
PCC Solar Schemes – Additional Surveys requirements

Archaeology

As part of the preplanning assessment of the three solar schemes, English Heritage asked the council to carry out a set of archaeological assessments to better inform them of potential archaeology on site. Two different types of survey were carried out using Test Pits and Augur Sampling, the methodology used was agreed with English Heritage and Peterborough City Council Archaeology Services (PCCAS), see Annex 1,2,3 below.

Summary

Work commenced in October 2013 by Wessex Archaeology at Newborough and America Farm. The intention was to combine the evaluation trenching and augur surveys to produce enhanced site interpretation and data. This was to provide PCCAS and English Heritage with sufficient baseline information on which to determine the significance of any heritage assets present within the sites and allow for a tailored mitigation strategy to be formulated.

The results at America Farm suggest whilst palaeoenvironmental deposits are present, anthropogenic activity is limited. There may be further evidence sealed within and below the palaeoenvironmental deposits. However, it is unlikely these will be affected during construction. AECOM are currently waiting for an interim report for the augur surveys to establish whether we have fen-edge areas within the site.

At Newborough, the investigation has uncovered evidence of probable prehistoric date, Roman settlement and medieval and post-medieval activity. The main focus of the archaeological interest lies to the north of Hill Farm where a small nucleated Roman farmstead has been found. We are yet to establish a date for the potentially prehistoric features and are waiting on further laboratory assessments by Wessex Archaeology. A number of palaeoenvironmental deposits have been located at Newborough which may contain evidence of prior anthropogenic activity although it is unclear at this stage of the investigations. Again, we are waiting on an interim statement for the augur surveys by Wessex.

The next stage of the archaeological investigations will be determined by PCCAS and English Heritage following meetings with them in January.

Methodology

The locations for the test trenches and the frequency of the Augur surveys suggested by English Heritage and PCCAS receipt of the geophysical survey results and reviewed/approved by English Heritage. PCCAS issued a brief to AECOM which was then used to agree the methodology within the Written Scheme of Investigation prepared by Wessex Archaeology see annex 1, 2 and 3 below.

Soil Assessment

This survey was commissioned by AECOM on behalf of the council and was awarded to Soil Environmental Services who carried out the agricultural land soil survey and classification to assess the soil quality of the three proposed solar sites.

Other specific questions asked of the:

- *What will happen to the soil quality (soil nutrient status) if the land is left unfarmed for the next 25 years?*
- *What will happen to the soil quality (soil nutrient status) if the land continues to be intensively farmed for the next 25 years?*
- *Based upon the current soil quality, what do the farmers need to do to the land to farm it in its current state?*

The survey will involve soil auguring to 1.2 m depth at 100m intervals in approximately the same location as the auger work done by Wessex archaeology. In most cases (dependant on soil conditions), a 50 mm Dutch hand held auger will be used. Soil pits dug by Wessex archaeology were also used to analyze the soil type. See methodology contained within Appendix 4.

The soil removed during the auguring and during pit excavation were examined in accordance with:

- Soil Survey Field Handbook
Describing and Sampling Soil Profiles
- Soil Survey of England and Wales, Technical Monograph no. 5, 1976
- Soil Classification for Soil Survey
- Monographs on Soil Survey
- Butler, B E (1980) Clarendon Press, Oxford

Laboratory analysis may be required for soils from some sites.

The reports outlining the results of these assessments for Farms of Newborough and America farm are due before the end of December 2014 so will be available in the New Year.

Tenant Farms Association

The tenant farmers association approached the council in November 13 stating that they would be carrying out a similar soil assessment and asked to see the survey methodology that SES would be following. This was sent to them with the agreement that any survey they conducted would be shared with the council.

Appendix 1 – Test Pitting**Brief for Archaeological Evaluation**

Planning Services, Peterborough City Council, Stuart House, East Wing, St John's Street, Peterborough PE1 5DD; Tel: 01733 864702; email: rebecca.casa-hatton@peterborough.gov.uk

Application No.: PAMAJ/12/00138 (Morris Fen Site);
PAMAJ/12/00139 (America Farm);
PAMAJ/12/00140 (Newborough Farms)

Address: Land To The East And West Of Black Drove Thorney Peterborough (Morris Fen Site);
Land To The South Of America Farm Oxney Road Peterborough (America Farm);
Land To The East Of Peterborough Road Crowland Peterborough (Newborough Farms)

