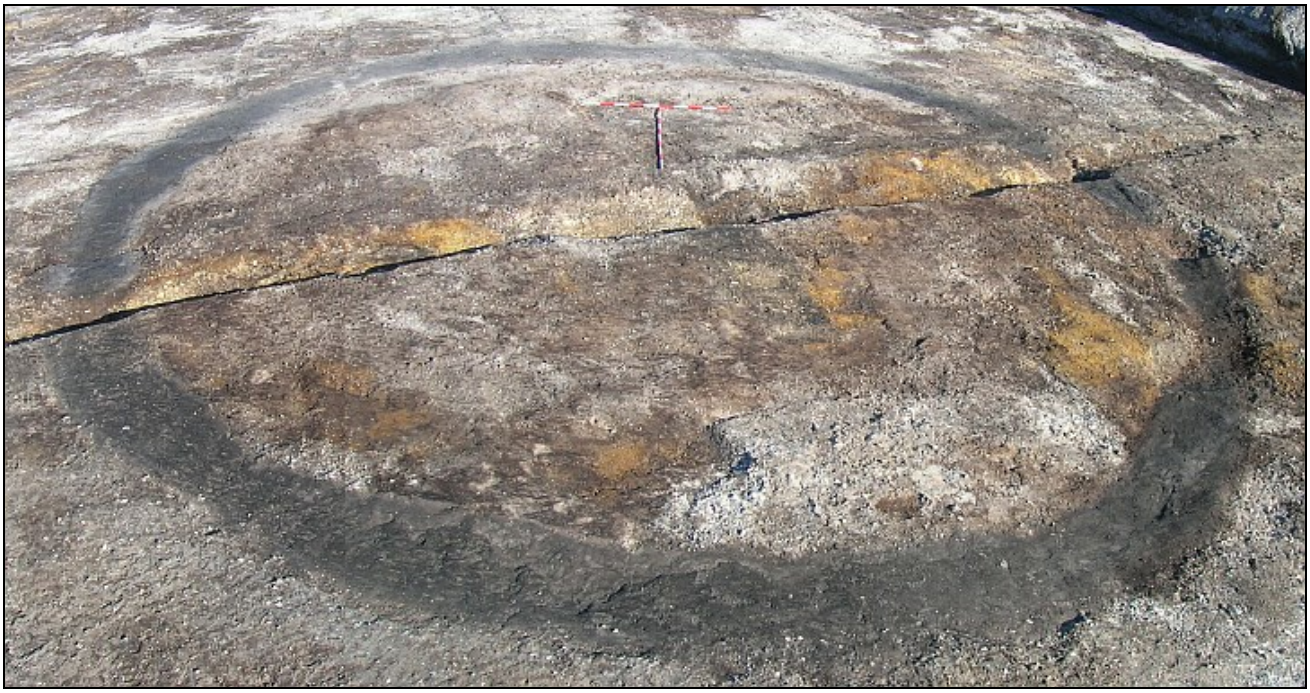
Scheduled Monument SM 29061, Binnegar Quarry, East Stoke, Dorset

An Archaeological Excavation



context one
ARCHAEOLOGICAL SERVICES LTD

Scheduled Monument SM 29061, Binnegar Quarry, East Stoke, Dorset

An Archaeological Excavation

for

RPS Planning, Transportation and Environment
on behalf of their clients SITA Holdings Limited

by

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Scheduled Monument Consent: HSD/9/2/8583 issued 29/09/06

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Front cover image: Elevated view of the ring ditch from the south after hand cleaning © Context One Archaeological Services 2009

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Non-Technical Summary

Context One Archaeological Services Ltd. (COAS) carried out an archaeological excavation of a Scheduled round barrow (SM 29061) at Binnegar Quarry, East Stoke, Dorset (centred on NGR SY 89272 87740) (hereafter referred to as the Site) in October and November 2006. The project was commissioned and funded by RPS Planning, Transportation and Environment on behalf of their clients SITA Holdings Limited. The excavation represents the final stage of a programme of archaeological works, which included a geophysical survey and an archaeological trench evaluation undertaken in 2002, the latter of which confirmed the location of the ring ditch of the barrow. The excavation was requested by Dorset County Council on the advice of their Senior Archaeologist, Steven Wallis, as a condition of granting planning permission for the development works. The archaeological excavation was monitored by Mr. Wallis and by English Heritage's Vanessa Straker (Regional Science Advisor) and Phil McMahon (Inspector of Ancient Monuments).

The excavation established that an uninterrupted ring ditch had been cut into the underlying natural horizon of periglacial sands and gravels. A vestige of the barrow mound was noted during the archaeological evaluation, where a layer of dark humic soil was thought to have formed part of the original turf construction. Prior to the excavation, un-monitored soil stripping operations undertaken by the quarry operators had inadvertently removed all trace of the mound and any cremation or inhumation burials that may have been associated with it. A modern drainage channel was also found to bisect the barrow.

During the excavation the ring ditch was equally divided around its circumference into seventeen 1m wide sections. The excavation of these demonstrated that the ditch had undergone at least three distinctive phases of silting through wind and water action. This comprised some initial collapse of the ditch sides and silting shortly after the ditch had been cut, followed by two further stages of infilling and silting. Some of the slots excavated were seen to contain a distinct gravelly horizon, possibly representing the slippage of a former gravel capping to the mound. Mounds of turf-stack construction with a capping of bedrock material seem to have been particularly popular in Dorset during the early and middle Bronze Age.

Bulk soil samples were taken from the ring ditch fills and a central pit feature. The primary and secondary fill samples produced only one plant macrofossil (derived from a species of heather), while the tertiary fill samples produced no plant macrofossils. Five monolith column samples were taken by Dr. Scaife (Southampton University) from ditch sections during the course of the excavation. The pollen retrieved from the lower fills demonstrated that the barrow was constructed in a heathland landscape, with areas of transitional woodland including oak and hazel. The vegetation of the area had been highly influenced by human activity, with woodland clearance leading to the deterioration of the soils and development of heathland, which would have been maintained by fire and grazing. There is also evidence that arable cultivation was being undertaken nearby.

The upper, tertiary, fill of the ditch probably derived from heath vegetation and detritus washed or blown into the ditch while it still remained as a hollow on the ground surface. Radiocarbon dating of charcoal recovered from the tertiary fills of two excavated slots produced calibrated dates lying within the late Bronze Age to early Iron Age and the middle Iron Age.

The evidence suggests that the barrow had been constructed with a core of stacked turves and that a gravel capping was deposited on its surface, similar to the make-up of a barrow in the nearby Worgret Heath Group. The construction of the barrow probably took place during the early to middle Bronze Age, after initial deforestion and the evolution of heathland in the area. The results of the radiocarbon analysis show that the ditch was no longer being maintained by the middle Iron Age.

Apart from the ring ditch, only one other feature was encountered during the excavation and this comprised a pit located in the central area of the barrow. Evidence of grooved marks at the base of the pit, and the presence of non-native fir pollen, suggests that this may have been excavated in recent times by a mechanical toothed digging bucket.

1. Introduction

1.1 Context One Archaeological Services Ltd. (COAS) carried out an archaeological excavation of a Scheduled round barrow (**SM 29061**) at Binnegar Quarry, East Stoke, Dorset (centred on NGR SY 89272 87740; **Figure 1**) (hereafter referred to as the Site) between the 24th of October and the 21st of November 2006. The project was commissioned and funded by RPS Planning, Transportation and Environment (RPS), on behalf of their clients SITA Holdings Ltd.

1.2 The excavation was requested by the Planning Authority (Dorset County Council) on the advice of their Senior Archaeologist, Mr. Steven Wallis, as a condition of granting planning permission to extend the area of extraction of an active sand quarry to include land that contains the barrow. RPS issued a *Written Scheme of Investigation* (RPS 2006) and, at their request, COAS subsequently issued a *Project Design for an Archaeological Excavation: Scheduled Monument SM29061, Binnegar Quarry, East Stoke, Dorset* (COAS 2006), which provided a strategy for the archaeological works. This was submitted to and approved by Steven Wallis (Senior Archaeologist, Dorset County Council) and Phil McMahon (Inspector of Ancient Monuments, English Heritage) prior to the commencement of the excavation.

1.3 The excavation was monitored by Steven Wallis (Senior Archaeologist) at Dorset County Council and Vanessa Straker (Regional Science Advisor) and Phil McMahon (Inspector of Ancient Monuments) of English Heritage, with Site visits on 26th October, 10th November and 16th November 2006.

1.4 The request for the archaeological work follows advice given by Central Government as set out in *Planning Policy Guidance Note 1* (PPG1), *General Policy and Principles*, 1997, and *Planning Policy Guidance: Note 16* (PPG16), issued by the DoE in 1990. The recommendation also conforms to Environment Policy G of the *Bournemouth, Dorset and Poole Structure Plan* (adopted July 2004), and Policy CA11 of the *Purbeck Local Plan Final Edition* (November 2004).

1.5 The round barrow is a Scheduled Ancient Monument (**SM 29061**) and benefits from statutory protection under the terms of the Ancient Monuments and Archaeological Areas Act, 1979 (as amended). Following an archaeological evaluation conducted in September 2002, and the conclusion that the monument had suffered considerable recent deterioration, it was agreed by English Heritage that the site of the monument could be included within the quarry extension. However, it was decided that a programme of detailed excavation and recording, requiring Scheduled Monument Consent, would be required prior to any extraction in the vicinity of the monument. Consent for the archaeological excavation was subsequently granted (ref. HSD/9/2/8583 issued on 29/09/06) (see **Appendix 7**).

1.6 In 1997, a review by English Heritage of Scheduled Monuments in the area (DCMS 1997) described the barrow **SM 29061** as a mound 12m in diameter and approximately 0.60m in height. No trace of any ditch was visible. Their assessment of significance stated that:

> *"despite some reduction by ploughing, the bowl barrow….survives comparatively well and will contain archaeological and environmental evidence relating to the monument and the landscape in which it was constructed"*

1.7 The excavation represents the final stage of a programme of archaeological works, which commenced with a geophysical survey and was followed by a trench evaluation. The detailed geophysical survey was undertaken in 2002 by GSB Prospection in the area of barrow **SM 29061** and did not reveal any features of the type that would usually be associated with a round barrow, such as a ring ditch or internal and external pits (Adam and Valentin 2002:2).

