



# **The Quarry, Castle An Dinas, Ludgvan, Cornwall**

## **Archaeological Watching Brief**



**Historic Environment Projects**



Report No

2014R044

Report Name

The Quarry, Castle An Dinas, Ludgvan,  
Cornwall

Report Author

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Event Type

Watching Brief

Client Organisation

Cormac Solutions

Client Contact

Mr. Andrew Bartle

Monuments (MonUID)

MCO90

Fieldwork dates (From) (To)

23/04/2014

09/05/2014

(Created By)

Hayley Goacher

(Create Date)

06/06/2014

Location (postal address; or general location and parish)

The Quarry, Castle An Dinas, Ludgvan, Penzance,  
Cornwall

(Town – for urban sites)

(Postcode)

TR20 8AG

(Easting) X co-ord

SW 4812

(Northing) Y co-ord

3484



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**Cover Image**

The northern end of the topsoil strip looking northeast towards Roger's Tower and Castle  
An Dinas hillfort.

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# 1. Introduction

## Project background

HE Projects were commissioned by Andy Bartle on behalf of Cormac Solutions to provide a programme of archaeological mitigation at the proposed development at The Quarry, Castle An Dinas, Ludgvan (Fig 1). The development area comprised 4.5 Ha of scrubland on the periphery of the quarry which will be converted to aggregate storage in advance of an extension to the quarry (Fig 2). The archaeological recording was a requirement of Condition 8 of the Review of Old Mineral Permissions (ROMPs) and includes the following stipulation:

*Prior to the commencement of any works within the area indicated on Plan "CAD7 (MPA)" (including mineral extraction, deposition of waste, stockpiling of materials, creation of haul roads and other access tracks, or any development ancillary to quarrying or the stripping of vegetation or soil) and within 24 months of the determination of these conditions, the operator will commission an archaeological survey to identify and map all sites and features of archaeological significance within those areas. The survey, which will take place during the months of January to March when vegetation is lowest and slight features are most visible, will be carried out to a written specification submitted by the operator and agreed by the MPA.*

A brief from the planning advice archaeologist (Markham 2013) (Appendix 1) stated that ground works associated with the development may disturb extant and buried archaeological remains. A watching brief was agreed and the methodology set out in the Written Scheme of Investigation (WSI) produced by Historic Environment Projects (Appendix 2). The WSI was agreed with the planning advice archaeologist and the client and the fieldwork was undertaken from April 2014.

## Historical Background

The area of the proposed development falls into land that has been classified as 'Upland Rough Ground' (Countryside Commission 1996). 'Upland Rough Ground' is land which in historic times has been used for the grazing of animals. Although the land has a heath-like appearance, it has often been enclosed in the past. Consequently, upstanding archaeological remains, such as barrows, standing stones and prehistoric enclosures often survive in this zone. The adjacent rough ground in the area is no exception and contains a large number of archaeological sites, including Castle An Dinas itself. An archaeological assessment (Parkes 2012) of the Quarry recorded a number of archaeological features in the area, which include those listed below.

### *Identified archaeological sites*

A number of sites in the vicinity of the study area have been identified. They include:

- The current extension area is located to the south of a substantial enclosure, known as Castle An Dinas, which is likely to be of later prehistoric date (MCO90).
- An enclosure of probable prehistoric date has been identified to the west of the current extension area (MCO51131). Associated settlement remains may extend into the project area.
- Boundaries of probable prehistoric and / or medieval date have been identified across the project area on aerial photographs, and an early boundary was identified by the archaeological assessment (Site 11, Parkes 2012).
- The project area contains a number of features which are probably associated with post-medieval quarrying.

### *Potential sites*

There is potential for buried prehistoric and medieval sites to survive within the project area and there is the scope for the survival of previously unrecorded archaeological sites, organic remains, and artefacts of all periods.

## 2. Aims and objectives

The aim of the project was to gain a better understanding of the site in the event of any disturbance of potential buried archaeological remains. The objective was to obtain an archaeological record of any remains prior to their removal.

The site specific aims were:

- To ensure that the site works were carried out in such a way as to allow adequate recording.
- To record archaeological features and deposits affected by the scheme.
- Determine the extent, condition, nature, character, date and significance of any archaeological remains encountered.
- To undertake palaeoenvironmental sampling as appropriate.
- To recover and record artefacts uncovered by the works.
- To disseminate the results of discoveries appropriately.

The development area had the potential to contain important buried archaeological sites, some of which could have related to the prehistoric enclosure, Castle An Dinas. The key objective of the archaeological investigation of this area was to provide an opportunity to better understand the character and potential of this resource by recording sites and features affected by it.

## 3. Working methods

All recording work was undertaken according to the Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording*. Staff followed the *IfA Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*. The Institute for Archaeologists is the professional body for archaeologists working in the UK.

### Pre-works

In advance of site works HE Projects agreed with the client:

- Working methods across the development area and programme.
- Health and Safety issues and requirements.

### Watching Brief

The archaeological recording across the quarry extension area (where ground reduction took place) took the form of a watching brief. Site works were carried out with an archaeologist in attendance to record any features which become exposed during the stripping process. Soil stripping was carried out under archaeological supervision using a machine fitted with a toothless bucket.