Location: (centred at) TF 28432 06531 (Morris Fen Site);
(centred at) TF 23583 00422 (America Farm);
(centred at) TF 23694 06422 (Newborough Farms)

This brief specifies basic requirements for an archaeological evaluation at the above-named sites in order to gain information about the presence/absence, character, extent, date, integrity, state of preservation and quality of potential heritage assets. The purpose is to inform a strategy for the recording, preservation and/or management of the identified assets, also mitigating potential threats and informing proposals for further archaeological investigations within the ongoing programme of research. The investigation must result in a comprehensive and structured record that is interpreted in consideration of national, regional and local archaeological research themes, and a report that is disseminated appropriately.

This brief has been drawn up on the basis of information supplied in respect of the planning application. The terms of the brief will be monitored during the course of work on site. Revisions and amendments may be required in consideration of further details and ongoing fieldwork results.

1. Site Description

The development site at Morris Fen (c. 106ha) is located approximately 9km north east of Peterborough and 1km north of Thorney. Currently, it comprises arable fields bounded to the west by Black Drove, and to the north, east and south by land drains.

The development site at America Farm (c. 41ha) is located approximately 2km east of Peterborough and 3.5km northwest of Whittlesey. Currently, it comprises arable fields bounded to the east and southeast by Willow Hall Lane, and to the north by Oxney Road. To the north of the development site are America Farm Cottage and Shooters Way, to the west of the development site is Flagfen Farm and to the south east are Northey Bungalows and Northey Farm.

The proposed development site at Newborough Farms (c. 203ha) is located approximately 7km north east of Peterborough and 1km south of Crowland. Currently, it comprises arable fields bounded to the north by Old Pepper Lake drain, to the east by Highland Drain, to the south by the B1443 (Thorney Road) and to the west by the A1073 (Crowland / Peterborough Road).

There is one property, Hill Farm, located within the eastern part of the development site and three properties on the western boundary of the development site.

The proposed developments at the three sites entail the creation of solar parks at the three aforementioned sites. These will consist of rows of panels (arrays) 700mm high (minimum) with a pitch angle of 27° and up to 14m apart. The panels will be connected together with above ground cables. The depth of foundations for the inverters (6m x 3m) will be approximately 0.8m. The inverters will be connected in series using below ground cables to the switching stations at America Farm and Newborough Farms, respectively, and to the substation at Morris Fen. Cable trenches will be approximately 0.9m wide and 1m deep. Associated features will include a security fence and CCTV posts to be installed to a depth of approximately 1m; stock fencing; switching stations with 0.8m deep foundations at America Farm and Newborough Farms, and a substation with 2m deep foundations at Morris Fen; access tracks (5m wide) on the existing topsoil to a depth of approximately 0.3m with compacted stone on top.

Ideally, the panels will be fixed using 2m deep and 120-150mm wide stainless steel or aluminium pins. The pins will be driven into the ground and spaced every 7.5m along an array. Alternative foundation systems will be considered, in consideration of further details and ongoing fieldwork results.

2. Archaeological Background

Past and recent archaeological investigations have indicated that the proposed development sites may contain buried remains dating from the Mesolithic period.

In particular, Morris Fen would have been deep fen in the past, becoming progressively wet from the Bronze Age and thus mostly unsuitable for permanent activity/settlement, as indicated by the fenland survey (Hall 1987). Nonetheless, the proposed development site at Morris Fen is characterised by the presence of a number of fen gravel islands which were dry land in the Mesolithic and Neolithic periods, and were buried under later marine and freshwater fen deposits (French & Pryor 1993).

Newborough Fen contains the late Neolithic tidal roddons, as well as the Bronze Age and Roman fen edges. Undesignated Bronze Age barrows visible on aerial photographs are located within the boundaries of the proposed development area. In addition, three scheduled Bronze Age barrows are located within a 1km-radius, the closest sitting c.300m to the west.

America Farm includes the Neolithic and Bronze Age buried fen edges, between the Flag Fen basin to the east and the Priors' Fen basin to the west. It is located in close proximity to Flag Fen Scheduled Monument (List Entry Number: 1406460 A Bronze Age post alignment and timber platform at Flag Fen and associated Bronze Age and later field systems and settlement to either side of the Northey Road). The proposed development site may contain waterlogged deposits with preserved palaeo-environmental remains, as well as organic artefacts and metalwork similar to those found at Flag Fen and, more recently, at Must Farm (Whittlesea).

