to none. If any were found they would be of local significance.

### **3.1.5 Modern (1750 onwards)**

Casting a 1km-radius search area around the PDA brings up several heritage assets, all dating to the 20th century. These include the Cranfield Aerodrome and Airfield, constructed in 1936-7, and several WWII pillboxes, installed for its defence. The airfield attracted the establishment of the College of Aeronautics in 1946 which evolved into the present Cranfield University, including a library building designed by Sir Norman Foster and Partners in 1992-3.

The PDA always lay outside the southern boundary of the airfield. The potential for the survival of any modern assets, possibly associated with the airfield, is low to none as any remains would have been removed during the development of the Nissan Technical Centre. If any were found, they would be of local significance.

## **3.2 Setting**

In terms of their setting, the cropmarks of HER 16478 lie in a landscape that has been dominated by agriculture since the medieval period. The creation of field boundaries in the post-medieval period has already impacted on the enclosures and the establishment of the Moulsoe-Cranfield road most likely significantly disturbed the northern part of the cropmarks. In addition, a cement slurry pipeline cuts across the eastern part of the PDA and potentially also across the cropmarks, should they extend that far.

Apart from having been part of an agricultural setting throughout most of its recorded history, the integrity of the current setting of the cropmark complex has already been substantially altered and is not thought to contribute to the significance of the heritage asset.

## **3.3 Cartographic Evidence and Historic Landscape Character**

### **3.3.1 Introduction**

The following section shows the earliest available map data for the area around the PDA. Figures 6 to 10 should be viewed in conjunction with this text.

### **3.3.2 Estate map 1807 (Figure 6)**

The estate map of 1807 shows that the area around the PDA was agricultural land. The map clearly shows the medieval strip field pattern still in existence at that time. The PDA itself seems to have consisted of an open piece of land within the strip fields. A precursor of the Moulsoe-Cranfield road is visible as a footpath, snaking around some of the field boundaries in a zigzag pattern.



### 3.3.3 Enclosure map 1840 (Figure 7)

The 1840 enclosure map shows how many of the small medieval strip fields have been replaced by larger open area fields through the Enclosure Act. The other most significant change is the construction of the Moulsoe-Cranfield road, utilising earlier stretches of footpath and headlands between the strip fields. Before the 20th century this road ran along the northern boundary of the PDA. The remains of it still survive along the north-eastern boundary but it now terminates in a dead end.

The open field which accommodated the PDA on the earlier estate map, is now shown as belonging to 'Thomas Hollis' and has one elongated subdivision. This could be interpreted as an indication of earlier medieval furlongs. However, the possible ridge and furrow earthworks shown on the pre-1936 aerial photograph (Section 3.1.4) run perpendicular to this field boundary, making it more likely to be a boundary drawn during enclosure.

The field to the south of the PDA, marked "J.A. Partridge", is significant as it is the first time that this boundary appears on a map. It no longer survives but is still a very prominent feature within cropmark grouping HER 16478 (compare Figures 4 and 7).

### 3.3.4 First and second edition OS maps 1881-1901

There are no significant changes to field systems and boundaries within the PDA. The open fields established during enclosure have been further amalgamated (Figure 8). A lake has been established on the boundary of what was J.A. Partridge's field.

### 3.3.5 1930s land use map and aerial photograph

No third edition OS (c. 1926) map exists for this part of Bedfordshire but a version of the second edition OS map (1901) was annotated in 1930 in order to show land use of the area (Figure 9). The fact that no third edition map was produced, suggests that no significant changes took place in the first two decades of the 20th century. The 1930s annotations show the PDA to be used as meadow.

A set of aerial photographs, pre-dating the construction of Cranfield Airfield in 1936-7 and available on Google Maps, was analysed for this heritage assessment. The airfield is not yet in existence but the Moulsoe-Cranfield Road with its curious 'kink' has been complemented by a straight southern shortcut (the present line of the Moulsoe-Cranfield road), forming a triangle of roads which frames the PDA. The new road must have been constructed in anticipation of the main runway of the airfield around 1936.

### 3.3.6 1973-4 Ordnance Survey map (Figure 10)

This is the first available OS map that shows the PDA within its current boundaries. What is going to become the main site of the NTC is still outlined by the main runway of Cranfield Airfield, and the boundary of the airfield forms the northern boundary of the PDA today. The old Moulsoe-Cranfield road terminates at the airfield but still seems to serve as an access point to it,





while the road built in c.1936 is now the main road. “Drains” are indicated on the edges of the PDA.

### **3.4 Modern Land Use**

Until the construction of the NTC the site was either under arable cultivation or used as pasture (meadow). After the establishment of the NTC in 1991 the PDA became part of the Centre’s curtilage and the small satellite car park, which is on the site today, was put in place.

An earlier planning application in 2005, led to the construction of two sports pitches on the site (Figure 2). This means that the PDA has probably already undergone levelling, grading of the soil and the installation of drainage in relation to the construction of the pitches.