### Creation of site archive

To include:

- Digital colour photographs (stored according to HER guidelines and copies of images made available to the client).
- A detailed site/building description.
- Completion of the English Heritage/ADS OASIS online archive index.

### Archive report

On completion of the fieldwork, the paper records were collated and digitised where necessary and all photographs have been archived. An archive report outlining the results for the project was also produced (this report).

## 4. Results

In advance of the development area being prepared for stock-piling of aggregates the dense scrub vegetation was removed and the ground level reduced by 0.3-0.5m under archaeological direction. The topsoil was a soft, dark greyish-black, slightly clayey-silt, with a high organic content, rooting and vegetation from the covering of gorse and brambles. The topsoil also included frequent granite fragments approximately 0.2-0.5m in diameter. The subsoil was a plastic reddish-brown sandy-silt with frequent granite inclusions 0.2-1m in diameter. In the northern end of the development area the subsoil was a soft yellow silty-sand with no stone inclusions that gradually became reddish-brown with increasing granite inclusions. This difference in colour may be due to the higher content of kaolin, or decomposed granite, usually found at greater depths but here found close to the surface, and visible in the inspection ditch recently dug through the development area by the quarry.

In the northern half of the site, dark greyish-black very narrow linear features orientated approximately southwest-northeast and 0.5-2m long were uncovered and interpreted as plough scars. A longer irregular linear feature [3] orientated southeast-northwest was intermittently visible approximately 10m south of the haul road bordering the northeast edge of the development area. This linear was greater than 20m long, 1.67m wide, though this varied considerably, and 0.05m-0.21m deep (Fig 3). The edges were poorly defined, though generally steeper on the southern side. The linear [3] was filled by a soft black or greyish-black silt (4), which occasionally very waterlogged. This linear feature [3] did not extend as far northwest as the existing haul road or southeast to the inspection ditch. This seems likely to have been a post-medieval field ditch, possibly associated with a removed boundary, though it was frequently confused with, or may have been part of, the other plough scars. It did not relate to any of the boundaries or features identified by the archaeological assessment (Parkes 2012) or shown on historic mapping of the area.

The shallow channel of a former stream bed was visible orientated southeast-northwest and located 32m south from the northwestern haul road. A deposit of very wet and soft black silt filled the stream bed and indicated its route.

In the southern half of the development area the subsoil was considerably disturbed by the granite intrusions with boulders up to 1m in diameter. Although granite was spread throughout the area, there was a series of linear concentrations of the stone orientated northeast-southwest (Fig 4). These were darker in appearance as they extended up into the topsoil and the subsoil was mixed with the dark silt. These linear concentrations did not have defined edges, bases or termini and are most likely to be a geological feature common to the granitic formations of Cornwall (Barton 1969; Bristow 1996; Selwood *et al* 1998).

No archaeological artefacts were found.

## 5. Conclusion

Despite the high potential for archaeological remains from the close proximity of Castle An Dinas prehistoric enclosure, few identifiable archaeological features of minimal significance and no artefacts were uncovered. Agricultural activity, geological and natural processes on the relatively steeply sloping site, together with its rough ground character have probably played a significant role in the lack of archaeological remains.

## 6. References

- Barton, R.M. 1969. *An introduction to the geology of Cornwall*. D. Bradford Barton Ltd, Truro.
- Bristow, C.M. 1996. *Cornwall's geology and scenery. An introduction*. Cornish Hillside Publications, St Austell.
- Cornwall County Council. 1996. *Cornwall landscape assessment 1994*. Report prepared by CAU and Landscape Design Associates, Cornwall County Council, Truro.
- Markham, P. 2013. *Brief for Archaeological Recording at castle An Dinas Quarry, Ludgvan*. Unpublished report for Cornwall Council.
- Parkes, C. 2011. *Castle an Dinas Quarry, Ludgvan, Cornwall. Archaeological assessment*. Historic Environment, Projects, Cornwall Council
- Selwood, E.B. Durrance, E.M. and Bristow, C.M. (eds) 1998. *The geology of Cornwall*. Exeter University Press, Exeter.

## 7. Project archive

The HE project number is **146370**

The project's documentary, photographic and drawn archive will be deposited initially at ReStore PLC, Liskeard and in due course (when space permits) at Cornwall Record Office. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Digital photographs stored in the directory R:\Historic Environment (Images)\SITES.A-D\Castle An Dinas Ludgvan Mitigation 2014
3. English Heritage/ADS OASIS online reference: cornwall2-180963

This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites C\Castle an Dinas Ludgvan Mitigation





Figure 1: Location of the Quarry, Castle An Dinas.