3. Requirements for the Investigation

Any application for development is assessed against the National Policy Framework Section 12 (NPPF, Department for Communities and Local Government, 27 March 2012) and Policy CS17 of the adopted Peterborough Core Strategy DPD (PCC, February 2011).

With reference to NPPF 12.139 'Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets'.

With reference to NPPF 12.128 '... Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation'.

All archaeological work must be carried out in accordance with a written scheme of investigation which is expected to fulfil the conditions specified in this brief.

No demolition/development shall commence until a programme of archaeological work, including a Written Scheme of Investigation (WSI), has been submitted to, and approved by, PCCAS in writing. The scheme shall include an assessment of significance and research questions.

The investigation will be undertaken by a recognised archaeological organisation of demonstrable competence, working to *IfA Standard and Guidance for Archaeological Excavations*, *IfA Standard and Guidance for Archaeological Watching Briefs* and *Standards for Field Archaeology in the East of England* (Gurney 2003).

A Written Scheme of Investigation (WSI) must be completed and approved before fieldwork begins. This will include:

- The programme and methodology of site investigation and recording
- The programme for post investigation assessment
- Provision to be made for analysis of the site investigation and recording
- Provision to be made for publication and dissemination of the analysis and records of the site investigation
- Provision to be made for archive deposition of the analysis and records of the site investigation
- Provisions to be made for public engagement during fieldwork (through direct participation, interpretation panels, open days, public talks, online information, and media coverage) and following post-excavation assessments (through displays, exhibitions, popular publications, site designs and public art).
- Nomination of a competent person or persons/organisation to undertake the works set out within the WSI.

4. Aims

The investigation will aim to:

- gain information about the heritage assets within the proposed development areas;
- provide detailed information regarding the date, character, extent, integrity and degree of preservation of the identified heritage assets;
- inform a strategy for the recording, preservation and/or management of the identified assets;
- mitigate potential threats;
- inform proposals for further archaeological investigations (namely, targeted area excavations) within the ongoing programme of research;
- define the sequence and character of activity at the site, as reflected by the excavated remains;
- interpret the archaeology of the site within its local, regional, and national, archaeological context.

The excavation should consider the general investigative themes outlined by: Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24; *Research and Archaeology: A Framework for the Eastern Counties* (Glazebrook 1997; Brown & Glazebrook 2000), *English Heritage Archaeology Division Research Agenda* (1997); *Discovering the Past, Shaping the Future: Research Strategy 2005 - 2010* (English Heritage 2005).

Specifically, the following investigative aims should be accommodated in the programme of archaeological work:

- characterisation of the sites in the broader landscape;
- characterisation of the activities identified on the sites
- characterisation of changes affecting land-use through time

Supplementary and alternative research themes may be proposed within the submitted specification, or defined by agreement in consideration of on going excavation results (see Rebecca Casa Hatton 2013, *Brief for Archaeological Coring Survey*).

5. Techniques

5.1 Desktop study

There is no need to produce a separately bound desk-based study. However, the cultural heritage study undertaken as part of the Environment Statement (Ch. 6, Draft) will be incorporated in the final report.

5.2 Trial Trenching

Machine cut trial trenches/test pits with a minimum width of 5m will be excavated under archaeological supervision, using a flat bladed ditching bucket.

The location of the trenches/test pits will target areas of anomalies, as identified during the geophysical survey, as well as areas of significance, as identified during the coring survey and in the course of the post-excavation interim assessment. The evaluation sample will be no less than 2% of the targeted areas to be evaluated. Revisions and amendments of the sampling methodologies and percentages may be required in consideration of further details and ongoing fieldwork results.

The location of the trenches/test pits will flexible and will take into consideration potential above- and below-ground constraints and/or hazards, such as trees, utility trenches, overhead cables and areas of modern disturbance. If necessary, the trenches/test pits will be re-located.

The trenches/test pits will be excavated to the upper interface of secure archaeological deposits or, where these are not present, to a depth of 2m. Thereafter, hand-excavation will be required to sample any features exposed (see below).

In addition, further trenching will be carried out as a contingency, if significant discrete remains or clusters of features are encountered.

The field evaluation must not be carried out at the expenses of the heritage assets and has to be minimally intrusive and minimally destructive to archaeological remains.

5.3 Metal Detecting

Thorough metal detector sweeps of exposed features and excavation spoil will be carried out in advance of, and during, hand excavation. Deeply buried signals will be investigated only if agreed as part of the hand excavation programme.