The actual level of ground disturbance and location of drainage runs is unclear. The generic construction of sports pitches indicates that drainage needs to be installed at regular intervals across a pitch and around its edges; drains are typically at least 450mm deep and 160mm wide.

Earth mounds and a medium-sized hedge form the current boundary of the PDA to the Moulsoe-Cranfield road.

### **3.5 Summary of the Archaeological Potential within the PDA**

The PDA lies in an area for which no extensive information on heritage assets exists within the HER. The only recorded asset, a series of cropmarks HER 16478, lies immediately to the south of the PDA and may extend into the area of the proposed car park. Analysis of the cropmarks from aerial photographs has revealed the potential existence of several sub-rectangular enclosures but no information on their precise form, function or date is available.

It is important in this context to consider the evidence from the Cranfield Airfield and Home Farm investigations. While the sites lie an average 2km to the east of the PDA, they are significant in that their evaluations and subsequent excavations were based on equally scant cropmark evidence. Geophysical survey in both cases also revealed only marginal results, which is most likely due to the underlying clay geology. Clay is notoriously difficult for the detection and mapping of potential archaeological features through aerial photography and geophysical survey.

This was emphasised when subsequent intrusive investigations on both sites revealed substantial archaeological settlement remains, spanning several periods. It is therefore conceivable that the cropmarks near the PDA could mark a similar occupation site — particularly as all three sites lie on the edge of the Cranfield Plateau, overlooking the river valleys, which seems to have been a preferred location for settlement.

Map regression has indicated that the PDA was part of an agricultural landscape since the medieval period and either used for pasture or arable fields, until the early 20th century. It is expected that agricultural cultivation would have led to some horizontal truncation of archaeological features, but



otherwise, the rural setting of the site would have left the remains in good condition.

On the other hand, the installation of the gas and cement slurry pipelines across the north-eastern corner of the PDA would have had a significant impact on any potential heritage assets in this area.

In addition, some development of the site into two sports pitches took place in 2005. It is not possible to assess the level of impact this development would have had on the survival of any potential heritage assets as no information on their construction was available at the time of writing. However, the possibility of some impact on the buried heritage assets and thus their level of survival and significance cannot be excluded.

Despite the previous groundworks, the potential for the survival of any buried heritage assets within the PDA is still assessed as high. If any were found they would be of local to regional significance.

Heritage Asset	Period	Potential of finding asset	Significance
Potential buried remains	Prehistoric (before 43BC)	High	Local - regional
Potential buried remains	Roman (43BC–450AD)	High	Local to regional
Potential buried remains	Anglo-Saxon / Saxo-Norman (450–1066)	Moderate	Local - regional
Potential buried remains	Medieval (1066–1550)	Low	Local
Potential buried remains	Post-medieval (1550–1900)	Low	Local
Potential buried remains	Modern (1900–present)	Low	Local

**Table 1: Potential heritage assets and significance**



## 4. IMPACT ASSESSMENT

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### 4.1 *The Proposed Development*

The proposed development consists of the re-design of the current small car park on the site into a larger parking area with bays for c. 130 cars. The car park is situated in the south-eastern part of the PDA while the northern and western part is earmarked for “tree plantation”.

As part of the heritage assessment, a walk-over survey was undertaken on 15th May 2011. This examined the PDA with a view to gauging the possible survival or condition of any archaeological remains present (Section 3.4). The previous development of the PDA into sports pitches with associated drainage may have already impacted on the buried heritage assets, however its degree of severity, if any, is unclear.

A gas pipeline and cement slurry pipeline run through the north-eastern part of the PDA (Figure 2). The location of other services was not known.

### 4.2 *Direct Impacts on Heritage Assets and Mitigation*

Any groundworks or landscaping associated with the construction works for the car park have the potential to directly impact heritage asset HER 16478. Additionally, the proposed tree planting to the north of the car park bays would have a detrimental effect on any buried archaeology due to the destructive effect of expanding roots and root bowls.

Both elements of the proposed development would affect the significance of any below-ground assets.

Any direct impact of the new development on potential buried archaeological remains could be mitigated by measures to investigate and record the presence/absence, nature and significance of the potential archaeological assets. This may be achieved by a programme of archaeological evaluation and mitigation prior to any development taking place.

The setting of cropmark complex and potential archaeological remains HER 16478 has already been compromised by the construction of the current Moulsoe-Cranfield road in c.1936, effectively cutting off the main cropmark complex from any potential remains on the PDA. The construction of the car park is therefore not thought to significantly affect the setting of heritage asset HER 16478.

As the proposed development consists of a car park, which is level with the ground and situated close to the existing 20th-century development of the NTC and Cranfield Technology Park, it will also not have an impact on the setting of any heritage assets within the visibility horizon around the PDA.