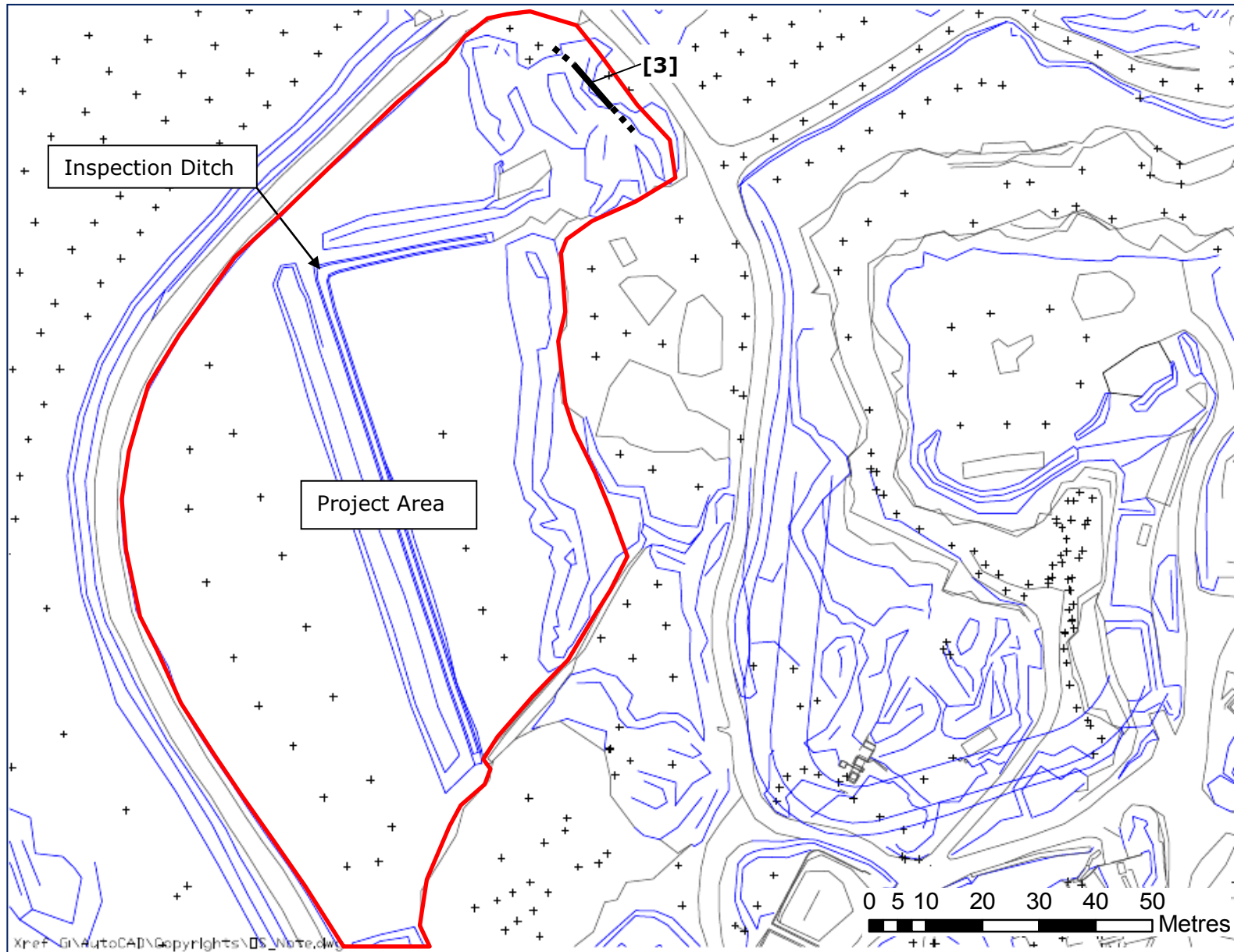


Figure 2: The development area in relation to the quarry and Castle An Dinas hillfort with the location of ditch [3].





*Figure 3: Probable field ditch [3] on the right side of the section with plough scars on the left.*



*Figure 4: Example of the geological linear bands of granite found across the site.*

# APPENDIX 1: Brief

## BRIEF FOR ARCHAEOLOGICAL RECORDING AT CASTLE AN DINAS QUARRY LUDGVAN

**Date:** 27<sup>th</sup> August 2013

**Address:** The Quarry, Castle An Dinas, Ludgvan, Penzance TR20 8AG

**HBSMR:** CCO5694

**Applicant:** Andy Bartle, Head of Aggregates & Recycling Division, CORMAC Solutions Limited, The Quarry, Castle An Dinas, Ludgvan, Penzance TR20 8AG  
t. 01736 336600 e. abartle@cormactd.co.uk

**Historic Environment Planning Advice Officer:** Phil Markham, Cornwall Council, Historic Environment Service, Council Offices, Dolcoath Avenue, Camborne  
TR14 8SX t. 07973 813572 e. pmarkham@cornwall.gov.uk

This brief is only valid for six months. After this period the Historic Environment Planning Advice Officer (HEPAO) should be contacted. Any written scheme of investigation (WSI) resulting from this brief shall only be considered for the same period. The contractor is strongly advised to visit the site before completing their WSI as there may be implications for accurately costing the project.

### Contractors Written Scheme of Investigation (WSI)

No ground works are to be undertaken until the HEPAO and the Local Planning Authority (LPA) have approved the archaeological contractor's WSI.

## 1 Introduction

- 1.1 This brief has been written by the HEPAO and sets out the minimum requirements for archaeological recording at the above site to facilitate condition 8 of the Review of Old Mineral Permissions.