5.4 Hand Excavation

All man-made features will be investigated. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their origin and to characterise any related human activity. Hand excavation and feature sampling will be sufficient to establish date and character, and to allow appropriate levels of recording.

Deposits and layers (including buried soils) will be sampled sufficiently to enable a confident interpretation of their character, date and relationships with other features. Thereafter, mechanical removal and visual scanning for artefacts may be acceptable.

A viable, representative sample (usually not less than 50%) of all exposed features will be hand excavated. A representative sample of all significant discrete man-made features will normally be subject to a minimum of 50% excavation. At least 15% (or a percentage sufficient to achieve information on the character, function and dating) of linear and/or very large and deep features will be hand excavated. Particular attention will be given to terminals and intersections to ascertain stratigraphic and physical relationships.

Structural remains (stake holes, post holes and gullies, as well as masonry foundations or low masonry walls) and associated features like hearths) will be excavated fully and in plan/phase, as appropriate to the requirements of the project.

The evaluation will provide a representative sample of the site's archaeology at no significant cost to the value or integrity of archaeological remains therein. Judgement regarding the removal of human remains, structural remains (*in situ* wood or masonry), or other special remains or deposits, will be led by this consideration, and will be made in consultation with the PCCAS Archaeologist.

If exceptional remains are encountered unexpectedly, the PCCAS Archaeologist will be notified. A new brief may be issued to be read in conjunction with the present one.

5.5 Palaeoenvironmental Sampling

Viable samples to characterise soil profiles, as well as plant remains/charred plant remains, molluscs, small faunal remains, and pollen sequences, will be taken from a representative selection of suitable deposits in accordance with the evaluation aims. The samples will be extracted and recorded in accordance with Environmental Archaeology (English Heritage 2002), and in consultation with the appointed specialist and English Heritage.

5.6 Recording

A numbered single context-based recording system, written on suitable forms and indexed appropriately, will be used for all elements of the archaeological recording programme.

Measured plans will be produced that show all exposed features (including natural features, modern features, etc.) and excavated areas. Individual measured plans and sections will be produced for all excavated features and deposits. These will be accurately tied in to trench plans/trench location plans that in turn will be accurately related to the Ordnance Survey grid and to suitably mapped local features (boundaries, buildings, roads, etc.).

All sections and plans will be related accurately to Ordnance Datum.

A photographic record comprising monochrome and colour prints or colour slides will form part of the excavation record. Digital photographs may be used in the final report (maximum of two photographs per A4 sheet).

5.7 ***In Situ Preservation***

Should preservation *in situ* strategy be applicable, following appropriate excavation and recording, all exposed surfaces will be cleaned and prepared for re-burial beneath construction materials. If necessary, the laying out of geotextile and buffering materials will be carried out under archaeological supervision.

6. **Assessment and Review**

The archaeological investigation may be followed by an assessment of the character and significance of all categories of the recorded evidence. The assessment will be undertaken by suitably qualified specialists in accordance with MoRPHE (English Heritage 2006), and a report will be submitted within two months of the cessation of fieldwork.

The assessment report will contain a thorough appraisal of the recorded evidence within its local, regional and national context.

An assessment review will be held with PCCAS Archaeologist in order to agree proposals for further analysis and publication.

7. **Report**

Specific publication requirements will be agreed during the assessment review. Publication of a short report within refereed local journal (for example, *Proceedings of Cambridge Antiquarian Society*, *Northamptonshire Archaeology*) or national journals should be anticipated. Copies of the final report should be submitted to the NMR, Local Studies section of Peterborough Central Library, Peterborough Sites and Monuments Record (minimum of 2 paper copies, and 1 digital version), and the Haddon Library (Cambridge University). Distribution and dissemination are NOT undertaken by PCCAS.

Reports will be supported by sufficient maps, plans and sections to complement the text. Phase plans and artefact drawings should be included. Reconstruction drawings are desirable.

ALGAO and PCCAS endorse the *Online Access to Index of Archaeological Investigations* (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. **The archaeological contractor must therefore complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>.** If the archaeological contractor does not have internet access a paper copy of the form can be obtained from PCCAS. Contractors are advised to contact PCCAS prior to completing the form. Once a report has become a public document by forming part of a planning application, PCCAS will place the information on a website. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to PCCAS.