Tree planting is proposed to screen the car park from the road and the relative significance of screening the setting of the PDA against the potential disturbance of root bowls to buried heritage assets needs to be considered.



## 5. BIBLIOGRAPHY

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- Albion Archaeology 2005. *Home Farm, Cranfield, Bedfordshire. Archaeological Field Evaluation*. Report no: 2005-37.
- Coleman, S. 1986. *Cranfield. Bedfordshire Parish Surveys 5*. Conservation Section County Planning Department. (Available in HER.)
- DCLG. 2010. *Planning Policy Statement 5: Planning for the Historic Environment*. London: TSO.
- English Heritage. 2010. *The setting of heritage assets: English Heritage guidance. Consultation draft*.
- MoLAS 2005. *Cranfield Airfield, Cranfield. County of Bedfordshire. An archaeological evaluation report*.
- Oake, M., Luke, M., Dawson, M., Edgeworth, M., Murphy, P. 2007. *Bedfordshire Archaeology. Research and Archaeology: Resource Assessment, Research Agenda and Strategy*. Bedfordshire Archaeology Monograph 9.
- Oake, M. 2007. 'Research Agenda and Strategy.' In: *Bedfordshire Archaeology. Research and Archaeology: Resource Assessment, Research Agenda and Strategy*. Bedfordshire Archaeology Monograph 9, 7-18.