1.8 During the subsequent archaeological trench evaluation undertaken in September 2002 by AC Archaeology (Scheduled Monument Consent: HSD 9/2/4779 pt 1), Trench 6 traversed the barrow

(**Figure 2**), and located the ring ditch. This feature was continuous within the trench, measuring 1.6m in width, with a projected diameter of 9m. The ditch was not excavated during the evaluation stage of these works, but the fill was recorded as a dark brown, sandy silt with occasional gravel and heathstone fragments (Adam and Valentin 2002: 5). No artefacts were recovered during the evaluation.

1.9 During the evaluation, the lower part of the ploughsoil in the vicinity of the barrow was seen to comprise dark brown humic silt, extending over a distance of 12m. This darker material was interpreted as the ploughed out remains of the barrow mound, and the soil variation seen within it suggested that the mound had been of turf-stack construction. A 30 litre environmental sample was taken by AC Archaeology from the disturbed mound material but this was not processed and no analysis was undertaken. The evaluation concluded that the monument had suffered considerable denudation through modern ploughing since being recorded as a 0.6m high mound by English Heritage in 1997 (Adam and Valentin 2002; DCMS 1997).

1.10 More recently, the monument and its environs were inadvertently subjected to a programme of soil stripping by the quarry operators. This involved the excavated spoil being mounded in a substantial linear bund that was subsequently found to partly overlay the barrow. In front of the bund, on its southern side, a drainage ditch was also excavated to carry surface water away, which was later found to have bisected the barrow.

1.11 The stripping of the topsoil site was noticed by Pete Addison, English Heritage Historic Environment Field Adviser. Subsequently a site meeting was held involving the quarry owners and the quarry operators, Pete Addison, Paul Tomlin (Dorset County Council's Technical Adviser on Minerals and Waste sites) and Steven Wallis. At that meeting the approximate area of the barrow was identified and the quarry owners agreed that this area would be fenced off until an archaeological investigation had been undertaken.

2. Definition and objectives of an excavation

2.1 An archaeological excavation is defined by the Institute for Archaeologists (IfA) (formerly the Institute of Field Archaeologists) as:

> *"…a programme of controlled, intrusive fieldwork with defined research objectives, which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design." (IFA rev.1999)*

2.2 The purpose of an excavation is also defined by the IfA as:

> *"…to examine the archaeological resource within a given area or site within a framework of defined research objectives, to seek a better understanding of and compile a lasting record of that resource, to analyse and interpret the results, and disseminate them." (IFA rev.1999)*

Site Specific Aims and Objectives

2.3 The overall aim of the detailed archaeological excavation of **SM 29061** was to provide further data that would aid in the understanding of the nature and date of the remains of this round barrow prior to the total removal of the location of the monument as a result of extraction.

2.4 More specifically, it was hoped that the results of the excavation and subsequent analyses of material would assist the comprehension of the construction and use of heathland barrows, and the environment within which they were constructed. The South West Archaeological Research Framework (SWARF) *Research Agenda* (Webster 2007: 269-294) recommends the use of targeted

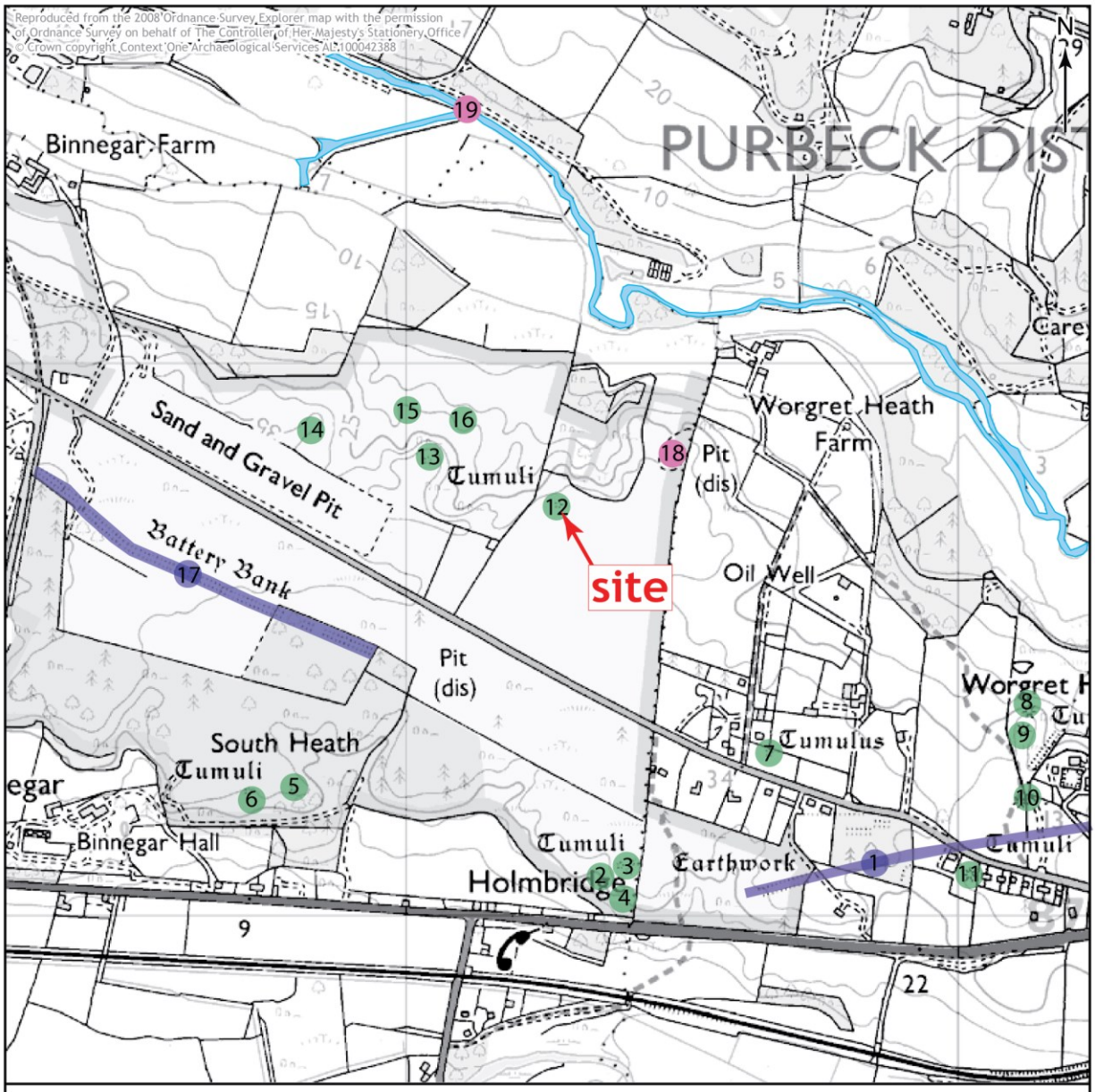
pollen analysis to investigate issues such as the timing and duration of Bronze Age woodland clearance and the development of heathland (Research Aim 18a). It also and asks for more radiocarbon dates to be obtained from cremated human bone, even if there are no direct material associations (Research Aim 16f) and suggests that more study is needed of the view of Bronze Age round barrow cemeteries as 'communal monuments' (Research Aim 54j).

2.5 In addition, the excavation aimed to investigate the area immediately surrounding the round barrow, to locate any potential associated features. The SWARF *Resource Assessment of the Later Bronze Age and Iron Age* states that urned and unurned cremations are often found to the south and east of Bronze Age barrows in Dorset (Fitzpatrick 2007: 124).

3. Site location, topography and geology

3.1 Binnegar Quarry is situated approximately 3.5km to the west of Wareham in Dorset and on the north-eastern side of Puddletown Lane, which extends from Worgret Heath to Bere Heath (**Figures 1** and **2**; NGR: SY 89272 87740). The scheduled barrow **SM 29061** is situated on the northern edge of a plateau that overlooks the valley of the River Piddle or Trent to the north. The Site is situated on gently sloping ground at *c.* 30-33m above Ordnance Datum (aOD), with a steep drop to the north, and was formerly an arable field before the extension of the quarry.

3.2 According to the British Geological Survey (2001), the underlying geology of the area comprises of the Barton, Bracklesham and Bagshot Beds, which are a series of sands, clays and gravels. These are overlain by sands and gravels derived from Plateau Gravel and river terrace drift deposits (Adam and Valentin 2002: 2) and the soils of the area are characterised as freely draining, very acidic sandy and loamy soils (Multi Agency Geographic Information for the Countryside (MAGIC), 2009).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Binnegar Farm
PURBECK DIST
Sand and Gravel Pit
Battery Bank
Tumuli
Pit (dis)
Worgret Heath Farm
Oil Well
site
Tumulus
South Heath Tumuli
Binnegar Hall
Holmbridge
Earthwork
Late Neolithic - Late Bronze Age
Post-Medieval - Modern
Unknown
(All sites are listed in Appendix 1)
0
1km
DORSET
PROJECT TITLE
Binnegar Quarry, East Stoke, Dorset.
FIGURE TITLE
Site setting showing known archaeological background
SCALE
as shown
PROJECT CODE.
COAS/EXC/06/BQD
FIGURE NO.
1

previous archaeological interventions *(Adam & Valentin 2002)*
Scheduled Monument
area of excavation
unscheduled mounds

0 250m

PROJECT TITLE Binnegar Quarry, East Stoke, Dorset.		
FIGURE TITLE Detailed site setting showing location of previous archaeological intervention		
SCALE as shown	*PROJECT CODE.* COAS/EXC/06/BQD	*FIGURE NO.* **2**

4. Archaeological background

4.1 The archaeological background for the Site has been drawn principally from secondary sources. This includes records held by Dorset County Council as part of their Historic Environment Record (HER; unique numeric identifiers referred to below in bold type prefixed by HER, with Scheduled Monument numbers prefixed by SM) and other published and unpublished sources, including the *Written Scheme of Investigation* (RPS 2006), the *Assessment of Potential for Analysis* (COAS 2007) and the relevant chapters of the South West Archaeological Research Framework's *The Archaeology of South West England* (Webster 2007). The principal items and areas of interest are located on **Figure 1** and a summary of this information is displayed as a table in **Appendix 1**.

Prehistoric (500,000BC – AD43)

4.2 Round barrow **SM 29061** is one of a group of five tumuli that form the Farm Heath Barrow Group (**HER 6011061**). Three of these barrows align along the northern edge of the plateau (**Figure 1** numbers 12-14; **Figure 2**), of which barrow **SM 29061** is the easternmost. These three barrows project northwards into the valley of the Piddle or Trent via spurs. Two further possible round barrows (**Figure 1** numbers 15-16) are situated further north-east, but these sites are not scheduled and are thought to represent natural gravel mounds. In heathland areas of the region bowl barrows are often found in short linear alignments, or in pairs.