8. Archive

It is a requirement of PCCAS that significant excavation archives pertaining to the Peterborough area should be held close to source and made readily available to the public and local and national researchers. This would normally mean retention at Peterborough Museum and Art Gallery's facilities. Arrangements for archive storage at this location should be made with the Curator at Peterborough Museum. In this case, the archive will be prepared for long term storage to the requirements of Peterborough Museum and Art Gallery (Wass 2003).

If alternative arrangements for storage are agreed, the archive should be prepared to the requirements of *Management of Archaeological Projects* (English Heritage 1991), *Selection, Retention and Dispersal of Archaeological Collections* (Society of Museum Archaeologists, 1993), and *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission, 1992).

In either case, the requirement for conservation of significant items for long term storage and display should be anticipated. As a supplement to a paper archive, proposals for the creation of a digital archive should be submitted.

9. Miscellaneous Requirements and Considerations

The fieldwork contractor and commissioning agent are responsible for obtaining all necessary permissions and licenses to carry out archaeological work at the subject site. No liability will be accepted by PCCAS for the breach of any legal provisions (Scheduled Monument Consent, health and safety measures, etc.), or informal agreements, made by the fieldwork contractor or commissioning agent during the course of the archaeological work.

Peterborough City Council's Archaeologist will be given notice of when work is due to commence. Access to the site for monitoring purposes must be accorded to PCCAS who will monitor implementation of the programme of works on behalf of the Local Planning Authority and evaluate the work being undertaken on site against the methodology detailed in this specification.

Peterborough City Council's Archaeologist will also be responsible for considering any changes to the specification of works; any such alterations should be agreed in writing with the relevant parties prior to commencement of on site works, or at the earliest available opportunity.

It is expected that individuals who have an archaeological interest in the area will be given an opportunity to visit the on-going evaluation.

10. References

Brown, N. & Glazebrook, J. 2000. *Research and Archaeology: a Framework for the eastern Counties, 2. Research agenda and strategy*, East Anglian Archaeology Occasional Paper 8

English Heritage, 1997. *English Heritage Archaeology Division Research Agenda*

English Heritage, 2002. *Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post-excavation*

Glazebrook, J. 1997. *Research and Archaeology: A Framework for the Eastern Counties 1. Resource Assessment*, East Anglian Archaeology Occasional Papers 3

Gurney, D. 2003. *Standards for Field Archaeology in the East of England*, East Anglian Archaeology Occasional Papers 14

IfA *Standard and Guidance for Archaeological Excavations*

IfA *Standard and Guidance for an Archaeological Watching Brief*

Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24

Museums and Galleries Commission, 1992. *Standards in the Museum Care of Archaeological Collections*

Peterborough Historic Environment Record (HER)

Society of Museum Archaeologists 1997. *Selection, Retention and Dispersal of Archaeological Collections*

Wass, G. 2003. *Peterborough Museum and Art Gallery Standards for Archaeological Archive Preparation*

Appendix 2: Augur Survey**Brief for Archaeological Coring Survey**

Planning Services, Peterborough City Council, Stuart House, East Wing, St John's Street, Peterborough PE1 5DD; Tel: 01733 864702; email: rebecca.casa-hatton@peterborough.gov.uk

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PAMAJ/12/00139 (America Farm);
PAMAJ/12/00140 (Newborough Farms)

Address: Land To The East And West Of Black Drove Thorney Peterborough (Morris Fen Site);
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Location: (centred at) TF 28432 06531 (Morris Fen Site);
(centred at) TF 23583 00422 (America Farm);
(centred at) TF 23694 06422 (Newborough Farms)

This brief specifies basic requirements for a coring survey at the above-named sites. The purpose of this work is to provide palaeo-environmental sampling analyses, hydrological assessments, sedimentary mapping and archaeological characterisation within the proposed development schemes. The investigation must result in a comprehensive and structured record that is interpreted in consideration of national, regional and local archaeological research themes, and a report that is disseminated appropriately.

This brief has been drawn up on the basis of information supplied in respect of the planning applications. The terms of the brief will be monitored during the course of work on site. Revisions and amendments may be required in consideration of further details and ongoing fieldwork results.

1. Site Description

The development site at Morris Fen (c. 106ha) is located approximately 9km north east of Peterborough and 1km north of Thorney. Currently, it comprises arable fields bounded to the west by Black Drove, and to the north, east and south by land drains.