## 2 Site Location and Description

- 2.1 The site is centred on Ordnance Survey Grid Reference SW4812 3484 and is on the most westerly peninsula of Cornwall, West Penwith, in elevated heathland between the towns of Penzance and St Ives. It includes three irregular blocks of land in two separate but neighbouring locations, together comprising approximately 24 hectares. All are situated on the slopes of the high rounded hill known from the prehistoric hillfort on its top as Castle an Dinas, a southerly outlier of the chain of similarly elevated hills forming the spine of West Penwith. The largest block with another strip of it adjoining, run across the south west slopes, rising from around 180m to 220m OD. The third, smaller part of the study area is south east of the summit, at around 190m OD. The large active Castle an Dinas Quarry lies between these east and west parts of the area.

## 3 Planning Background

- 3.1 Under the ROMPS (Review of Old Mineral Permissions) process, Condition 8 of the planning permission for Castle -an- Dinas Quarry includes the following stipulation;
- 3.2 'Prior to the commencement of any works within the area indicated on Plan "CAD7 (MPA)" (including mineral extraction, deposition of waste, stockpiling of materials, creation of haul roads and other access tracks, or any development ancillary to quarrying or the stripping of vegetation or soil) and within 24 months of the determination of these conditions, the operator will commission an archaeological

survey to identify and map all sites and features of archaeological significance within those areas. The survey, which will take place during the months of January to March when vegetation is lowest and slight features are most visible, will be carried out to a written specification submitted by the operator and agreed by the MPA.'

## **4 Archaeological Background**

- 4.1 An assessment was carried out by the Projects team of Historic Environment, Cornwall Council (HE, CC) for Cornwall Council as owners and operators of Castle an Dinas Quarry, Ludgvan, Penzance, where expansion of quarrying was proposed, to satisfy a condition of the ROMPS (Review of Mineral Planning Permissions) process. It covered some 24 hectares of rough ground in three blocks, all situated on the slopes of the high rounded hill of Castle an Dinas under the Iron Age hillfort nearby on its summit, designated a nationally important Scheduled Monument with statutory protection. Two blocks lie close together south west of the summit, and the other on the south east slopes. The greatly expanded modern, active quarry extends between the east and west study areas.
- 4.2 Work undertaken for this project included an initial, desk-based assessment to provide information about known or possible sites in the study area, using readily available databases and archives, and a 'walkover' survey involving walking systematically over the study area as intensively as vegetation and other conditions allowed, and recording locations and details of sites identified during the desk-based survey, and of others found on the ground. Digital colour photographs were taken for illustrative purposes.
- 4.3 The project showed that the study areas, though modified on their edges nearest to Castle an Dinas Quarry by recent and ongoing quarrying operations, and despite the prevailing cover of bracken and scrub, show well-preserved earthworks of the prehistoric to modern eras, their character, relationships and time-depth legible from aerial photographs. Known sites include extensive field systems - later prehistoric coaxial fields which run over the eastern area, and may also be traced on the west; and a coherent medieval landscape across the western area, with strip fields flanking a droveway across former commons. These field systems are associated with others in the surroundings, some of which benefit from ground survey and analysis. They are considered of regional importance in themselves. They are significant also as components of the setting and context of the Scheduled hillfort; the co-axial fields, with others north of the summit, and more recorded from aerial photographs on the slopes between now cut away by the modern quarry, indicating that the hillfort developed in a landscape striped with field boundaries running on a shared alignment all across it.
- 4.4 Other sites of particular interest in the western area included the possible site of a barrow ring-ditch, and a potential prehistoric standing stone, both of which would be considered as being of equivalent status to designated assets (ie Scheduled Monuments) should they be confirmed. Several features including possible turf fuel stacks are significant for their probable relationship to a near-intact abandoned smallholding with its fields, immediately adjoining the assessment area.
- 4.5 The eastern area lies in a large dense complex of shallow post-medieval extractive pits, clearly visible and with potential for increasing understanding of this poorly understood type of site. It also has a gateway on its north marking an approach, quarried way elsewhere, to the skyline folly Rogers' Tower built around 1800 on the south edge of Castle an Dinas hillfort. The tower is included in the scheduling of the hillfort, and forms a widely-visible and well-known landmark in the district.

## **5 Requirement for Work**

5.1 Ground works associated with the development may disturb extant and buried archaeological remains. It is therefore important that a suitably qualified archaeologist(s) is/are present during these works in order to identify and record any features of interest.

5.2 The site specific aims are to:

- Establish the presence/absence of archaeological remains
- Determine the extent, condition, nature, character, date and significance of any archaeological remains encountered
- To establish the nature of the activity on the site
- To identify any artefacts relating to the occupation or use of the site
- To undertake palaeo-environmental investigation as appropriate
- To provide further information on the archaeology of the site from any archaeological remains encountered

## **6 General Methodology**

6.1 All stages of the investigation shall be supported by a written scheme of investigation (WSI).

6.2 The archaeological contractor is expected to follow the code of the Institute for Archaeologists (IfA).

6.3 Details including the name, qualifications and experience of the site director and all other personnel (including specialist staff) shall be included within the WSI.

6.4 All of the latest Health and Safety guidelines shall be followed on site.

6.5 The IfA's Standards and Guidance should be used for additional guidance in the production of the WSI, the content of the report and the general execution of the project.