4.3 Round barrow **SM 29061** is described in the Scheduling Record (DCMS 1997) as follows:

> *"The barrow, which was recorded by the Royal Commission on the Historic Monuments in England (1970), has a mound composed of earth, sand and turf, with maximum dimensions of 12m in diameter and approximately 0.6m in height. The mound is surrounded by a ditch from which material was quarried during the construction of the monument. The ditch has become infilled over the years, but will survive as a buried feature 1.5m wide."*

4.4 There are many other examples of round barrows in the area, including a group of ten at Worgret Heath (**Figure 1** numbers 8-10) and a group at South Heath (**Figure 1** numbers 5-6).

4.5 Burial mounds, including a variety of different types of barrow, were constructed to commemorate or celebrate the dead. Bowl barrows, the most common form, appeared from the early Neolithic period (*c.*3000 BC onwards) and continued to be built until the late Bronze Age (*c.*600BC), being especially popular during the late Neolithic and early Bronze Age (Monuments Protection Programme1988: 2). These monuments were designed to be highly visible within the landscape, frequently located on high ground, and later intrusive burials are often found within the mounds, demonstrating that they were frequently re-used during the Prehistoric, Roman and Medieval periods.

4.6 During the Bronze Age, the landscape became more domesticated as the agricultural revolution took hold. Between *c.* 1500 and 1000 BC the lowlands were characterised by enclosed fields and settlements of wooden or stone roundhouses, with evidence for regular shifting of settlements and seasonal land-use in some upland areas (Fitzpatrick 2007: 117-119). River valleys were utilised extensively, woodland was gradually cleared to create pasture and arable fields and in the late Bronze Age cattle appear to have been a means of displaying status (Fitzpatrick 2007: 119, 125). By the middle Bronze Age, heathland had developed in parts of south Dorset, which was managed by grazing and fire (Straker *et al.* 2007: 114).

4.7 Barrow mounds have been recorded at between 3m and 65m in diameter and 0.5m to over 6m in height. Most bowl barrows are generally round in plan and it is possible that a rope tied to a stake was utilised to attain the regular shape. In his 1871 article about round barrows, John Thurnham describes the barrows of Dorset as generally *the segment of a sphere thrown up with great precision* (Thurnham 1871: 304).

4.8 Most bowl barrow mounds consist of a core of topsoil or turf with a layer of bedrock or stones overlying it, although the exposed stone would have been quickly overrun by soil and vegetation without frequent maintenance (Monuments Protection Programme 1988:3). A round barrow, probably dating to the middle Bronze Age, excavated at Wyke Down, Cranborne Chase, had a chalk capping that displayed evidence of weathering, demonstrating that the chalk had been initially left exposed (French *et al.* 2000: 63).

4.9 Bowl barrows often have associated ditches, particularly in Wessex, which are generally between 2m and 5m in width and up to 3m deep, varying in size in relation to the size of the mound (Monuments Protection Programme 1988:3). These are usually set close to the edge of the mound and are generally continuous around it, with steep-sided or U-shaped profiles.

4.10 Round barrows are a relatively common monument type in Dorset and Grinsell's supplement (1982) to his earlier survey (1959) recorded a minimum of 2,233 round barrows, of which *c.* 94% were bowl barrows. Many barrows represent a single burial event, be it one individual or several, whilst others represent a number of burials over a period of up to several centuries and some show evidence of later extension or redesign, for example at Amesbury G71 in Wiltshire (Monuments Protection Programme 1988:2).

4.11 Burials within barrows, both inhumations and cremations, were either placed on the natural ground surface or, more commonly, placed in pits excavated before construction of the mound over them. The pits can be very shallow and are often less than 1.5m deep (Monuments Protection Programme 1988: 3).

4.12 During the middle Bronze Age, cremation burials became more frequent. Bowl barrows in this area are often associated with cremation burials within urns of the Deverel-Rimbury tradition, although inhumations (with Beakers, or food vessels, or neither), and cremations with Collared Urns or un-urned, have also been seen in Dorset bowl barrows. At Knighton Heath near Poole, un-urned cremations were found alongside 60 Deverel-Rimbury urns sealed by a small bowl barrow contained within a penannular ditch of *c.* 12m external diameter (Petersen 1981).

4.13 Inhumation and cremation burials without accompanying barrows, known as flat burials, were also undertaken during the Bronze Age, although they are less detectable in the landscape and as such are not as well studied as barrow burials. Substantial cemeteries of urned cremation burials have been found in association with groups of round barrows. At Simons Ground near Wimborne (White 1982) over 300 cremation burials were uncovered in 15 distinct clusters. Most of these cremations were situated close to a group of small round barrows and some of them had been inserted into the barrow mounds, illustrating that the barrows predated the cremation burials.

4.14 Flat burials that are not associated with barrows or other monuments are also known and the deposition of disarticulated skulls in water-related contexts, including rivers and wetlands, appears to be a relatively common mortuary practice throughout Britain during the middle and late Bronze Age (Fitzpatrick 2007: 124). In the late Bronze Age and Iron Age mortuary practices became more varied, with an increasing tendancy for burial of certain parts of the body becoming more common than cremation or formal inhumation burials, and there is evidence to suggest that excarnation (exposure of the body to scavengers) was practiced (Fitzpatrick 2007: 126).

4.15 It is not known whether the individuals selected to be commemorated by a barrow were of special status, possibly the family of a respected member of the community. The richer early Bronze Age burials of the 'Wessex Culture' are usually found in less common barrow types, including bell barrows and disc barrows (Piggott 1938; Woodward 2000). However, in Dorset bowl barrows have been found to contain artefacts associated with the second phase of the 'Wessex Culture', Wessex II, apparently linked to a change in mortuary practice from a preference for cremation burial to inhumation burial.

4.16 Occasionally bowl barrows have been seen to contain no burials, such as at Canford Heath, Poole (Horsey and Shackley 1980), possibly acting as 'cenotaph' graves and commemorating someone whose remains could not be recovered for burial.

Roman (AD43 - AD450)

4.17 To the south of the Site, on the other side of Puddletown Lane, is a linear, earthen, defensive dyke known as Battery Bank (**SM 29059**; **HER 6011050**). This is undated but is thought to be Romano-British in origin (Adam and Valentin 2002).

Post-Medieval (AD1547 – AD1800)

4.18 Two post-medieval sites lie within the vicinity of the Site. One is a former clay pit on Farm Heath (**HER 6011058**) and the other is a bridge known as Uncle Tom's Bridge (**HER 6024026**).

5. Methodology

5.1 The programme of archaeological work was carried out in accordance with the *Standards and Guidance for Archaeological Excavation* published by the Institute for Archaeologists (IfA) in 1994 (revised 1999). COAS adhered to the *Code of Conduct* issued by the IfA in 1985 (revised 2000), and *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (1990, revised September 2000), at all times during the course of the investigation. Current Health and Safety legislation and guidelines were followed on site.

5.2 The Senior Archaeologist at Dorset County Council and the English Heritage Inspector of Ancient Monuments and Regional Science Advisor were kept fully informed of the fieldwork schedule.

Survey

5.3 The initial phase of investigation comprised a detailed survey to accurately locate the site of the round barrow. A georeferenced digital map of the study area in AutoCad, indicating the location of the barrow, was used to obtain a National Grid Reference for the monument. A base point was established in the environs of the monument using a Leica 500 GPS capable of 1-2cm accuracy. The presumed centre of the barrow was then accurately located using a rover receiver pre-programmed with the National Grid Reference obtained from the digital map.

Machine-excavation

5.4 Following the establishment of the probable barrow location, a tracked, 360° excavator equipped with a toothless bucket was used to remove a section of bund overlying the barrow and its immediate environs. Mechanical excavation continued in controlled horizontal spits until archaeological deposits or features were encountered, or natural strata were reached, whichever was soonest. An area 10m beyond the outer edge of the ditch was also machine excavated, which produced a total investigation area of *c*.30m x 30m (**Figure 2**). Spoil generated from the machine excavation was deposited at least 5m from the edge of the Site and the machine was not allowed to track across any areas after the overburden had been stripped from them.

5.5 The Site was then hand cleaned to establish the possible survival of the barrow and the presence of any outlying associated features or deposits. The area was fenced off with orange netlon barrier fencing, supported on road pins at appropriate intervals, to prevent any further inadvertent damage to the Site.

Hand-excavation

5.6 Following hand cleaning, manual excavation of exposed features was carried out. The ring ditch was equally divided around its circumference into seventeen 1m wide sections separated by baulks to achieve a 50% ditch sampling strategy. Excavation was carried out using both mattock and trowel.

5.7 A central feature was also half sectioned, using mattock and trowel, to produce a representative cross-section and expose the profile of the southern terminal end.

5.8 All archaeological features and deposits were recorded using standard COAS *pro-forma* context recording sheets and planned on dimensionally stable media at a scale of 1:40, with sections drawn at a scale of 1:10.

5.9 A photographic record of the excavation was prepared and involved the use of digital images and monochrome photographs. This included images illustrating, in both detail and general context, the principal features discovered and oblique and vertical views of the Site from a tower scaffold at pre-excavation and post-excavation stages. The photographic record also comprised working shots to illustrate more generally the nature of the archaeological operation mounted.

5.10 Artefacts collected from archaeological features and deposits were bagged using a combination of the Site code and context numbers.

5.11 All archaeological remains were levelled to a temporary Site bench mark relating to Ordnance Datum, established using a Leica 500 GPS system. This data was combined with *Rinex* data obtained from the Ordnance Survey and was then vectored onto a digital Ordnance Survey map in AutoCAD 2002, and exported as .DXF files to Adobe Illustrator CS2 for desktop publishing.

5.12 On the conclusion of excavation and recording no reinstatement was required.

Environmental sampling strategy

5.13 Bulk soil samples of up to 40 litres in volume were taken by the excavation team from each ditch fill of every excavated section, with the exception of three sections that had been severely affected by recent truncation (slots [104], [113] and [138]) because of the high potential for contamination. Fills (116), (134) and (160) were sampled at a lower volume (10 litres, 20 litres and 10 litres respectively) due to their limited thicknesses. The fills of the central feature were also sampled.