The development site at America Farm (c. 41ha) is located approximately 2km east of Peterborough and 3.5km northwest of Whittlesey. Currently, it comprises arable fields bounded to the east and southeast by Willow Hall Lane, and to the north by Oxney Road. To the north of the development site are America Farm Cottage and Shooters Way, to the west of the development site is Flagfen Farm and to the south east are Northey Bungalows and Northey Farm.

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There is one property, Hill Farm, located within the eastern part of the development site and three properties on the western boundary of the development site.

The proposed developments at the three sites entail the creation of solar parks at the three aforementioned sites. These will consist of rows of panels (arrays) 700mm high (minimum) with a pitch angle of 27° and up to 14m apart. The panels will be connected together with above ground cables. The depth of foundations for the inverters (6m x 3m) will be approximately 0.8m. The inverters will be connected in series using below ground cables to the switching stations at America Farm and Newborough Farms, respectively, and to the substation at Morris Fen. Cable trenches will be approximately 0.9m wide and 1m deep. Associated features will include a security fence and CCTV posts to be installed to a depth of approximately 1m; stock fencing; switching stations with 0.8m deep foundations at America Farm and Newborough Farms, and a substation with 2m deep foundations at Morris Fen; access tracks (5m wide) on the existing topsoil to a depth of approximately 0.3m with compacted stone on top.

Ideally, the panels will be fixed using 2m deep and 120-150mm wide stainless steel or aluminium pins. The pins will be driven into the ground and spaced every 7.5m along an array. Alternative foundation systems will be considered, in consideration of further details and ongoing fieldwork results.

2. Archaeological Background

Past and recent archaeological investigations have indicated that the proposed development sites may contain buried remains dating from the Mesolithic period.

In particular, Morris Fen would have been deep fen in the past, becoming progressively wet from the Bronze Age and thus mostly unsuitable for permanent activity/settlement, as indicated by the fenland survey (Hall 1987). Nonetheless, the proposed development site at Morris Fen is characterised by the presence of a number of fen gravel islands which were dry land in the Mesolithic and Neolithic periods, and were buried under later marine and freshwater fen deposits (French & Pryor 1993).

Newborough Fen contains the late Neolithic tidal roddons, as well as the Bronze Age and Roman fen edges. Undesignated Bronze Age barrows visible on aerial photographs are located within the boundaries of the proposed development area. In addition, three scheduled Bronze Age barrows are located within a 1km-radius, the closest sitting c.300m to the west.

America Farm includes the Neolithic and Bronze Age buried fen edges, between the Flag Fen basin to the east and the Priors' Fen basin to the west. It is located in close proximity to Flag Fen Scheduled Monument (List Entry Number: 1406460 A Bronze Age post alignment and timber platform at Flag Fen and associated Bronze Age and later field systems and settlement to either side of the Northey Road). The proposed development site may contain waterlogged deposits with preserved palaeo-environmental remains, as well as organic artefacts and metalwork of the type which have been found at Flag Fen and, more recently, at Must Farm (Whittlesea).

3. Requirements for the Investigation

Any application for development is assessed against the National Policy Framework Section 12 (NPPF, Department for Communities and Local Government, 27 March 2012) and Policy CS17 of the adopted Peterborough Core Strategy DPD (PCC, February 2011).

The investigation will be undertaken by a recognised archaeological organisation/individual of demonstrable competence, working to IfA standards.

A Written Scheme of Investigation (WSI) must be completed and approved before fieldwork begins. This will include:

- The programme and methodology of site investigation and recording
- The programme for post investigation assessment
- Provision to be made for analysis of the site investigation and recording
- Provision to be made for publication and dissemination of the analysis and records of the site investigation
- Provision to be made for archive deposition of the analysis and records of the site investigation
- Nomination of a competent person or persons/organisation to undertake the works set out within the WSI

4. Aims

It is proposed that coring should be undertaken in pre-determined locations in order to investigate the stratigraphy of the Holocene fen sequence preserved at the sites. One or more key sequence will be identified, and cores of sediment will be taken for sedimentary and palaeo-environmental analyses. It is presumed that the sediments are no more than 2m deep. An appropriate method for coring needs to be implemented in order for samples to be taken from integral stratigraphic sequences.

