

Appendix 4 – Detailed methodology

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1.0 Introduction

1.1 This appendix details the full methodology proposed for the investigation of Bailey's Hill Barrow located in the Seven Sisters Country Park, Friston. The proposed works, detailed in the project design (Ward Archaeology, 2022), will comprise a photogrammetric SUA/Drone survey of the extant barrow, an Historic England level 3 topographic survey followed by the full excavation of the barrow in order to investigate the monument in line with the brief set out by the East Sussex County Council Archaeology Team. This document will detail the proposed method for each piece of investigative work alongside the proposed recording scheme for features, sections, and plans.

2.0 Photogrammetric Survey

2.1 Drones, otherwise referred to as unmanned aerial vehicles (UAV) or Small Unmanned Aircraft (SUA), the preferred term used by Historic England and referred to in the project design (Historic England, 2022) are a useful tool for landscape surveys.

2.2 These small vehicles are particularly useful for carrying out surveys in areas which are difficult or dangerous to access, which is why this method has been proposed for the clifftop survey of the barrow.

2.3 The SUA work will be carried out by an appropriately qualified pilot and in line with Civil Aviation Authority (CAA) guidance CAP722. (Civil Aviation Authority, 2020).

2.4 Historic England (HE) produced guidance in 2017 aimed at demonstrating best practice for photogrammetric techniques in cultural heritage management (Historic England, 2017). This guidance will be adhered to during this project.

2.5 The basic procedure for photogrammetric survey, regardless of the method of data capture (i.e., SUA carried digital camera, terrestrial camera mount), is the same. Overlapping images of the subject, in this instance the upstanding barrow, will be captured. Tie points on the image are matched and camera orientations reduced, a dense point cloud is generated comprising all of the possible matches between the images projected in a 3D space. At this stage secondary products can be produced such as Digital Terrain Models (DTM) or Digital Surface Models (DSM) (Historic England, 2017, pp. 4-6).

- 2.6 Given the current land use of the barrow site being grassland a DSM will be the most appropriate as photogrammetry can only provide 'first return' images i.e., it cannot see beneath crop or tree cover as is found in Digital Terrain Models (Historic England, 2017, p. 53).

3.0 Topographic (Earthwork) Survey

- 3.1 Topographic surveys are defined as the controlled measurements of natural and man-made landscape features (Andrews, et al., 2015, p. 91).
- 3.2 The barrow will be recorded at 1:20 scale using the conventions detailed in the *Metric Survey Specifications*, section 6.6 (Andrews, et al., 2015, p. 97).
- 3.3 Computer Assisted Design (CAD) drawings will be produced for publication.

4.0 Full Barrow Excavation – Quadrant Method

- 4.1 Excavation is a destructive exercise, at the end of which only the written record and project archive is all that is left of the monument (Bahn & Renfrew, 2012, p. 105).
- 4.2 The aim of the excavation process is 'to identify, define, uncover, date and – by understanding transformation processes – interpret each archaeological context on site.' (Drewett, 2011, p. 100).
- 4.3 There are multiple methods of excavation which can be utilised in the process of an archaeological excavation. Methods include the box-grid process begun by General Pitt-Rivers as well as open-area excavation espoused by Philip Barker, are popular methods in commercial UK archaeology (Bahn & Renfrew, 2012, p. 106).
- 4.4 Due to the nature of the barrow excavation and the desired brief resulting in its total excavation the quadrant method has been proposed. The aim of this method is to expose features within the barrow while retaining baulks for stratigraphic analysis (Bahn & Renfrew, 2012, p. 117).
- 4.5 The excavation will be conducted using hand tools. As the site is located within a SSSI (Ward Archaeology, 2022), all turf will be put to one side, separate from other excavated material, and monitored as per the advice of Natural England. At the end of the excavation turf will be returned to its original state.

- 4.6 The baulks will be kept at 0.75m wide in order to accurately record the stratigraphy of the barrow's construction as well as allow for the safe removal of spoil.
- 4.7 It is hoped that the excavation of the barrow will identify the encircling ditch created during the barrow's construction. In order to better understand the constructional method of the ditch, 1m wide slots will be excavated every 2m around the ditch. These will be recorded in section prior to being fully excavated.
- 4.8 All archaeologically significant artefacts, ecofacts and samples will be retained and, where possible, related to the contexts from which they derived. Sensitive materials will be stored in appropriately stable conditions. Finds will be temporarily stored by Ward Archaeology in stable conditions. All finds, except those deemed to be Treasure, will remain the property of the South Downs National Park as the landowner.

5.0 Recording and Plans

- 5.1 Following discussions with the East Sussex County Council archaeological advisor it was agreed that all cut features will be subject to 100% excavation initially by section.
- 5.2 All deposits will be recorded using standardised context recording sheets, scale drawing, photography, and site notebooks. All deposits will be recorded individually and assigned context numbers. Significant deposits revealed during the excavation will be recorded by scale drawing at no less than 1:20 scale.
- 5.3 The baulks will be recorded in section at 1:10 scale.
- 5.4 Section and plan drawings will be produced of all uncovered features. A multi-feature plan will be produced for any features recorded beneath the barrow as appropriate (Drewett, 2011, p. 113). Sections will be recorded at 1:10 and plans will be drawn to 1:20.
- 5.5 The focus of the excavation of the barrow is to identify any buried land surface which may be present. To this end, the barrow will be reduced to the presence of the buried surface or the natural, whichever is reached first. Any recorded land surface will be recorded in plan after which the Historic England scientific advisor, Jane Corcoran, will be contacted for further advice.
- 5.6 Bulk sampling will be undertaken of cut features to identify suitable palaeoenvironmental contexts that may be suitable for radiocarbon dating and flotation.
- 5.7 Column sampling will be undertaken to identify pollen remains. Advice will be sought from the HE scientific advisor where necessary.

5.8 Human remains are highly likely to be encountered during the excavation of the barrow. Any encountered inhumation burials will be planned individually at 1:10 scale.

5.9 Skeleton recording forms will be used in the field alongside site photography, following cleaning, to allow for accurate office-based drawing to be produced if necessary (Adkins & Adkins, 1989, p. 80).

6.0 Site Photography

6.1 A photographic record of the entire site will be produced before, during and following excavation (Drewett, 2011, p. 131). It is hoped that a video diary can also be kept during the investigation.

6.2 All features will be digitally photographed in RAW format.

7.0 Post-Fieldwork Methodology

7.1 One of the aims of the proposed investigation is to identify suitable layers for scientific dating. These included Carbon-14 dating (C14) for human remains and ecofacts such as charcoal and pollen.

7.2 Optical Spectral Luminescence (OSL) will be aimed to analyse any buried soils found during the reduction of the barrow.

7.3 All finds, written, drawn, and photographic records will be organised and made readily accessible so that an appropriate post-excavation programme can be prepared (Drewett, 2011, p. 137).

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