6.6 Terminology will be consistent with the English Heritage Thesaurus.

## **7 Archaeological Recording Methodology**

7.1 Prior to the commencement of on site works the archaeological contractor should familiarise themselves with the site by examining the information held by the Cornwall and Scilly Historic Environment record (HER), the Cornwall Records Office at Truro and the Cornwall Centre at Redruth, where appropriate.

7.2 An archaeologist shall be present during all ground works associated with the development, unless circumstances dictate a different approach. A toothless ditching bucket can be used for the removal of any overburden until the first archaeological horizon is exposed. This will then be hand cleaned as appropriate.

7.3 Any surviving remains which will be disturbed or destroyed by the development shall be archaeologically excavated and recorded.

7.4 Details of how all archaeological contexts and artefacts will be excavated, surveyed, recovered and recorded shall be provided. The site will be tied into the national grid.

7.5 Details of the site planning policy shall be given in the WSI. The normal preferred policy for the scale of archaeological site plans is 1:20 and sections 1:10, unless circumstances indicate that other scales would be more appropriate.

- 7.6 The photographic record shall consist of prints in both black and white and colour together with the negatives. Digital photography may be used for report illustration. For both general and specific photographs, a photographic scale shall be included. In the case of detailed photographs it may be appropriate to include a north arrow. The photographic record shall be accompanied by a photographic register detailing as a minimum, feature number, location and direction of shot.
- 7.7 If significant archaeological deposits are exposed, all works must cease and a meeting convened with the client and the HEPAO to discuss the most appropriate way forwards.

## **8 Finds**

- 8.1 All finds, where appropriate, will be retained from each archaeological context excavated.
- 8.2 All finds, where appropriate, shall be washed.
- 8.3 All pottery, and other finds, where appropriate, shall be marked with the site code and context number.
- 8.4 The WSI shall include an agreed list of specialist consultants, who may be required to conserve and/or report on finds, and advise or report on other aspects of the work including environmental sampling.
- 8.5 The requirements for conservation and storage shall be agreed with the Royal Cornwall Museum prior to the start of work, and confirmed in writing to the HEPAO.
- 8.6 Finds work should be to accepted professional standards and adhere to the Institute for Archaeologists *Guidelines for Finds Work*.
- 8.7 Environmental sampling should be guided by *Environmental Archaeology* (English Heritage Centre for Archaeological Guidelines. 2001/02).
- 8.8 Further English Heritage guidance that may be helpful includes *Geoarchaeology* (2004) and *Archaeometallurgy* (2001).
- 8.9 The English Heritage Advisor for Archaeological Science will be able to provide archaeological science advice if required (Vanessa Straker 0117 975 0689).

## **9 Human Remains**

- 9.1 Any human remains which are encountered must initially be left in situ and reported to the HEPAO and the appropriate authorities (the Coroner), where appropriate. If removal is necessary this must comply with the relevant Government regulations. If burials are encountered their legal status must be ascertained and recording and/or removal must comply with the legal guidelines.
- 9.2 If human remains are not to be removed their physical security must be ensured, preferably by back filling as soon as possible after recording.
- 9.3 If human remains are to be removed this must be done with due reverence and in accordance to current best practice and legal requirements. The site must be adequately screened from public view. Once excavated human remains must not be exposed to public view.

## **10 Results**



- 10.1 The full report including all specialist assessments of artefact assemblages shall be submitted within a length of time (but not exceeding six months) to be agreed between the applicant and the archaeological contractor, Cornwall County Council Historic Environment Service and the Royal Cornwall Museum. A further digital copy shall be supplied on CD-ROM preferably in 'Adobe Acrobat' PDF format.
- 10.2 The archaeological contractor will undertake the English Heritage/ADS online access to the index of archaeological investigations (OASIS).
- 10.3 This report will be held by the Cornwall and Scilly Historic Environment Record (HER) and made available for public consultation.
- 10.4 The report must contain:
- A concise non-technical summary of the project results.
  - The aims and methods adopted in the course of the investigation.
  - A discussion of the archaeological findings in terms of both the site specific aims and the desk based research.
  - A location map, a drawing showing those areas examined as part of the archaeological recording, and copies of any archaeological plans and sections. All plans shall be tied to the national grid.
  - All specialist reports and assessments.
  - A summary of the archive contents and date of deposition.
  - A context register with brief descriptions shall be included as an appendix.
  - A copy of the brief and the approved WSI will be included as an appendix.
- 10.5 A contingency shall be made within the costs for full publication in an appropriate journal. The HEPAO will notify the contractor of such a need within four weeks of receipt of the report.

## **11 Archive Deposition**

- 11.1 An ordered and integrated site archive will be prepared in accordance with: *Management of Research Projects in the Historic Environment (MoRPHE) English Heritage 2006* upon completion of the project. The requirements for archive storage shall be agreed with the Royal Cornwall Museum. Please check the accessioning and deposition information on the Royal Cornwall Museum website and fill in the 'Notification of Fieldwork' form. Once this has been accepted an accession number will be provided by the museum.