The excavation should consider the general investigative themes outlined by: Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24; *Research and Archaeology: A Framework for the Eastern Counties* (Glazebrook 1997; Brown & Glazebrook 2000), *English Heritage Archaeology Division Research Agenda* (1997). Specifically, the following investigative aims should be accommodated in the programme of archaeological work:

- characterisation of the sites in the broader landscape;
- characterisation of the activities identified on the site
- characterisation of changes affecting land-use through time

Supplementary and alternative research themes may be proposed within the submitted specification, or defined by agreement in consideration of on going excavation results. In particular, the investigation should aim to establish the extent, depth, type, date (by C14 dating) and degree of preservation of fen deposits. It should also focus on the analysis of both macro and micro palaeo-environmental remains in order to establish the main floral and faunal species present (and exploited), changes in relation to the fen depositional sequences and the anthropogenic impact on the landscape (environmental disturbance/interaction) (English Heritage 2011, *Environmental Archaeology*).

5 Fieldwork methodology

Both coring method and type of equipment will be discussed with the appointed specialist and written into the WSI for agreement with Peterborough City Council and English Heritage. However, given the shallow depth of the deposits to be sampled (which are no more than 2m deep), for the initial survey work a hand auger should provide an adequate system for both palaeo-environmental sampling and sedimentary mapping (English Heritage 2004, *Geoarchaeology*). Different coring devices may be employed to cope with the potential diversity of sediments that may be encountered.

Coring will be undertaken from geo-located positions at regular sampling intervals on a survey grid. The plan for the boreholes (frequency and number) must be appropriate for the amount of ground disturbance caused by the development. The applicant must produce such a plan prior to commencing coring and the plan must be agreed with Peterborough City Council and English Heritage. Given the extent of the proposed development sites, it is suggested that the first samples are placed far apart, predicting and testing the intervening stratigraphy with further, more closely spaced, tests. A site-specific fieldwork Risk Assessment will be prepared prior to the survey.

6. Assessment and Review

Following the fieldwork, a short interim report of the stratigraphic relationships (a deposit model) and preservation potential of sediments should be prepared. This would inform decisions about further environmental analyses and dating, as well as fieldwork.

The archaeological investigation should be followed by an assessment of the character and significance of all categories of the recorded evidence. The assessment will be undertaken by suitably qualified specialists in accordance with MoRPHE (English Heritage 2006), and a report will be submitted within two months of the cessation of fieldwork.

The assessment report will contain a thorough appraisal of the recorded evidence within its local, regional and national context.

An assessment review will be held with PCCAS Archaeologist and English Heritage in order to agree proposals for further analysis and publication.

7. Report

Specific publication requirements will be agreed during the assessment review. Publication of a short report within refereed local journal (for example, *Proceedings of Cambridge Antiquarian Society*, *Northamptonshire Archaeology*) or national journals should be anticipated. Copies of the final report should be submitted to the NMR, Local Studies section of Peterborough Central Library, Peterborough Sites and Monuments Record (minimum of 2 paper copies, and 1 digital version), and the Haddon Library (Cambridge University). Distribution and dissemination are NOT undertaken by PCCAS.

Reports will be supported by sufficient maps, plans and sections to complement the text. Phase plans and artefact drawings should be included. Reconstruction drawings are desirable.

ALGAO and PCCAS endorse the *Online Access to Index of Archaeological Investigations* (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. **The archaeological contractor must therefore complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>.** If the archaeological contractor does not have internet access a paper copy of the form can be obtained from PCCAS. Contractors are advised to contact PCCAS prior to completing the form. Once a report has become a public document by forming part of a planning application, PCCAS will place the information on a website. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to PCCAS.

8. Archive

It is a requirement of PCCAS that significant excavation archives pertaining to the Peterborough area should be held close to source and made readily available to the public and local and national researchers. This would normally mean retention at Peterborough Museum and Art Gallery's facilities. Arrangements for archive storage at this location should be made with the Curator at Peterborough Museum. In this case, the archive will be prepared for long term storage to the requirements of Peterborough Museum and Art Gallery (Wass 2003).

If alternative arrangements for storage are agreed, the archive should be prepared to the requirements of *Management of Archaeological Projects* (English Heritage 1991), *Selection, Retention and Dispersal of Archaeological Collections* (Society of Museum Archaeologists, 1993), and *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission, 1992).

In either case, the requirement for conservation of significant items for long term storage and display should be anticipated. As a supplement to a paper archive, proposals for the creation of a digital archive should be submitted.