5.14 Column samples from the exposed face of four representative ditch sections and the central feature were collected in monolith tins by Dr. Rob Scaife (Department of Geography, Southampton University) (**Figure 3**).

6. Results

6.1 The deposits and features encountered during fieldwork are listed and described in **Appendix 2.** A detailed plan of the excavated features is shown in **Figure 3** and drawings of each profile are illustrated in **Figure 4**. In the text, context numbers for cuts appear in square brackets, e.g. [1004]; layer and fill numbers appear in standard brackets, e.g. (1002).

Soil sequence and geology

6.2 The topsoil across the Site had largely been inadvertently removed by the quarry operators prior to this excavation, removing the vestige of the mound and any possible associated burials. A layer of silty sand (100) had recently formed across the area, largely deposited by wind and water action. The underlying natural horizon (110) comprised variable deposits of periglacial sands and gravels of differing hues.

Archaeological features

6.3 A total of seventeen sections, each of approximately 1m in width, were excavated across the line of the barrow ring ditch. Each excavated section was assigned unique cut and fill numbers, which comprised: [104] (**Figure 4 Section 14**); [109] (**Section 1**; **Plate 1**); [113] (**Section 15**); [117], (**Section 2**); [122] (**Section 16**); [125] (**Section 17**); [126] (**Section 3**; **Plate 2**); [129] (**Section 4**); [135] (**Section 13**; **Plate 6**); [138] (**Section 12**); [139] (**Section 5**; **Plate 3**); [140] (**Section 6**); [147] (**Section 7**; **Plate 4**); [151] (**Section 8**); [155] (**Section 9**); [156] (**Section 11**) and [157] (**Section 10**; **Plate 5**).

6.4 The ring ditch had been bisected by a recently cut drainage ditch and exhibited varying degrees of truncation, with depths measuring from 0.17m to 0.48m. The profiles of the excavated sections varied according to the degree of truncation but were generally wide with concave sides and rounded or slightly flattened bases, although some sections exhibited convex or stepped sides.

6.5 The earlier evaluation (Adam and Valentin 2002) concluded that it was likely that the central mound had been substantially ploughed out in antiquity although it appeared to have suffered further denudation since an English Heritage field inspection in 1997. At this time, the mound was recorded as being 0.6m high although, just five years later, it was observed during the evaluation as being only represented by a layer of darker humic soil that extended for a distance of some 12m across the evaluation trench. Evidence of this layer was largely removed itself during soil stripping operations by the quarry operators prior to this excavation.

6.6 The sections excavated in the ring ditch contained either two or three fills, which, for ease of comparison, are referred to here as primary, secondary and tertiary fills.

6.7 Several of the ditch sections exhibited a distinct primary fill, varying between 0.05m and 0.35m in thickness, which was stratigraphically below the two main silting fills seen throughout the ditch. This was typified by the generally dark (Munsell 10YR 2/1), sandy fills (108) (**Figure 4 Section 14**); (116) (**Section 1**; **Plate 1**); (132) (**Section 3**; **Plate 2**); (141) (**Section 12**); (146) (**Section 5**; **Plate 3**); (150) (**Section 7**; **Plate 4**); (154) (**Section 8**); (160) (**Section 11**) and (165) (**Section 10**; **Plate 5**).

6.8 The profile of **Section 10** showed that the primary fill (165) was continuous with a layer of material that ran towards the centre of the barrow, although it was very much truncated and only a small area of this material survived *in situ*. The initial phase of infilling of the ditch appears to have taken place soon after the ditch was constructed and probably involved some collapse of the ditch sides and of the mound itself, possibly through localised animal activity in addition to natural erosion.

6.9 Following the primary filling seen in some sections of the ditch, a secondary phase of silting occurred through further erosive processes. The secondary fills comprised (103) (**Section 14**); (112) (**Section 15**); (115) (**Section 1**; **Plate 1**); (119) (**Section 2**); (121) (**Section 16**); (124) (**Section 17**); (128) (**Section 3**; **Plate 2**); (131) (**Section 4**); (134) (**Section 13**; **Plate 6**); (137) (**Section 12**); (143) (**Section 5**; **Plate 3**); (145) (**Section 6**); (149) (**Section 7**; **Plate 4**); (153) (**Section 8**); (159) (**Section 11**); (162) (**Section 9**) and (164) (**Section 10**; **Plate 5**).

6.10 These secondary silting fills measured between 0.10m and 0.48m in thickness and generally consisted of dark, greyish brown or yellowish brown (Munsell 10YR 5/2, 10YR 3/2, 10YR 3/3, 10YR 5/4) silty sands with multiple laminations of sand and gravel horizons, indicative of numerous distinct events, with the dark lenses possibly representing stabilisation horizons.

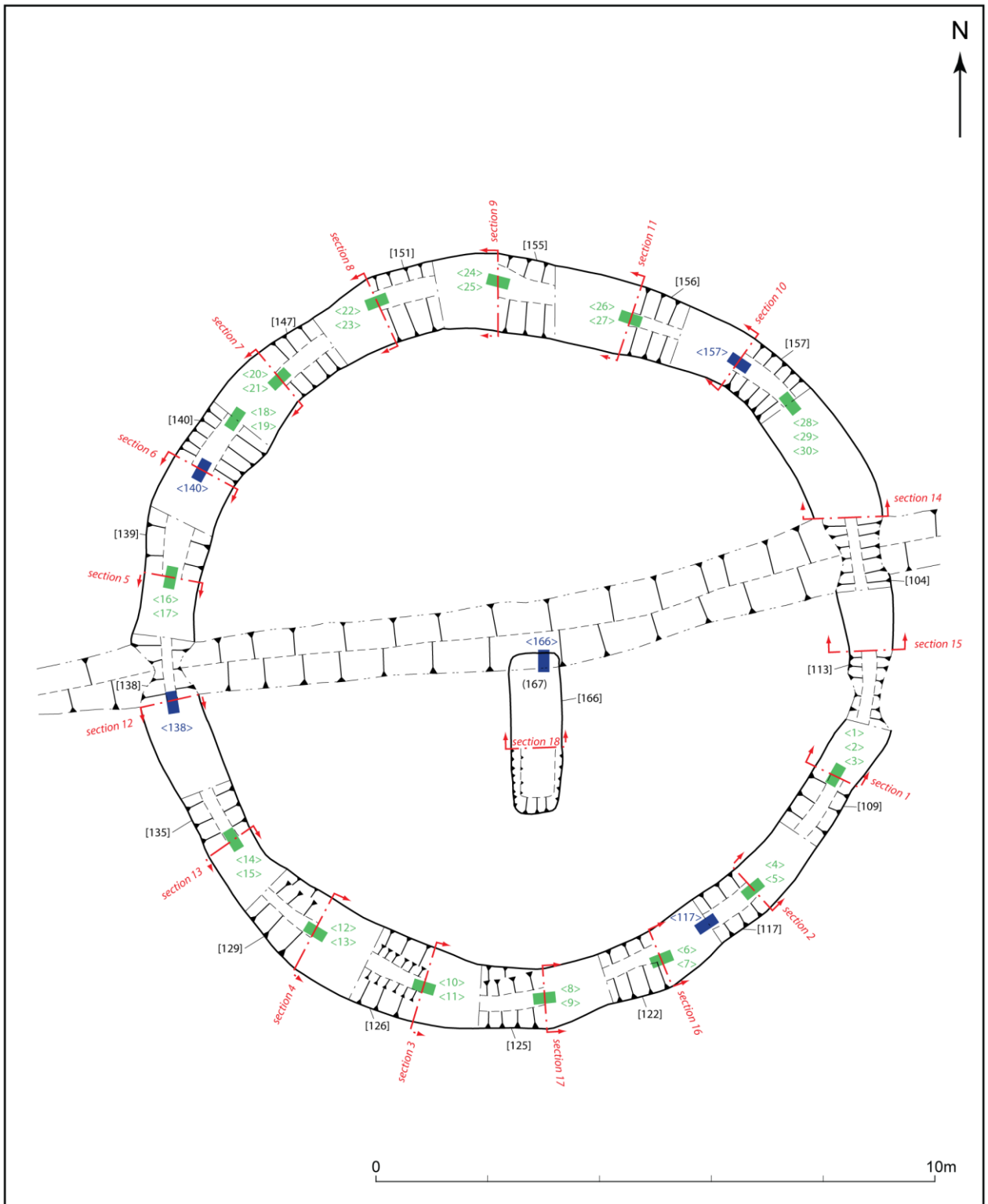
6.11 The final stage of sedimentary build-up was exemplified by a further well-defined horizon of fills, forming the uppermost levels of the ring ditch. These included fills (102) (**Section 14**); (111) (**Section 15**); (114) (**Section 1**; **Plate 1**); (118) (**Section 2**); (120) (**Section 16**); (123) (**Section 17**); (127) (**Section 3**; **Plate 2**); (130) (**Section 4**); (133) (**Section 13**; **Plate 6**); (136) (**Section 12**); (142)

(**Section 5**; **Plate 3**); (144) (**Section 6**); (148) (**Section 7**; **Plate 4**); (152) (**Section 8**); (158) (**Section 11**); (161) (**Section 9**) and (163) (**Section 10**; **Plate 5**).

6.12 These tertiary fills consisted of soft, very dark, grey or brown (Munsell 10YR 2/1, 10YR 3/1, 10YR 2/2) sandy silts and silty sands, again displaying evidence of multiple lamination. The fills varied in thickness between 0.10m and 0.40m.

6.13 Some of the slots excavated through the ring ditch were seen to contain a distinct gravelly horizon, either in the top of the secondary fill or at the base of the tertiary fill. These included slots [109] (**Plate 1**), [122], [125], [126] (**Plate 2**), and, to a lesser extent, slots [135] (**Plate 6**) and [147] (**Plate 4**). The slots displaying the gravelly horizon were largely located around the southern part of the ring ditch, possibly representing the slippage of a gravel capping.

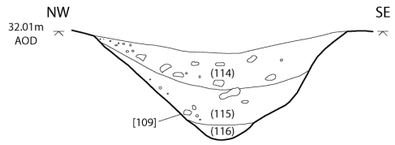
6.14 One other potentially archaeological feature was revealed during this excavation. This consisted of a pit [166] (167) measuring 3.0m long and 1.20m wide, located just south of the centre of the round barrow (**Figure 3**). The pit was rectangular in plan with rounded corners and had a grooved, undulating base and near vertical sides (**Section 18**). The fill (167) consisted of mixed black, grey and yellowish brown silty sand with sand and gravel lenses. Although this pit was interpreted as having been excavated by the toothed bucket of a mechanical excavator (possibly as some form of geotechnical test-pit), bulk soil samples were taken from the fill and a column sample was collected by Dr. Scaife from the exposed face of the section to confirm its age.