<http://www.royalcornwallmuseum.org.uk/policies/>

- 11.2 If the finds are to remain with the landowner a full copy of the documentary archive shall be housed with the Cornwall County Record Office.
- 11.3 The archive including a copy of the written report shall be deposited with the Royal Cornwall Museum within two months of the completion of the full report and confirmed in writing with the HEPAO.
- 11.4 Where there is only a documentary archive this will be deposited with the Cornwall Record Office.
- 11.5 A copy of the report will be supplied to the National Monuments Record (NMR) in Swindon.
- 11.6 A summary of the contents of the archive shall be supplied to the HEPAO.

## **12 Monitoring**



- 12.1 The HEPAO will monitor the work and should be kept regularly informed of progress.
- 12.2 Notification of the start of work shall be given preferably in writing to the HEPAO at least one week in advance of its commencement.
- 12.3 Any variations to the WSI shall be agreed with the HEPAO, preferably in writing, prior to them being carried out.

# Appendix 2: Written Scheme of Investigation

## HISTORIC ENVIRONMENT PROJECTS

### Written Scheme of Investigation for archaeological mitigation at Castle-an-Dinas Quarry, Ludgvan

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#### 1. Introduction

##### 1.1 Background

HE Projects have been requested by Mr Andy Bartle, to provide a written Scheme of Investigation for a programme of archaeological mitigation ahead of the extension of the Castle-an-Dinas quarry, Ludgvan. The current extension area covers approximately 4.5 HA and is part of a larger quarry extension which will eventually envelop approximately 24 HA.

An archaeological assessment of the entire extension area was undertaken by Historic Environment Projects (Parkes 2012). In the current project area this led to the recording a number of archaeological features including a field boundary (Site 11) which is of possible prehistoric date, as well as a number of others which are probably associated with quarrying. Given that the area had been disturbed by tipping, levelling and quarrying it was graded as being of low to moderate significance, with a recommendation that the overall area was subject to a watching brief with targeted recording of the boundary (Parkes 2012).

The archaeological recording is required as part of a condition of the ROMPS process and Phil Markham (Historic Environment Planning Advice Officer, Cornwall Council) has produced a brief for archaeological recording (27/7/2013). He has been consulted over the requirements for the archaeological recording, and has approved this project design.

This project design is for the archaeological recording during a watching brief during soil stripping. This stage may be followed by one or more of the following elements:

- **Collation of archive and production of archive report**
- **Assessment, analysis (and archive deposition)**
- **Final publication (in an academic journal)**

##### Note\*

**This project design only covers the 4.5 hectares of the current extension area. Subsequent quarry extensions will require separate project designs.**

The soil stripping is expected to start in November 2013.

##### 1.2 Historical background

The area of the proposed development falls into land that has been classified as 'Upland Rough Ground' (Countryside Commission 1996). 'Upland Rough Ground' is land which in historic times has been used for the grazing of animals. Although the land has a heath-like appearance, it has often been enclosed in the past. Consequently, upstanding archaeological remains, such as barrows, standing stones and prehistoric enclosures often survive in this zone. The adjacent rough ground in the area is no exception and contains a large number of archaeological sites, including Castle-an-Dinas itself.

##### *Identified archaeological sites*

A number of sites in the vicinity of the study area have been identified. They include:

- The current extension area is located to the south of a substantial enclosure, known as Castle-an-Dinas, which is likely to be of later prehistoric date (MCO90)

- An enclosure of probable prehistoric date has been identified to the west of the current extension area (MCO51131). Associated settlement remains may extend into the project area
- Boundaries of probable prehistoric and / or medieval date have been identified across the project area on aerial photographs, and an early boundary was identified by the archaeological assessment (Site 11, Parkes 2012).
- The project area contains a number of features which are probably associated with post-medieval quarrying.

#### *Potential sites*

There is potential for buried prehistoric and medieval sites to survive within the project area and there is the scope for the survival of previously unrecorded archaeological sites, organic remains, and artefacts of all periods.

## **2. Aims and objectives**

- To ensure that the site works are carried out in such a way as to allow adequate recording.
- To record archaeological features and deposits affected by the scheme.
- Determine the extent, condition, nature, character, date and significance of any archaeological remains encountered.
- To undertake palaeoenvironmental sampling as appropriate
- To recover and record artefacts uncovered by the works.
- To disseminate the results of discoveries appropriately.

### **2.1 Key objective is:**

The development area has the potential to contain important buried archaeological sites, some of which may relate to the prehistoric enclosure, Castle-an-Dinas. The archaeological investigation of this area therefore provides an opportunity to better understand the character and potential of this resource by recording sites and features affected by it.

## **3. Methodology**

The archaeological programme will follow five stages: fieldwork; archiving; assessment; analysis; report.

### **3.1 Fieldwork**

An archaeological watching brief should be undertaken across the site during the soil stripping.

#### **Pre-works**

In advance of site works HE Projects will discuss and agree the client:

- Working methods across the development area and programme.
- Health and Safety issues and requirements.

#### **Watching Brief**

The archaeological recording across the quarry extension area (where ground reduction is to take place) will take the form of a watching brief. Site works will be carried out with an archaeologist in attendance to record any features which become exposed during the stripping process.

Existing stockpiles of material can be removed without an archaeologist being in attendance.