9. Miscellaneous Requirements and Considerations

The fieldwork contractor and commissioning agent are responsible for obtaining all necessary permissions and licenses to carry out archaeological work at the subject site. No liability will be accepted by PCCAS for the breach of any legal provisions (Scheduled Monument Consent, health and safety measures, etc.), or informal agreements, made by the fieldwork contractor or commissioning agent during the course of the archaeological work.

Peterborough City Council's Archaeologist will be given notice of when work is due to commence. Access to the site for monitoring purposes must be accorded to PCCAS who will monitor implementation of the programme of works on behalf of the Local Planning Authority and evaluate the work being undertaken on site against the methodology detailed in this specification.

Peterborough City Council's Archaeologist will also be responsible for considering any changes to the specification of works, in consultation with English Heritage. Any such alterations should be agreed in writing with the relevant parties prior to commencement of on site works, or at the earliest available opportunity.

10. References

Brown, N. & Glazebrook, J. 2000. *Research and Archaeology: a Framework for the eastern Counties, 2. Research agenda and strategy*, East Anglian Archaeology Occasional Paper 8

English Heritage, 1997. *English Heritage Archaeology Division Research Agenda*

English Heritage, 2002. *Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post-excavation*

French, C.A.I. & Pryor, F.M.M. 1993, *The South-West Fen Dyke Survey Project 1982-1986*, EAA59

Glazebrook, J. 1997. *Research and Archaeology: A Framework for the Eastern Counties 1. Resource Assessment*, East Anglian Archaeology Occasional Papers 3

Gurney, D. 2003. *Standards for Field Archaeology in the East of England*, East Anglian Archaeology Occasional Papers 14

Hall, D. 1987, *The Fenland project Number 2: Cambridgeshire Survey, Peterborough to March*, EAA 35

IfA *Standard and Guidance for Archaeological Excavations*

IfA *Standard and Guidance for an Archaeological Watching Brief*

Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24

Museums and Galleries Commission, 1992. *Standards in the Museum Care of Archaeological Collections*

Peterborough Historic Environment Record (HER)

Society of Museum Archaeologists 1997. *Selection, Retention and Dispersal of Archaeological Collections*

Wass, G. 2003. *Peterborough Museum and Art Gallery Standards for Archaeological Archive Preparation*

Appendix 3 – Wessex Archaeology Written Scheme of Investigation



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Peterborough Solar P.

Appendix 4: Soil Environmental Services Methodology

AGRICULTURAL LAND CLASSIFICATION

Agricultural Land Classification (ALC) surveys are undertaken strictly in accordance with:

**Agricultural Land Classification of England and Wales
Guidelines and criteria for grading the quality of agricultural land
(Revised guidelines 1988 and Draft second revision 1996, MAFF, London)**

1 Desktop study

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This will include consultation of:

- **Soil Survey of England and Wales 1:250 000 Soil maps**
- **MAFF 1:250 000 ALC Survey Maps**
- **British Geological Survey 1:50000 survey maps**

2 Site survey

The site visit will involve soil augering to 1.2 m depth at, typically, 50 to 100 m intervals using, in most cases (dependant on soil conditions), a 50 mm Dutch hand held auger. The interval between auger locations can vary as necessary to develop a map of soil characteristics relevant to ALC determination and in accordance with the size of the site and scale of the project. Soil pits will be excavated in each soil type to examine structure. Pits are up to 1 m x 1 m square (maximum) to 1.2 m depth maximum. All soil horizons and grass turf surfaces removed will be carefully replaced following excavation if appropriate.

The soil removed during the augering and during pit excavation is examined in accordance with:

- **Soil Survey Field Handbook**
- ***Describing and Sampling Soil Profiles***
- **Soil Survey of England and Wales, Technical Monograph o. 5, 1976**
- **Soil Classification for Soil Survey**

Monographs on Soil Survey
Butler, B E (1980) Clarendon Press, Oxford

3 Laboratory testing and other data

Laboratory analysis may be required for soils from some sites. Flood risk information data, if needed, is taken from Environment Agency and local knowledge records.

4 Reporting

Reporting will include separate colour maps for soil types and ALC Grades. Reports are presented in hard-copy and digital format with drawings in CAD compatible format if required.

Plans

Plans would be delivered in QuickCAD/DWG, JPEG or BMP format at A4 or A3 size. Base map from the client would be preferred. No additional costs in these formats.

5 Overall timescale

Timescale would be approximately 2-3 weeks total time from date of instruction.