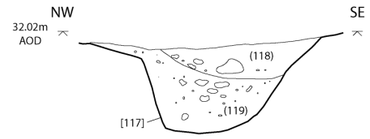
section drawing location	
(000)	context number
[000]	cut number
<000>	sample number
	location of column samples
	location of bulk samples

PROJECT TITLE: Binnegar Quarry, East Stoke, Dorset.		
FIGURE TITLE: Detailed site plan		
SCALE: as shown	PROJECT CODE.: COAS/EXC/06/BQD	FIGURE NO.: 3

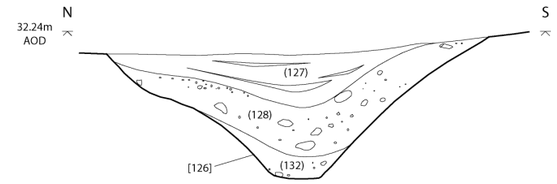
Section 1



Section 2



Section 3



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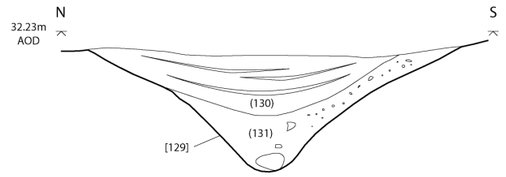
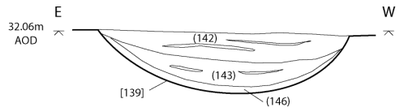
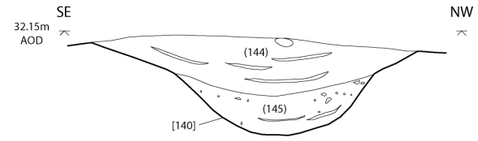


Section 5



Section 6



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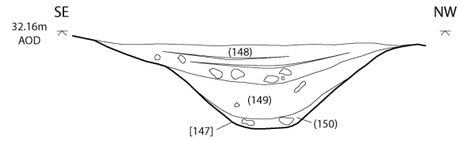

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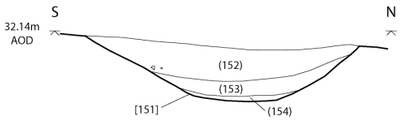

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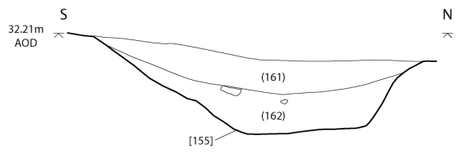

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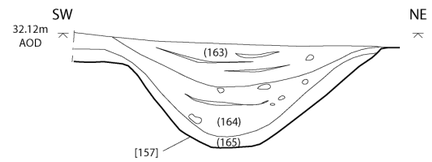

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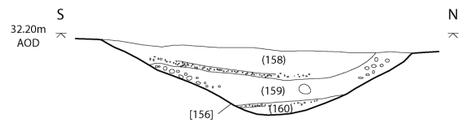

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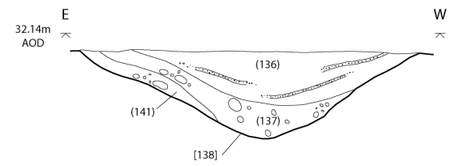
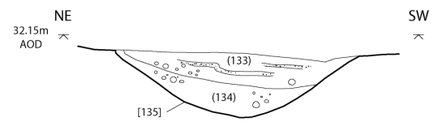
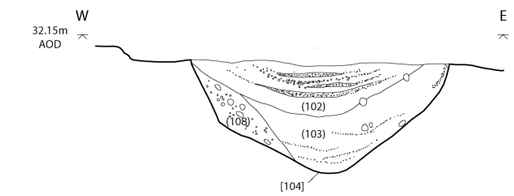


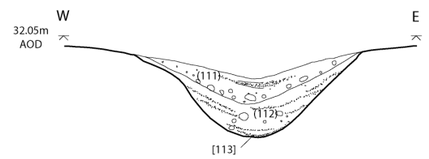
Section 13



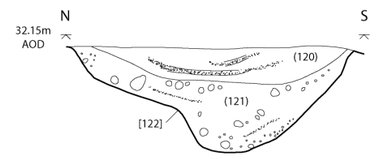
Section 14



Section 15



Section 16



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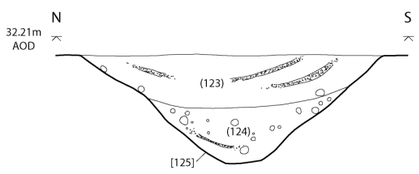

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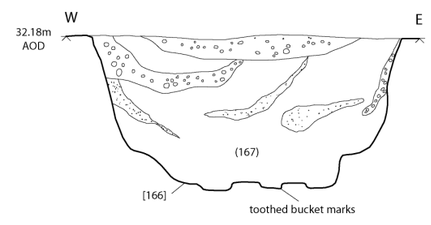

(000) context number

[000] cut number

XX.Xm AOD height above ordndnce datum (AOD)

sand

gravel

tiny pebbles

0 1m

PROJECT TITLE
Binnegar Quarry, East Stoke, Dorset.

FIGURE TITLE
Section drawings

SCALE	*PROJECT CODE.*	*FIGURE NO.*
as shown	COAS/EXC/06/BQD	**4**

Plate 1. Northeast-facing view of slot [109], Section 1

Plate 2. East-facing view of slot [126], Section 3

Plate 3. South-facing view of slot [139], Section 5

Plate 4. Southwest-facing view of slot [147], Section 7

Plate 5. Northwest-facing view of slot [157], Section 10

Plate 6. South-facing view of slot [135], Section 13

7. Finds and Environmental Analysis

7.1 The only artefacts retrieved during the excavation were three possible flint flakes. However, after cleaning and analysis, these were deemed to be natural fragments rather than worked flint and were discarded.

Environmental analysis

Introduction

7.2 Deposits were assessed for their palaeoenvironmental potential in accordance with the methodology (**Section 5**). A total of 31 bulk soil samples and 5 column samples were collected from the ditch sections and central pit feature during this excavation (**Appendix 3**).

7.3 Five bulk soil samples, representing the fills from two ditch sections, were processed in a flotation tank for assessment of the survival of plant macrofossils and charcoal deposits for potential radiocarbon dating. These comprised samples <10> and <11> from **Section 3** and <28>, <29> and <30> from **Section 10**. Following the assessment stage of this project, a further eight samples were processed (samples <2>, <3>, <7>, <15>, <17>, <21>, <25> and <27>). On the recommendations of Dr. Scaife (COAS 2007: 14-15) the potential for recovering further palaeoenvironmental material was considered low and the remaining bulk soil samples were not processed.

7.4 Mesh sizes of 250 microns for flots and 500 microns for heavy residues were used. The residues were allowed to air dry and then scanned for bone, artefacts and heavy archaeobotanical material before being bagged.

Plant macrofossil analysis

7.5 An assessment of the flots was carried out by Dr. Rob Scaife. Neither of the tertiary fills processed (samples <10> and <28>) produced any macrofossils, although a quantity of charcoal was collected. No charcoal was evident in the three basal ditch fill samples assessed (samples <11>, <29> and <30>) and only a single plant macrofossil attributed to *Calluna* (ling), a heathland flora, was recovered. The additional samples processed subsequent to the initial assessment (samples <2>, <3>, <7>, <15>, <17>, <21>, <25> and <27>) produced no further charcoal or plant macrofossils.

Charcoal

7.6 A sample of the charcoal recovered from the processed bulk samples was assessed by Imogen van Bergen-Poole (**Appendix 4**). It included woody fragments from dicotyledonous and monocotyledonous angiosperms and ferns and some material possibly representing oak, lime and poplar or willow, but identification was difficult due to the poor preservation and small size of some fragments. It was recommended that some of the charcoal retrieved was suitable for radiocarbon dating.

Radiocarbon age determination

7.7 Two samples of charcoal from two different excavated sections of the ditch (samples <28> and <10>) were analysed by Dr. Alan Hogg of The University of Waikato Radiocarbon Dating Laboratory (**Appendix 5**). These samples were from tertiary fills (163) and (127) respectively, which were located at broadly opposite sides of the ring ditch. The results produced calibrated dates of 2544 ± 35 BP (*c.* 800 – 540 BC) for sample <28> and 2185 ± 30 BP (*c.* 370 – 170 BC) for sample <10>, which date to the late Bronze Age to early Iron Age and the middle Iron Age respectively.

Pollen analysis

7.8 Five column samples were taken for pollen analysis by Dr. Scaife during the course of the excavation (**Appendix 3**, **Table 2**). Four of these were obtained from sedimentary fills at various points around the ring ditch (**Figure 3**) and comprised: Column <117> from Section 2; Column <138> from Section

12; Column <140> from Section 6 and Column <157> from Section 10. The fifth sample, Column <166>, was taken from the central cut feature thought to be a modern robber trench.

7.9 The column samples were initially assessed and it was determined that pollen and spores were of sufficient quantity and state of preservation in the lower fills of the ditch to warrant full analysis (COAS 2007). Dr. Scaife's report of this subsequent analysis is included in **Appendix 6** of this report and summarised here. Three of the five column samples were analysed in detail (samples <117> and <157> from the ring ditch and <166> from the pit feature) and a fourth sample (<140> from the ditch) was assessed but did not undergo further examination.

7.10 The samples from the ring ditch yielded consistent results. Pollen was largely absent from the upper parts of the tertiary fills of the ring ditch, more abundant in the lower parts of the tertiary fills and declined slightly in the sandy secondary and primary fills. The lowest fills of the ditch represent material that was washed into it from the surrounding ground surface soon after construction and therefore contain a mixture of pollen from the time prior to the construction of barrow and the period immediately following construction.