Soil stripping should be carried out under archaeological supervision using a machine fitted with a toothless bucket. Machines will not run over the stripped area until recorded by the archaeologist.

Where significant remains are encountered the site archaeologist will be given the opportunity to make an appropriate record before work proceeds; where a temporary stop of work is required the site archaeologist will request this via the resident engineer.

If archaeological deposits of regional or national importance are uncovered, then a contingency should be allowed within the construction programme to review options to ensure their preservation *in situ*. In the event that remains cannot be preserved *in situ* then full-scale excavation may be required. The significance of the remains should be agreed between the archaeologist and the Historic Environment Advice Officer.

### **Boundary recording**

As part of the watching brief, Site 11 a boundary which has been identified as being of potentially of early date will be examined. This should include (if possible), the recording of a section through the boundary and the investigation of any associated deposits.

### **Excavation**

Excavations will take place in those parts of the site where the development will lead to the removal of complex or extensive archaeological remains. Following the soil stripping the site archaeologist in consultation with the Historic Environment Planning Advice Officer will decide where full-scale excavation is required.

Where complex/extensive remains are encountered the site archaeologist will be given the opportunity to make an appropriate record before work proceeds; a programme to achieve this will be agreed with the Contractor. An outline contingency excavation time has been given in the attached estimate.

#### **3.1.1 Fieldwork recording**

Following the soil stripping the archaeologist will record any archaeological features which are to be affected by the construction of the building.

##### *Recording - general*

- Excavation will involve a representative investigation of the uncovered features. This will include the excavation of slots through linear features and sufficient excavation of smaller features (pits and postholes, etc) to obtain samples for environmental/radiocarbon dating purposes and establish the character of the structures under investigation.
- Site drawings (plans, sections, locations of finds) will be made by pencil (4H) on drafting film; all plans will be linked to the Ordnance Survey landline map; all drawings will include standard information: site details, personnel, date, scale, north-point
- All features and finds will be accurately located at an appropriate scale.
- All archaeological contexts will be described to a standard format linked to a continuous numbering sequence.
- Photography: scaled monochrome photography will be used as the main record medium, with colour slides used more selectively and for illustrative purposes.
- A location plan will be made linking the site with features that have been mapped by the Ordnance Survey.
- The heights of all features will be tied into the Ordnance Datum.
- Phased plans and sections at a scale of 1:10 and 1:20 will be made of all excavated features.
- Sealed/undisturbed archaeological contexts in the form of buried soils, layers or deposits within cut features (ditches and pits, etc) will be sampled for environmental evidence and dating material. Advice may be needed from Vanessa Straker (Regional Advisor for Archaeological Science).
- The spoil from the stripping will be adequately inspected for finds.

### 3.1.2 Treatment of finds

The fieldwork is likely to produce artefactual/environmental material.

- All finds in significant stratified contexts predating 1800 AD (eg, settlement features) should be plotted on a scaled base plan and described. Post-medieval or modern finds may be disposed of at the cataloguing stage. This process will be reviewed ahead of its implementation.
- All finds will be collected in sealable plastic bags which will be labelled immediately with the context number or other identifier.
- Significant, sealed archaeological contexts (predating c 1500 AD) will be considered for sampling for environmental material and the strategy will be discussed with the project manager. All recovered samples will be evaluated at the assessment stage and some may be disposed of. Only flots will be retained for inclusion within the project archive.

### 3.1.3 Human Remains

- Any human remains which are encountered will initially be left *in situ* and reported to the HEPAO and the appropriate authorities (the Coroner), where appropriate. Where their removal is necessary this will comply with the relevant Government regulations. If burials are encountered their legal status must be ascertained and recording and/or removal must comply with the legal guidelines.
- Where human remains are not to be removed their physical security will be ensured by backfilling as soon as possible after recording.
- Where human remains are to be removed this must be done with due reverence and in accordance to current best practice and legal requirements. The site will be adequately screened from public view. Once excavated human remains will not be exposed to public view.

## POST FIELDWORK STAGES

(To be reviewed in light of results from the fieldwork)

### 3.2 Archiving

Following review with the HE Project Manager, the results from the fieldwork will be collated as an archive. This will involve washing and cataloguing of finds, the indexing and cross-referencing of photographs, drawings and context records. Initial processing of palaeoenvironmental samples will be undertaken. This will involve flotation of bulk samples to recover plant macrofossils and other remains.

- All finds and samples, etc will be stored in a proper manner (being clearly labelled and marked and stored according to HE guidelines).
- All records (context sheets, photographs, etc) will be ordered, catalogued and stored in an appropriate manner (according to HE guidelines).
- A summary of the results will be presented to the Historic Environment Planning Advice Officer, Cornwall Council.
- The site archive and finds will initially be stored at HE premises and transferred to the Royal Cornwall Museum and the RCM conditions for archives will be followed. The RCM will be notified of the commencement of the project and included in discussions for sampling and disposal as appropriate.

### 3.3 Report production

The results from the watching brief will be presented in a concise archive report. Copies of the report will be distributed to the Client, the County Archaeologist and the main archaeological and local record libraries.