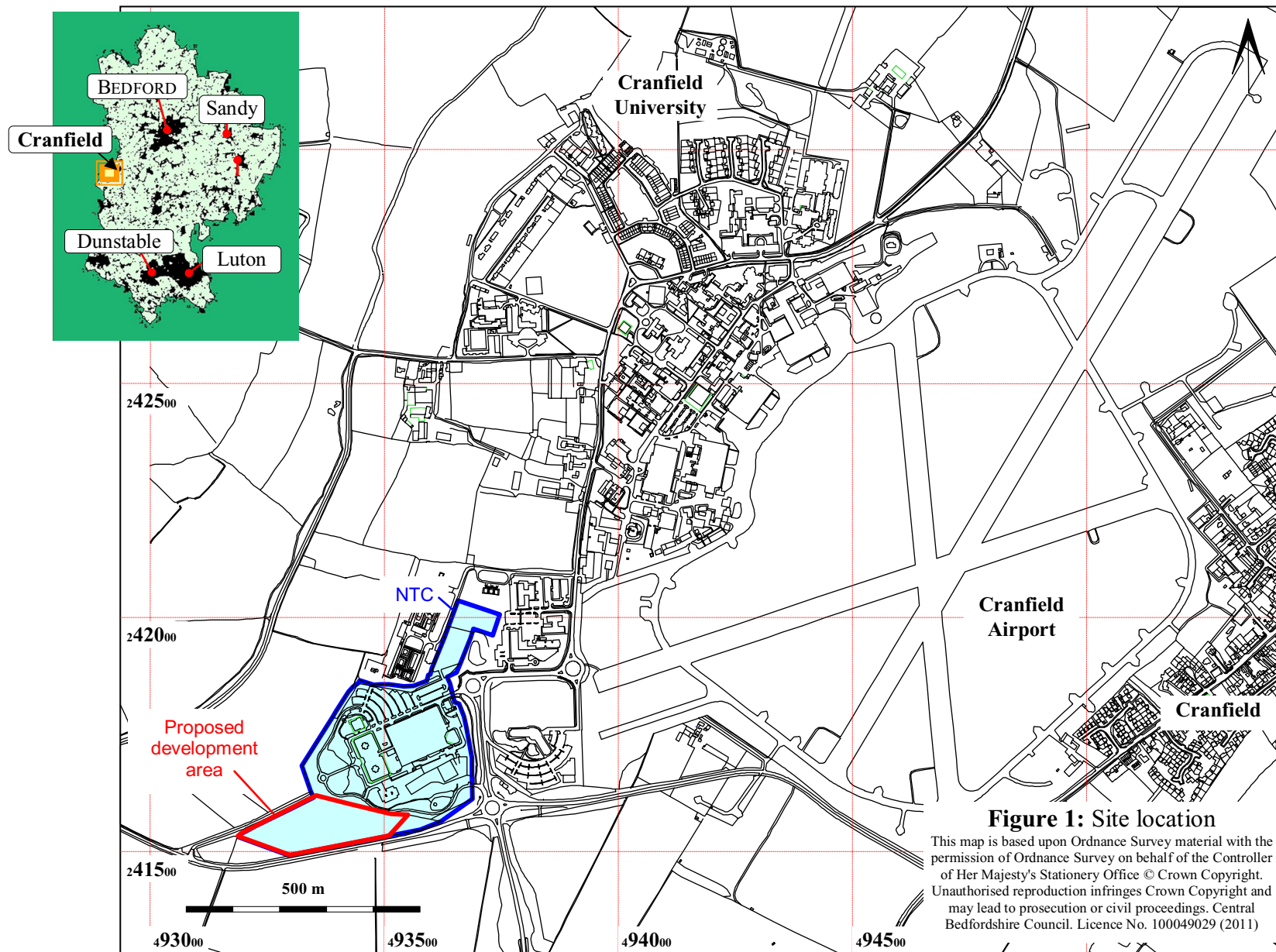


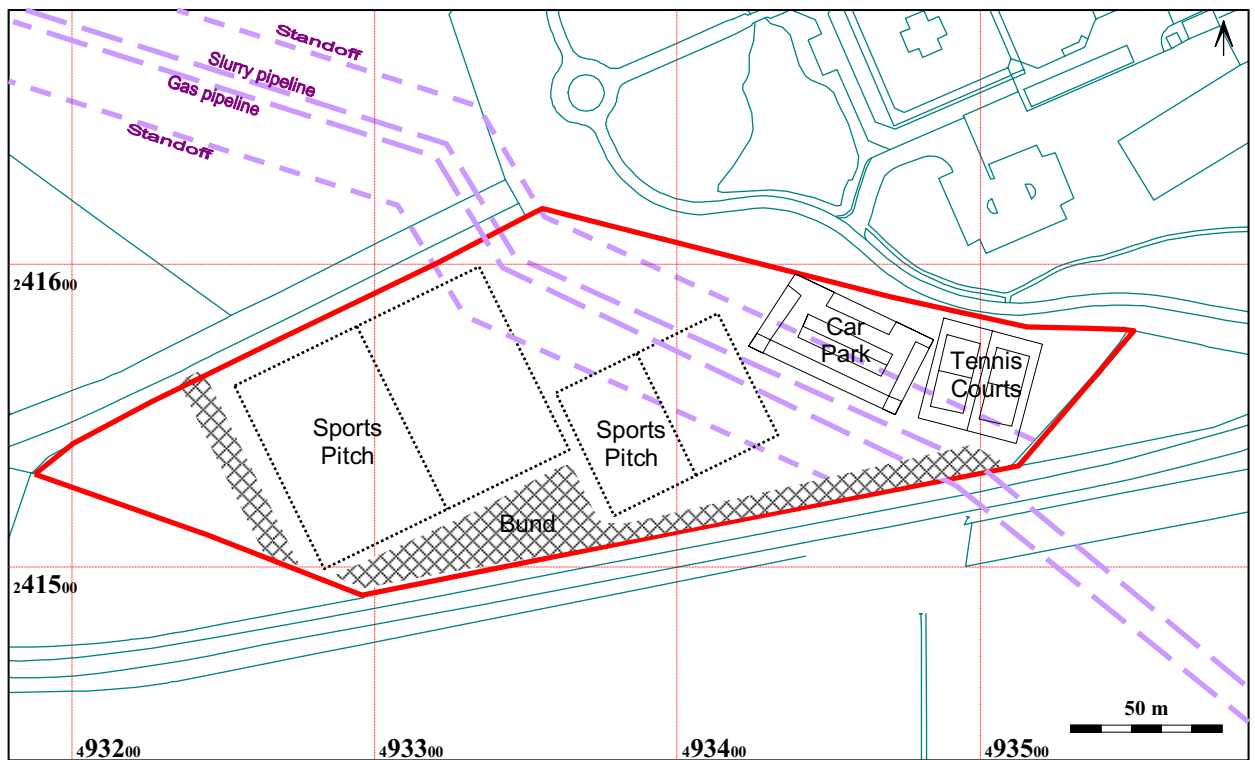
## 6. APPENDICES

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### 6.1 *Documentary Sources*