7.11 In column sample <117> pollen from heathland plant species, mainly heather and ling, was dominant throughout the sample, with the exception of the uppermost 12cm of soil, which contained no pollen. Bilberry and allseed were also present, the latter of which is typical of damp, bare acidic soils. Oak, alder and hazel or sweet gale were the most common tree and shrub pollens in this sample, with occasional traces of birch, pine, elm, lime and ash. Grasses and ribwort plantain were the main examples of the few herbs represented, with occasional cereal pollen. Spores from bracken, ferns and sphagnum bog moss were also present

7.12 Sample <157> displayed an absence of pollen in the uppermost 14cm of the profile. Pollen from heather and ling was again dominant throughout the rest of the sample, with trees and shrubs including hazel or sweet gale, alder, oak and occasional birch, pine, elm and lime. High levels of grass pollen were present, with slightly higher levels in the lower half of the profile, but cereal pollen was rare. Ribwort plantain was evidenced and the range of herb species present became more diverse towards the top of the sample profile. Bracken and occasional other ferns and liverwort were also recorded.

7.13 The pollen assessment of sample <140> yielded results that were consistent with the results of the samples that were subjected to full analysis. Pollen was again largely absent in the upper part of the profile, but was abundant in the lower sandy fills. Heather and ling were dominant throughout the sample, becoming more common towards the top of the profile. Conversely, pollen from trees and shrubs became less frequent further up the profile, comprising largely of alder, hazel or sweet gale, small amounts of oak (less frequent than in the other samples) and occasional birch, pine, lime, elm and buckthorn.

7.14 Grasses became more common in the upper part of the profile and occasional ribwort plantain and plants of the aster/daisy/sunflower family, including thistle and dandelion, and a single cereal pollen grain were also present. Ferns, particularly bracken, were more frequent in the basal fill of the ditch.

7.15 Column sample <166> was taken from the fills of the central pit feature, thought to represent recent disturbance. The analysis showed a similar pollen assemblage to the samples taken from the ring ditch fills, with some variations characteristic of a more modern provenance. Pollen numbers were higher in the upper part of the fills and generally declined further down the profile, with the exception of a single level. Again heathers were dominant throughout the sequence and the species of trees and shrubs represented comprised alder and hazel or sweet gale, a small amount of oak and occasional birch, pine, elm, lime and beech with a single fir pollen grain. The latter is not a native

tree and indicates that the fill dates from after the introduction of fir to this country in the 17th century. Occasional cereal pollen was noted and the low levels of herb pollen present included dandelion, ribwort plantain and grasses, with infrequent goosefoots or oraches, charlocks, bindweed and plants of the aster/daisy/sunflower family. The basal fills seen in sample <166> contained higher levels of pollen from dandelion type plants and lower amounts of oak pollen, but the presence of fir pollen is the clearest indication that the central pit [166] was excavated and backfilled after the 17th century, and is not contemporary with the prehistoric ring ditch.

7.16 Evidence from other sites in the region suggests that this type of low-lying land with sandy soils would have been dominated by lime and oak woodland prior to the Neolithic and Bronze Age deforestation for agriculture. Soil deterioration and podzolisation (leaching) would have followed the initial woodland clearance, which may have been as early as the Mesolithic period, and the resultant acidic soils were ideal for the development of heathland.

7.17 Pollen would only have been preserved in the more acidic soils that developed after woodland clearance, so the survival of pollen in the lower fills of the ring ditch demonstrates that some deforestation had occurred in this area. The species represented indicate that the barrow was constructed in a landscape where these leached soils were established and heathland, dominated by heather and ling, had already developed. The results illustrate a landscape of heathland vegetation, maintained by fire and grazing, with transitional woodland comprising oak and hazel and the presence of alder in the adjacent river valley. The results are consistent with those from other Bronze Age barrow sites in southern Britain and similar pollen profiles have been obtained from early Bronze Age barrows at Chicks Hill (Ashbee and Dimbleby 1958), Knighton Heath, Poole (Case 1952), Canford Heath, Poole (Horsey and Shackley 1980), East Holme (Wessex Archaeology 1991) and Golden Cap (Papworth 1993).

7.18 The upper, tertiary, fills of the ditch were seen to be highly humified and were typical of the degraded sandy soils and vegetation associated with heathland. They probably developed from heath vegetation and detritus washed or blown into the ditch while it still remained as a hollow on the ground surface. Highly humified deposits like this are usually favourable for pollen preservation, but the lack of pollen in the uppermost part of the tertiary fills of the ring ditch could be related to the exposure of the Site, good drainage or the highly acidic nature of the deposits causing degradation.

7.19 The radiocarbon dates obtained from the tertiary fills of the ring ditch correspond well with the results of the pollen analysis. The woodland in the area would have been dominated by lime, which was largely cleared by the middle Bronze Age during what was known as the 'Lime Decline'. The pollen from the lower fills of the ring ditch shows a strong heathland component and a lower importance of lime, demonstrating that the barrow was constructed after the initial transition from woodland to heathland.

7.20 The presence of a low amount of pollen from cereal species and associated arable weeds, which increase further up the profile, indicates that cultivation was being undertaken shortly after the barrow was constructed and increased over time. However, the acidic heathland soils surrounding the barrow would not have been conducive to growing arable crops and the pollen represented is likely to have been blown in from slightly further afield.

8. Discussion and conclusions

8.1 The excavation of barrow SM29061 at Binnegar Quarry established that an uninterrupted ring ditch had been cut into the underlying natural horizon of periglacial sands and gravels. Observations of the site in the late 1990s suggested that the ring ditch was associated with a central mound, with an embanked area 0.60m high and a postulated diameter of 12m. A trench was excavated across the

barrow during an archaeological evaluation excavation in 2002, which demonstrated that the ploughed-out remains of the mound were represented by a layer of dark humic soil that probably formed part of the turf-stack construction.

8.2 Prior to the excavation, un-monitored soil stripping work by the quarry operators had inadvertently removed all trace of the mound and any possible cremation or inhumation burials associated with it. A modern drainage channel was also found to bisect the barrow.

8.3 During the excavation, the ring ditch was equally divided around its circumference into seventeen 1m wide sections separated by baulks to reflect a pre-determined 50% ditch sampling strategy. The excavation of these slots demonstrated that the ring ditch had undergone at least three distinctive phases of silting through wind and water action. This comprised some initial collapse of the ditch sides and silting shortly after the ditch had been cut, followed by two further stages of infilling and silting. These patterns of silting episodes were consistent throughout the ditch.

8.4 At Binnegar Quarry some of the slots excavated through the ring ditch were seen to contain a distinct gravelly horizon, either in the top of the secondary fill or at the base of the tertiary fill. The slots displaying the gravelly horizon were largely located around the southern part of the ring ditch, possibly representing the slippage of a gravel capping, where material from the mound fell into the surrounding ditch.

8.5 Several sources mention the presence of a layer of natural bedrock material deliberately deposited on the surface of barrow mounds, including a barrow of the nearby Worgret Heath Group where a gravel capping was recorded (Wainwright 1965). Horsey and Shackley (1980: 34) mention that it was common practice to cap the mound with gravel excavated from the ditch during the construction of heathland barrows. This capping may have served to make the barrows more visible, being of a contrasting colour to the surrounding landscape.

8.6 The Worgret Heath bowl barrow, *c.* 1 km south-east of the Site, was excavated in 1964 (Wainwright 1965). The mound was seen to consist of a turf stack, typical of the heathlands where stone is not readily available, with a gravel capping. Around the less disturbed perimeter, the mound material was seen to overlie a thin layer of black, peaty soil, probably representing the former land surface that the mound was constructed over. This old land surface was approximately 25-30cm higher than the modern ground surface, having been protected from weathering and erosion by the mound. A cremation burial in a Deverel-Rimbury urn, dating to around 1400BC, was found in a small pit beneath the mound.

8.7 More recently, two of three round barrows underwent an archaeological evaluation excavation at Squirrel's Cottages, East Holme (NGR: SY 9066 8528; Wessex Archaeology 1991), situated on a spur overlooking the Frome Valley. They were constructed of turves topped with a thin layer of sand derived from the material excavated from the ditches. One of the excavated barrows had a ditch containing a horizon of large flint cobbles at the base of a layer that was seen to be continuous with the lowest layer of the mound. The second excavated barrow had a similar horizon of cobbles within the ditch, at the base of a layer that was continuous with the outermost edge of the mound.

8.8 Mounds of turf-stack construction with a capping of bedrock material seem to have been particularly popular in Dorset and the surrounding areas during the early and middle Bronze Age, between *c.* 2500 and *c.* 1300 cal BC (Wessex Archaeology 1991: 24), and other examples include Chick's Hill (Ashbee and Dimbleby 1958) and Turners Puddle Heath (Piggott and Dimbleby 1953).

8.9 The pollen analysis of samples from the ring ditch yielded consistent results. The pollen retrieved from the lower fills demonstrates that the barrow was constructed after the initial transition from woodland to heathland in this area. The landscape comprised of heathland with areas of transitional woodland including oak and hazel. The vegetation of the area had been highly influenced by human

activity, with woodland clearance leading to the podzolisation, or deterioration, of the soils and development of heathland, which would have been maintained by fire and grazing. These results are consistent with those from other Bronze Age barrow sites in southern Britain, although the process of podzolisation occurred at different times in different areas.

8.10 There is also evidence that alder grew in the adjacent valley and that arable cultivation was being undertaken nearby. However, the acidic heathland soils surrounding the barrow would not have been conducive to growing arable crops and the pollen represented is likely to have originated from slightly further afield.

8.11 The upper, tertiary, fill of the ditch had probably developed from heath vegetation and detritus washed or blown into the ditch while it still remained as a hollow on the ground surface. Radiocarbon dating of charcoal recovered from the tertiary fills of two excavated slots produced calibrated dates lying within the late Bronze Age to early Iron Age and the middle Iron Age.

8.12 The remnants of the ditch excavated during this project represent only the surviving, lower, part of the original ditch, the upper part of which has been removed by various processes including ploughing and soil stripping prior to the excavation. However, the evidence suggests that the tertiary fills recorded here represent a period when the barrow was no longer being maintained. It is possible that the charcoal recovered from the tertiary fills was residual, but the results of the radiocarbon dating show that the ditch was still partly open until at least the middle Iron Age.

8.13 Apart from the ring ditch, one other feature was encountered during the excavation and this comprised a north-south aligned pit located towards the centre of the barrow. Evidence of grooved marks at the base of the pit, combined with the results of pollen analysis of the fill, suggests that this was cut and backfilled relatively recently and may have been excavated by a mechanical excavator fitted with a toothed bucket.

Conclusions

8.14 As anticipated, the excavation confirmed that the barrow had suffered a high degree of truncation. Any vestige of the barrow mound and associated burials were completely removed and the ring ditch had been truncated. It is not possible to measure the level of truncation, although the excavation of a similar barrow in the nearby Worgret Heath Group revealed the ditch to be almost 3m wide and up to 0.90m deep; compared to 1.30m wide and up to 0.48m deep at Binnegar Quarry.