This will involve:

- producing a descriptive text;
- producing maps and line drawings;

- selecting photographs;
- report design;
- report editing;
- dissemination of the finished report
- deposition of archive and finds in the Royal Cornwall Museum, Truro

The archive report will have the following contents:

- Summary
- Introduction - background, objectives, methods
- Results - factual description of the results of the various aspects of the project, with separate sections as necessary for discussion/interpretation
- Discussion - discussion of the interpretation of the results, highlighting information gained on a chronological or thematic basis
- Archive - a brief summary and index to the project archive
- Illustrations - general location plan
  - detailed location plans to link fieldwork results to OS map
  - selected plans and section drawings (as appropriate)
  - finds drawings (if appropriate)
  - photographs (if appropriate)

An OASIS record will be made for the project.

### 3.4 Assessment

On completion of the archive report an assessment stage will be carried out. This will involve assessment of structural and stratigraphic data and artefactual material, etc. The outline of the assessment report, and the work required to produce it will also be determined.

- Liaise with specialists (environmental samples, radiocarbon dating and artefacts, etc) to arrange for assessment of the potential for further analysis and reporting.
- Send off artefacts (ceramics, etc) to the appropriate specialist for further study.
- Send off residues from residues from environmental samples to appropriate specialists.
- Sort out and send off suitable material for radiocarbon dating.
- Project design for further analyses and publication.

### 3.5 Academic/Final publication

In the event of significant remains being discovered there may be a further stage of analyses leading to formal publication. This will involve the analysis of structural and stratigraphic data, artefacts, and environmental samples to be governed by an updated project design agreed with the Historic Environment Planning Advice Officer, Cornwall Council. The scope and final form of the report will be reviewed; for example, in addition to an archive report the results should be published in an academic journal (eg, *Cornish Archaeology*) and would include:

- Discussion of the significance of the results in relation to Local, Regional and National research objectives.

#### **4. Monitoring**

- This written scheme of investigation will need to be approved by the planning authority.
- The recording exercise will be monitored. The Historic Environment Planning Advice Officer should be informed 1 week in advance of the intention to start the recording.
- HE Projects will liaise with the Historic Environment Planning Advice Officer to advise on the programme and progress of work, and agree site meetings as required.
- A summary of the results will be presented to the Historic Environment Planning Advice Officer within 1 month of the completion of the fieldwork.
- In the event that significant remains are encountered an updated project design will be agreed with the Historic Environment Planning Advice Officer.

#### **5. Project Staff**

An experienced archaeologist employed by HE will carry out the archaeological fieldwork. The report will be compiled by experienced archaeologist(s) employed by HE.

Relevant experienced and qualified specialists will be employed to undertake appropriate tasks during the assessment and analysis stages of the project.

The project will be managed by a manager who is a Member of the Institute for Archaeologists, who will:

- Take responsibility for the overall direction of the project.
- Discuss and agree the objectives and programme of each stage of the project with project staff, including arrangements for Health and Safety.
- Monitor progress and results for each stage.
- Edit the project report.

#### **6. Timetable**

The archiving and archive report will be completed within 12 months of the ending of the excavations. The timetable for further stages of assessment, analyses and publication will be agreed with Historic Environment Planning Advice Officer in the light of the results of the excavations.

#### **7. Health and safety during the fieldwork**

##### **7.1 Health and safety statement**

Historic Environment is within the Environment, Planning and Economy Directorate of Cornwall Council. The HE projects team follows Cornwall Council's *Statement of Safety Policy*.

**Prior to carrying out any fieldwork HE will produce a Health and Safety plan.**

#### **8. Insurance**

As part of Cornwall Council, HE is covered by Public Liability, Employers Liability Insurance, and Professional Negligence Insurance.

#### **9. Standards**

HE follows the Institute for Archaeologists' Standards and Code of Conduct and is a Registered Archaeological Organization.

As part of Environment, Planning and Economy Directorate of Cornwall Council, the HE projects team has certification in BS9001 (Quality Management), BS14001 (Environmental Management), OHSAS18001 (Health, Safety and Welfare), Investors in People and Charter Mark.

## **10. Copyright**

Copyright of all material gathered as a result of the project will be reserved to the Environment, Planning and Economy Directorate of Cornwall Council. Existing copyrights of external sources will be acknowledged where required.

This project design is the copyright of Historic Environment, Cornwall Council.

Use of the material will be granted to the client.

## **11. Freedom of Information**

All information gathered during the implementation of the project will be subject to the rules and regulations of the Freedom of Information Act 2000.

## **12. References**

Cornwall County Council, 1996. *Cornwall landscape assessment 1994*, Report prepared by CAU and Landscape Design Associates, Cornwall County Council, Truro

Parkes, C, 2012. *Castle an Dinas Quarry, Ludgvan, Cornwall, Cornwall Archaeological Assessment*. HE report 2011R094

## **Notes**

- It is assumed that the client will supply the mechanical excavator.
- The client will be responsible for the Health and Safety arrangements onsite (including fencing, etc), and it is assumed that welfare and storage facilities will be made available.
- The post excavation programme (assessment, analysis and reporting) will need to be reviewed in the light of the fieldwork.
- This Written Scheme of Investigation does not include an estimate.

17/9/13

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