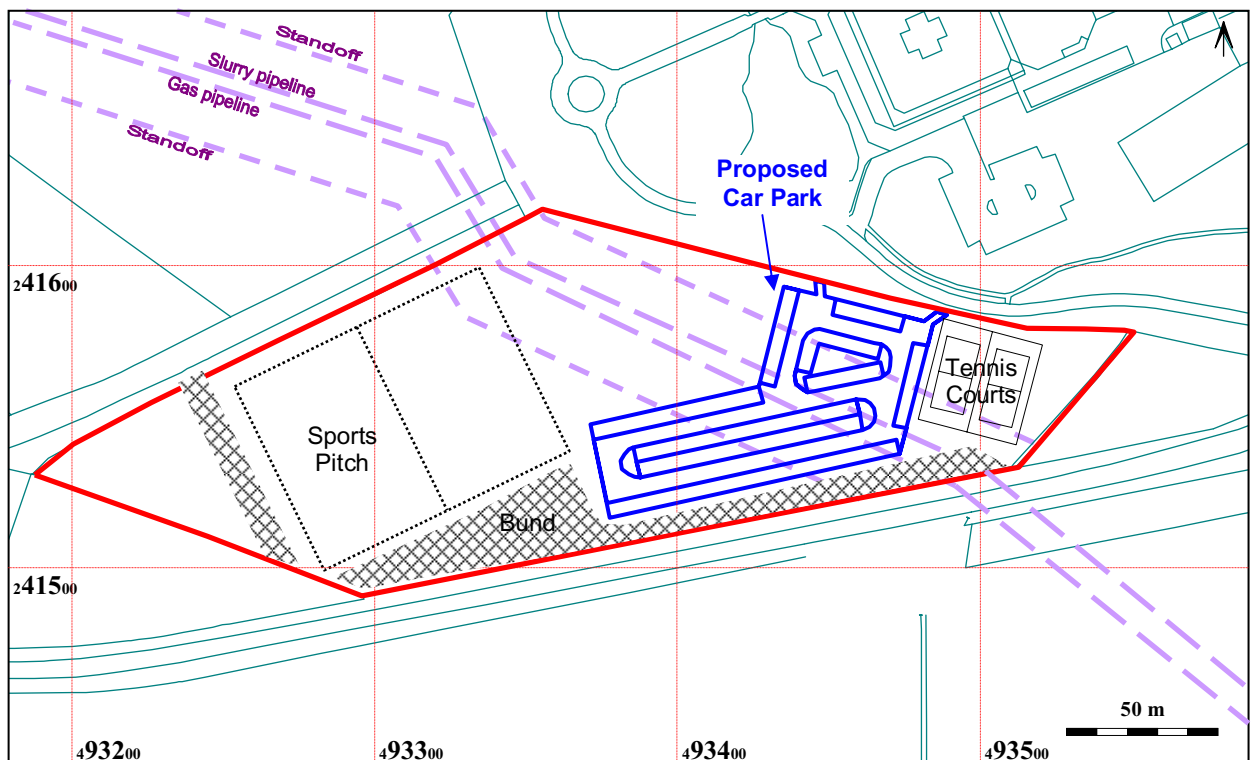
Year	Map/document	Source, reference
1807	Estate map	BLARS, document ref: X206/1
1840	Enclosure Map	BLARS, document ref: MA77
1881	1st ed. OS 6-inch map	BLARS reading room
1901	2nd edition 6-inch OS map	BLARS
1931	Based on 1901 OS map. Landuse indicated with colours and key.	BLARS
1930s	Aerial photographs	Google Earth
1976	Aerial photographs	HER, HSL UK 76 31 July 76 R17 2144
1996	Aerial photographs	HER, Aerofilms-96c-566 r3 2573-4 HER, Aerofilms-96c-566 r4 2520-21





**Figure 2a: Existing layout and landuse of PDA**

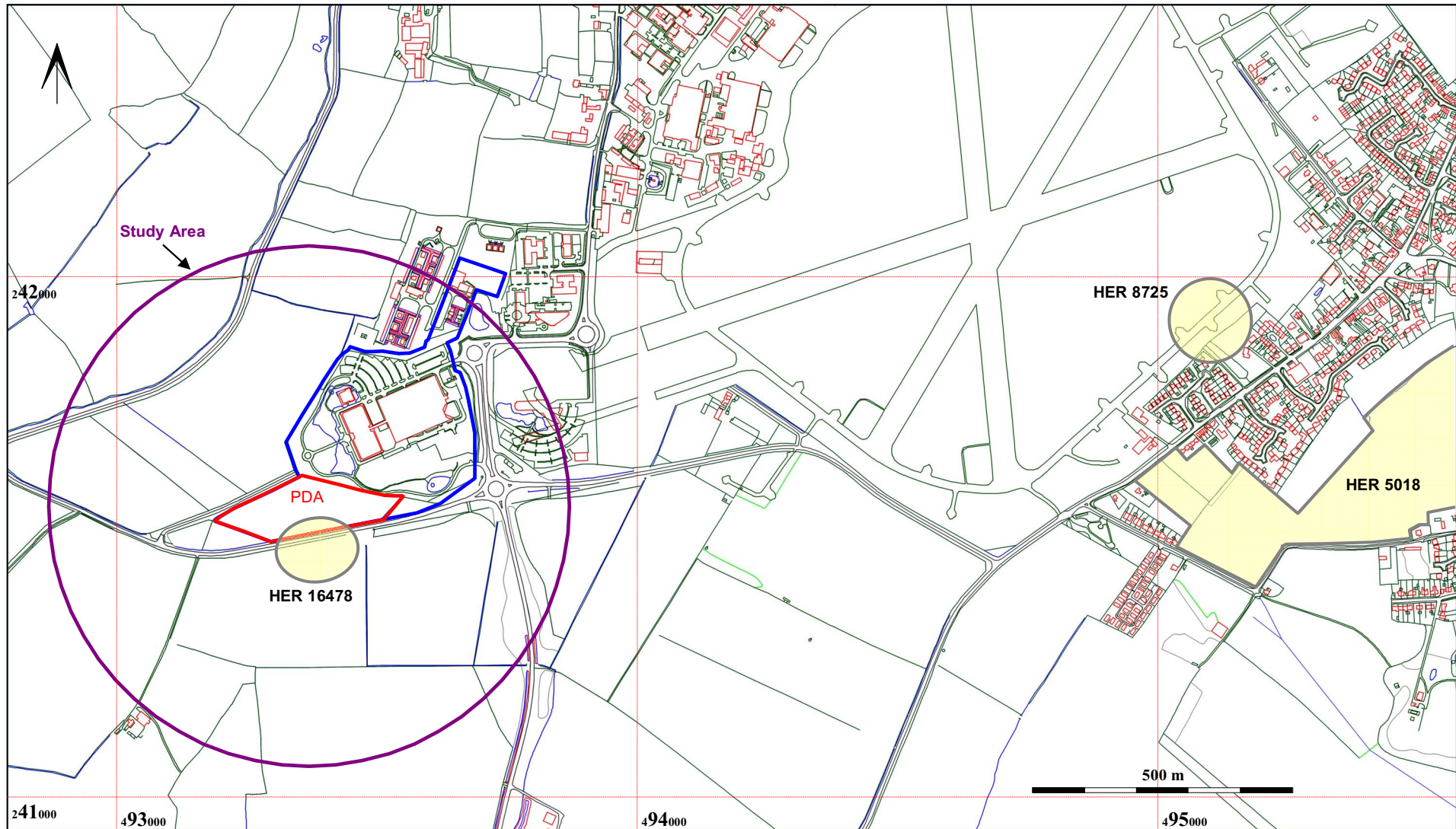
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**Figure 2b: Proposed development**