8.15 Although the acidic soils associated with heathland areas such as this promote the preservation of pollen grains, they are contrastingly poor for the preservation of bone and molluscs. This suggests that, even if the barrow had not suffered severe truncation, it would be unlikely for any human remains to have been recovered during the excavation, with the possible exception of cremated bone, which survives better than un-burnt bone in adverse soil conditions.

8.16 The evidence suggests that the barrow had been constructed with a core of turf stacks and that a gravel capping was deposited on its surface, similar to the construction of the barrow excavated in the Worgret Heath Group. Although no traces of the barrow mound survived at Binnegar Quarry, pollen retrieved from the basal fills of the ring ditch places the construction of the barrow firmly in the Bronze Age and likely in the early to middle Bronze Age, after the initiation of deforestion and the evolution of heathland in the area. Radiocarbon dating of charcoal from the surviving upper fills of the ring ditch show that it was no longer being maintained by the middle Iron Age.

8.17 Despite the high degree of truncation, the primary, secondary and tertiary fills of the ditch did not show any evidence of contamination and a high confidence rating is attached to the results of this project. The results of the pollen analysis add to our knowledge of vegetation development in the region and the tertiary ditch fills produced examples of carbonised plant material suitable for

radiocarbon dating that helped place the barrow into a robust chronological context that could equally root the evolution of similar monuments in the region.

9. The Archive

9.1 The site archive is currently held at the offices of Context One Archaeological Services Ltd. and consists of: 31 monochrome prints; 150 colour digital images in .jpg format; 64 context records; various registers and recording sheets; and 19 site drawings (18 sections and 1 post-excavation plan) on 7 sheets of stable drawing film.

9.2 The archive will be prepared to comply with guidelines set out in *First Aid for Finds* (Watkinson and Neal 2001), *Standards in the Museums Care of Archaeological Collections* (Museum and Galleries Commission 1992) and *Management of Archaeological Projects 2* (English Heritage 1991). It is proposed that the archive will be deposited with Dorset County Museum within 12 months following the submission of this report.

9.3 Copies of the excavation report will be deposited with:

RPS Planning, Transport and Environment
Mallams Court
18 Milton Park
Abingdon
Oxon
OX14 4RP

Historic Environment Service
Environmental Services Directorate
County Hall
Colliton Park
Dorchester
Dorset
DT1 1XJ

English Heritage
South West Region
29 Queen Square
Bristol
BS1 4ND

National Monuments Record
Kemble Drive
Swindon
SN2 2GZ

9.4 An electronic version of the report will also be made available to view online or download from the COAS website.

9.5 A condensed version of the report will be submitted for publication in the journal *Proceedings of the Dorset Natural History and Archaeology Society* by June 2010.

9.6 Following the completion of the report, an OASIS form (*Online Access to the Index of Archaeological Investigations)* will be completed and submitted.

10. COAS Acknowledgements

10.1 Context One Archaeological Services Ltd. would like to thank RPS Planning, Transport and Environment for commissioning this project and the staff of Raymond Brown Construction Ltd. for their kind assistance throughout the course of the investigation; Steven Wallis (Senior Archaeologist, Dorset County Council) for his curatorial advice; Phil McMahon and Vanessa Straker for their guidance as the English Heritage Inspector of Ancient Monuments and Regional Science Advisor respectively. Thanks are also due to Gordon Le Pard of Dorset County Council for providing access to the Sites and Monuments Record and to the staff of the Dorset History Centre for their help with locating research material.

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Appendix 1. Dorset Historic Environment Record report for archaeological events within the environs of the Site

Map reference (Figure 1)	Name / Description	Location	NGR	HER no.	Scheduled Monument no.	Date
1	Arne: Earthwork of the Worgret Dykes group	Arne	SY 900 871	6 002 048 A		Unknown
1	Worgret Dykes: linear earthworks,	Arne	SY 901 872	6 002 048 B		Unknown
1	Worgret Dykes: linear earthworks,	Arne	SY 900 872	6 002 048 D		Unknown
2	Holmebridge: Barrows	East Stoke	SY 893 870	6 011 035	SM 29060	Late Neolithic – Late Bronze Age
3	Holmebridge: Barrows	East Stoke	SY 894 871	6 011 037	SM 29060	Late Neolithic – Late Bronze Age
4	Holmebridge: Barrows	East Stoke	SY 894 870	6 011 036	SM 29060	Late Neolithic – Late Bronze Age
5	South Heath: Bowl barrow	East Stoke	SY 887 872	6 011 033	SM 29062	Late Neolithic – Late Bronze Age
6	South Heath: Bowl barrows	East Stoke	SY 887 872	6 011 032	SM 29062	Late Neolithic – Late Bronze Age
6	South Heath: Bowl barrows	East Stoke	SY 887 872	6 011 034	SM 29062	Late Neolithic – Late Bronze Age
7	Bronze Age bowl barrow	Arne	SY 896 872	6 002 028	SM 29079	Late Neolithic – Late Bronze Age
8	Worgret Heath Group: Ditched Bowl Barrow	Arne	SY 901 873	6 002 034	SM 29077	Late Neolithic – Late Bronze Age
9	Worgret Heath Group: Ditched Bowl Barrow	Arne	SY 901 873	6 002 033	SM 29077	Late Neolithic – Late Bronze Age
10	Worgret Heath Group: Ditched Bowl Barrow	Arne	SY 901 872	6 002 032	SM 33261	Late Neolithic – Late Bronze Age
11	Wareham: Round Barrow	Arne	SY 900 870	6 002 029		Late Neolithic – Late Bronze Age
12-16	Farm Heath: bowl barrows group	East Stoke	SY 89100 87800	6 011 061		Late Neolithic – Late Bronze Age
12	Piddle Valley: Bowl barrow	East Stoke	SY 8926 8774	6 011 049	SM 29061	Late Neolithic – Late Bronze Age
13	Piddle Valley: Bowl barrow	East Stoke	SY 8902 8782	6 011 046	SM 29057	Late Neolithic – Late Bronze Age
14	Piddle Valley: Bowl barrow	East Stoke	SY 8883 8788	6 011 045	SM 29058	Late Neolithic – Late Bronze Age
15	Farm Heath Group: Bowl barrow	East Stoke	SY 890 879	6 011 047		Late Neolithic – Late Bronze Age
16	Farm Heath Group: Bowl barrow	East Stoke	SY 891 879	6 011 048		Late Neolithic – Late Bronze Age
17	Battery Bank East of Binnegar Lane	East Stoke	SY 884 877	6 011 050 E	SM 29059	Unknown
18	Farm Heath: Clay pit	East Stoke	SY 894 878	6 011 058		Post Medieval / Modern
19	Uncle Tom's Bridge	Wareham St. Martin	SY 891 884	6 024 026		Post Medieval / Modern
N/A	Affpuddle Heath: Bowl barrow	Affpuddle	SY 8149 9243	6 001 058	SM 28361	Late Neolithic – Late Bronze Age

Appendix 2. Context summary

Context No.	Type	Description	Dimensions			Section No.	Sample No.	Stratigraphical relationships
			Length	Width/ Diameter	Thickness/ Depth			
100	Layer	Modern overburden. Friable, black (10YR 2/2) silty sand with occasional rounded flint fragments<0.02m	-	-	Up to 0.15m	-		Overlies all archaeological deposits
101	-	Context not used	-	-	-	-	-	-
102	Fill	Tertiary fill of slot [104] in ring ditch. Soft, black (10YR 2/1) sandy silt with occasional angular & rounded flint gravel <0.02m diameter. Product of several episodes of silting up (seasonal or fluvial)			0.40m	14		Fill of [104]; Above (103); Below (100)
103	Fill	Secondary fill of slot [104] in ring ditch. Soft, dark brown (7.5YR 3/3) silty sand with occasional rounded gravel <0.02m diameter. Formed when upcast from the excavation of the ditch was washed back into it or washed from the central mound			0.48m	14		Fill of [104]; Below (102); Above (108)
104	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a sloping, rounded base		0.93m	0.48m	14		Filled by (102), (103), (108); Above (110); Below (108)
105	-	Context not used	-	-	-	-	-	-
106	-	Context not used	-	-	-	-	-	-
107	-	Context not used	-	-	-	-	-	-
108	Fill	Primary fill of slot [104] in ring ditch. Compact, reddish brown (2.5YR 4/4) sandy silt with coarse gravel <0.02m diameter. Formed from the slumping of the ditch side through erosion			0.35m	14		Fill of [104]; Above [104]; Below (103)
109	Cut	Cut of ring ditch. Curvilinear in plan with 45°sloping sides and concave base		0.90m	0.40m	1		Filled by (114), (115), (116); Above (110); Below (116)
110	Layer	Natural horizon comprising compact periglacial sands & gravel deposits of various hues	-	-	Not recorded	-		Natural horizon, cut by the archaeological and modern features
111	Fill	Tertiary fill of slot [113] in ring ditch. Soft, black (10YR 2/1) sandy silt with occasional angular flint gravel <0.02m diameter. Ditch fill washed down from the central mound			0.10m	15		Fill of [113]; Above (112); Below (100)
112	Fill	Secondary fill of slot [113] in ring ditch. Soft, dark brown (7.5YR 3/3) silty sand with occasional rounded gravel <0.02m diameter			0.12m	15		Fill of [113]; Above [113]; Below (111)
113	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a rounded, sloping base		0.82m	0.31m	15		Filled by (111), (112); Above (110); Below (112)
114	Fill	Tertiary fill of slot [109] in ring ditch. Soft, black (10YR 2/1) silty sand with rare rounded flint gravel. Produced from a natural silting of the ring ditch			0.14m	1	1	Fill of [109]; Above (115); Below (100)
115	Fill	Secondary fill of slot [109] in ring ditch. Soft, grey brown (10YR 5/2) silty sand with common rounded flint gravel. Probably derived from rapid erosion of mound & ditch sides soon after construction			0.15m	1	2	Fill of [109]; Above (116); Below (114)
116	Fill	Primary fill of slot [109] in ring ditch. Soft, black (10YR 2/1) sand. Derived from erosion (water borne) of the ditch sides soon after construction			0.05m	1	3	Fill of [109]; Above (109); Below (115)