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**Figure 3: Heritage assets within a 500m-radius study area (plus investigations to the east of the PDA)**

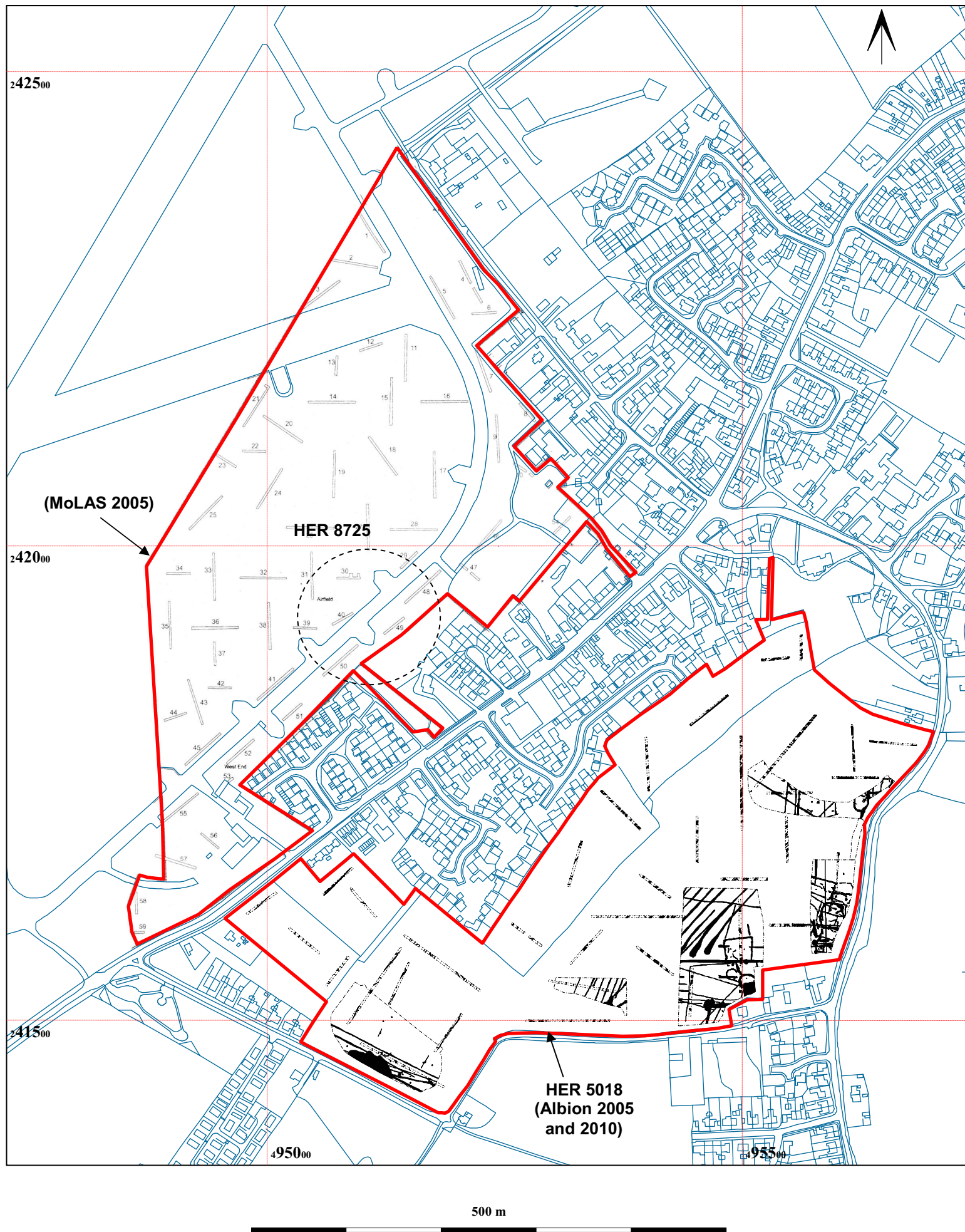
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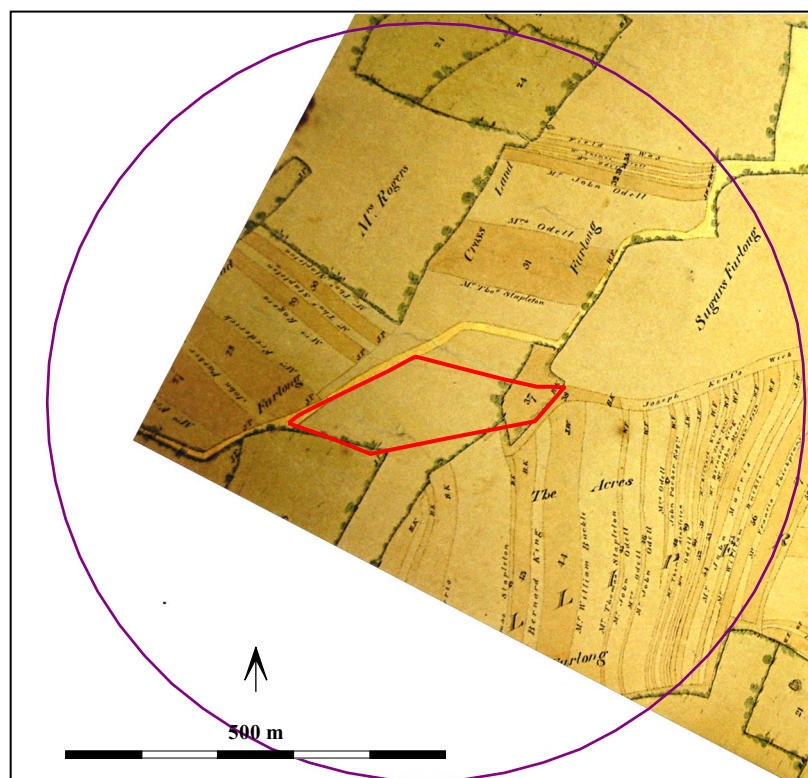
**Figure 4:** Cropmarks HER16478 plotted from aerial photograph (Aerofilms-96c-566 r3 2573-4)

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**Figure 5: Intrusive investigations to the east of the PDA (HER 8725 and 5018)**

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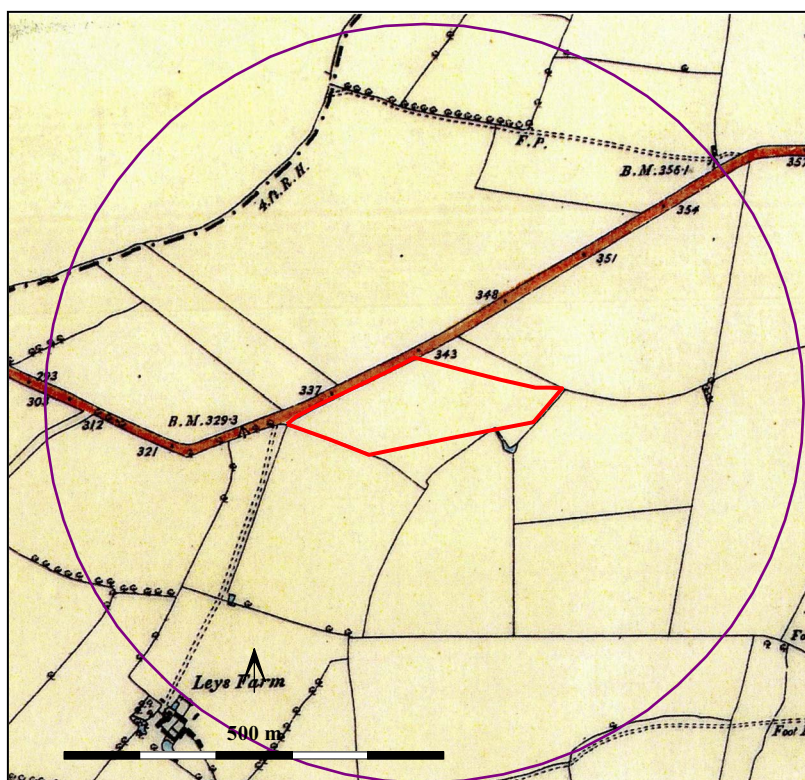


**Figure 6:** 1807 Estate map (position of PDA and scale approximate)

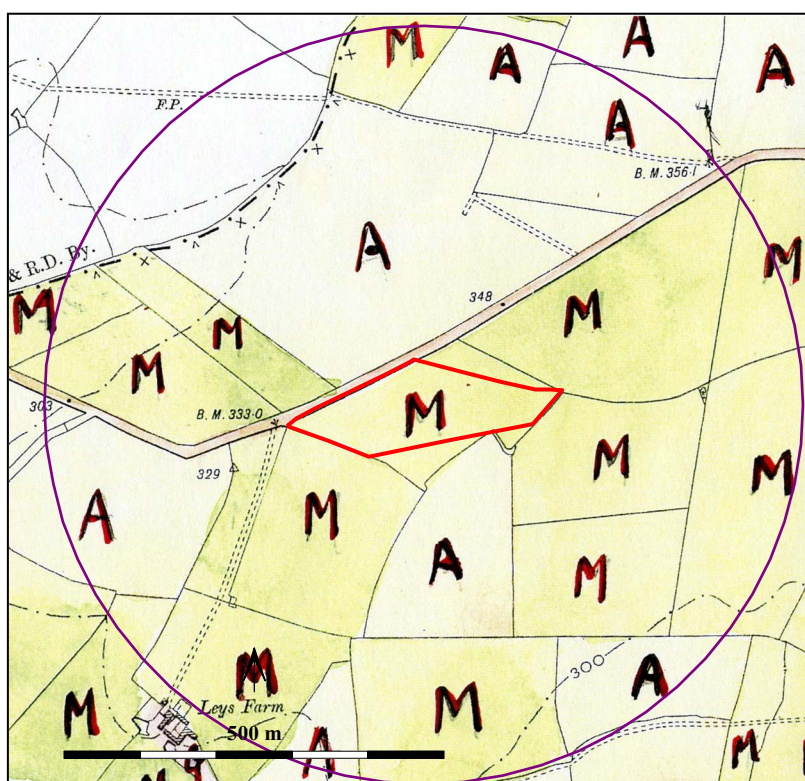


**Figure 7:** 1840 Enclosure map (position of PDA and scale approximate)

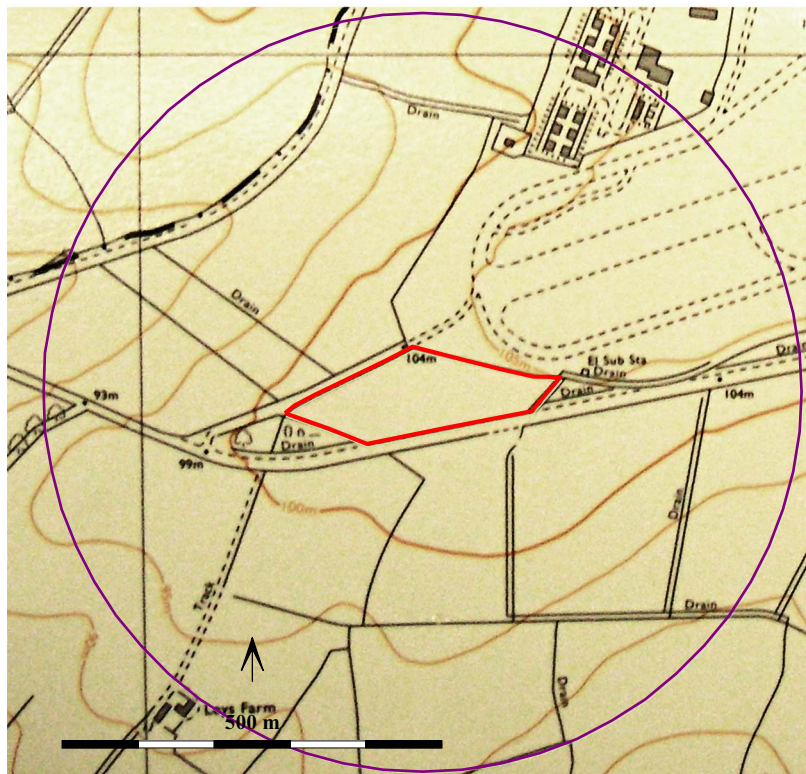




**Figure 8:** 1881 1st Edition 6-inch OS map (position of PDA and scale approximate)



**Figure 9:** 1902 2nd Edition 6-inch OS map (showing 1931 landuse). (position of PDA and scale approximate)



**Figure 10:** 1973-4 OS map.  
(position of PDA and scale approximate)