Context No.	Type	Description	Dimensions			Section No.	Sample No.	Stratigraphical relationships
			Length	Width/ Diameter	Thickness/ Depth			
117	Cut	Cut of ring ditch. Curvilinear in plan with concave, sloping sides and a flat base		0.85m	0.30m	2		Filled by (118), (119); Above (110); Below (119)
118	Fill	Tertiary fill of slot [117] in ring ditch. Soft, black (10YR 2/1) silty sand with rare rounded flint gravel			0.14m	2	4	Fill of [117]; Above (119); Below (100)
119	Fill	Secondary fill of slot [117] in ring ditch. Soft, grey brown (10YR 5/2) silty sand with common rounded flint gravel. Probably derived from rapid silting of the ditch soon after construction			0.20m	2	5	Fill of [117]; Above [117]; Below (118)
120	Fill	Tertiary fill of slot [122] in ring ditch. Soft, black (10YR 2/1) silty sand with moderate rounded gravel <0.02m. Derived from natural silting process as the ditch went out of use			0.22m	16	6	Fill of [122]; Above (121); Below (100)
121	Fill	Secondary fill of slot [122] in ring ditch. Soft, grey brown (10YR 5/2) silty sand with frequent rounded coarse flint gravel <0.02m			0.18m	16	7	Fill of [122]. Above [122]; Below (120)
122	Cut	Cut of ring ditch. Curvilinear in plan with concave, irregular sides and a sloping base		1.03m	0.38m	16		Filled by (120), (121); Above (110); Below (121)
123	Fill	Tertiary fill of slot [125] in ring ditch. Soft, black (10YR 2/1) silty sand			0.24m	17	8	Fill of [125]; Above (124); Below (100)
124	Fill	Secondary fill of slot [125] in ring ditch. Soft, yellow brown (10YR 5/4) silty sand			0.21m	17	9	Fill of [125]; Above [125]; Below (123)
125	Cut	Cut of ring ditch. Curvilinear in plan with 45° sloping sides and a rounded base		1.11m	0.40m	17		Filled by (123), (124); Above (110); Below (124)
126	Cut	Cut of ring ditch. Curvilinear in plan with convex sides and a flat base		1.20m	0.40m	3		Filled by (127), (128), (132); Above (110); Below (132)
127	Fill	Tertiary fill of slot [126] in ring ditch. Soft, very dark grey (10YR 3/1) sand with rare rounded flint gravel. Derived from natural silting with laminated layers			0.20m	3	10	Fill of [126]; Above (128); Below (100)
128	Fill	Secondary fill of slot [126] in ring ditch. Firm, very dark grey brown (10YR 3/2) sand with common rounded flint gravel. Derived from the natural silting of the ditch			0.20m	3	11	Fill of [126]; Above (132); Below (127)
129	Cut	Cut of ring ditch. Curvilinear in plan with convex sides and a rounded base		1.30m	0.45m	4		Filled by (130), (131); Above (110); Below (131)
130	Fill	Tertiary fill of slot [129] in ring ditch. Soft, very dark grey (10YR 3/1) sand with rare rounded flint gravel			0.25m	4	12	Fill of [129]; Above (131); Below (100)
131	Fill	Secondary fill of slot [129] in ring ditch. Firm, dark brown (10YR 3/3) sand with rare rounded flint gravel. Composed of multiple laminated layers derived from natural silting			0.20m	4	13	Fill of [129]; Above [129]; Below (130)
132	Fill	Primary fill of slot [126] in ring ditch. Compact, yellow brown (10YR) sand with rare small, rounded flint gravel. Composed of sands washed out from the ditch sides			0.10m	3		Fill of [126]; Above [126]; Below (128)
133	Fill	Tertiary fill of slot [135] in ring ditch. Soft, very dark brown (10YR 2/2) silty sand			0.14m	13	14	Fill of [135]; Above (134); Below (100)
134	Fill	Secondary fill of slot [135] in ring ditch. Soft, dark brown (10YR 3/4) silty sand			0.14m	13	15	Fill of [135]; Above [135]; Below (133)
135	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and rounded base		0.90m	0.23m	13		Filled by (133), (134); Above (110); Below (134)

Context No.	Type	Description	Dimensions			Section No.	Sample No.	Stratigraphical relationships
			Length	Width/ Diameter	Thickness/ Depth			
136	Fill	Tertiary fill of slot [138] in ring ditch. Soft, grey brown (10YR 5/2) sandy silt			0.18m	12		Fill of [138]; Above (137); Below (100)
137	Fill	Secondary fill of slot [138] in ring ditch. Soft, dark red brown (5YR 2.5/2) sandy silt with occasional rounded and angular gravel			0.13m	12		Fill of [138]; Above (141); Below (136)
138	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a rounded base.		1.23m	0.31m	12		Filled by (136), (137), (141); Above (110); Below (141)
139	Cut	Cut of ring ditch. Curvilinear in plan with rounded sides and base		0.90m	0.20m	5		Filled by (142), (143), (146); Above (110); Below (146)
140	Cut	Cut of ring ditch. Curvilinear in plan with stepped sides and a rounded base		1.20m	0.35m	6		Filled by (144), (145); Above (110); Below (145)
141	Fill	Primary fill of slot [138] in ring ditch. Soft, dark reddish brown (5YR 3/4) sandy silt with occasional angular and rounded gravel. Derived from erosion of the ditch sides when the ditch was first constructed			0.06m	12		Fill of [138]; Above [138]; Below (137)
142	Fill	Tertiary fill of slot [139] in ring ditch. Soft, very dark grey (10YR 3/1) sand with rare rounded flint gravel. Composed of laminated layers			0.10m	5	16	Fill of [139]; Above (143); Below (100)
143	Fill	Secondary fill of slot [139] in ring ditch. Firm, very dark grey brown 10YR 3/2 silty sand with rare rounded flint gravel. Composed of multiple laminated layers			0.10m	5	17	Fill of [139]; Above (146); Below (142)
144	Fill	Tertiary fill of slot [140] in ring ditch. Soft, very dark grey (10YR 3/1) sand with rare rounded flint gravel. Composed of laminated layers			0.20m	6	18	Fill of [140]; Above (145); Below (100)
145	Fill	Secondary fill of slot [140] in ring ditch. Firm, very dark grey brown (10YR 3/2) silty sand with rare rounded flint gravel. Composed of multiple laminated layers			0.20m	6	19	Fill of [140]; Above [140]; Below (144)
146	Fill	Primary fill of slot [139] in ring ditch. Compact, black (10YR 2/1) sand with moderate rounded flint gravel			0.05m	5		Fill of [139]; Above [139]; Below (143)
147	Cut	Cut of ring ditch. Curvilinear in plan with convex sides and a flat base		0.85m	0.31m	7		Filled by (148), (149), (150); Above (110); Below (150)
148	Fill	Tertiary fill of slot [147] in ring ditch. Soft, very dark grey (10YR 3/1) sand with rare rounded flint gravel. Composed of laminated layers			0.12m	7	20	Fill of [147]; Above (149); Below (100)
149	Fill	Secondary fill of slot [147] in ring ditch. Soft, dark grey brown (10YR 4/2) sand with rare rounded flint gravel. Composed of laminated layers			0.15m	7	21	Fill of [147]; Above (150); Below (148)
150	Fill	Primary fill of slot [147] in ring ditch. Compact, black (10YR 2/1) sand with rare rounded flint gravel. Composed of material eroded from the ditch sides			0.18m	7		Fill of [147]; Above [147]; Below (149)
151	Cut	Cut of ring ditch. Curvilinear in plan with concave sides & rounded base		1.00m	0.17m	8		Filled by (152), (153), (154); Above (110); Below (154)
152	Fill	Tertiary fill of slot [151] in ring ditch. Soft, black (10YR 2/1) sand with rare rounded flint gravel. Composed of multiple laminated layers			0.13m	8	22	Fill of [151]; Above (153); Below (100)
153	Fill	Secondary fill of slot [151] in ring ditch. Firm, dark brown (10YR 3/3) sand with rare rounded flint gravel. Composed of multiple laminated layers			0.10m	8	23	Fill of [151]; Above (154); Below (152)
154	Fill	Primary fill of slot [151] in ring ditch. No context description recorded			0.05m	8		Fill of [151]; Above [151]; Below (153)

Context No.	Type	Description	Dimensions			Section No.	Sample No.	Stratigraphical relationships
			Length	Width/ Diameter	Thickness/ Depth			
155	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a flat base		1.20m	0.30m	9		Filled by (161), (162); Above (110); Below (162)
156	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a rounded base		1.14m	0.22m	11		Filled by (158), (159), (160); Above (110); Below (160)
157	Cut	Cut of ring ditch. Curvilinear in plan with concave sides and a rounded base		0.90m	0.38m	10		Filled by (163), (164), (165); Above (110); Below (165)
158	Fill	Tertiary fill of slot [156] in ring ditch. Soft, very dark brown (10YR 2/2) sandy silt with moderate angular flint gravel <0.02m diameter			0.11m	11	26	Fill of [156]; Above (159); Below (100)
159	Fill	Secondary fill of slot [156] in ring ditch. Soft, pale brown (10YR 6/2) silty sand with occasional angular and rounded flint gravel <0.02m diameter			0.11m	11		Fill of [156]; Above (160); Below (158)
160	Fill	Primary fill of slot [156] in ring ditch. Soft, dark yellow brown (10YR 3/4) silty sand with occasional angular and rounded flint gravel <0.02m diameter. Derived from initial silting of the ditch following construction			0.05m	11	27	Fill of [156]; Above [156]; Below (159)
161	Fill	Tertiary fill of slot [155] in ring ditch. Soft, black (10YR 2/1) sand with rare small, rounded flint gravel			0.15m	9	24	Fill of [155]; Above (162); Below (100)
162	Fill	Secondary fill of slot [155] in ring ditch. Firm, dark brown (10YR 3/3) sand with rare rounded flint gravel		0.75m	0.14m	9	25	Fill of [155]; Above [155]; Below (161)
163	Fill	Tertiary fill of slot [157] in ring ditch. Soft, black (10YR 2/1) sand with rare rounded flint gravel			0.15m	10	28	Fill of [157]; Above (164); Below (100)
164	Fill	Secondary fill of slot [157] in ring ditch. Firm, dark brown 10YR 3/3 sand with rare rounded flint gravel			0.20m	10	29	Fill of [157]; Above (165); Below (163)
165	Fill	Primary fill of slot [157] in ring ditch. Compact, black (10YR 2/1) sand with moderate small, rounded gravel			0.08m	10	30	Fill of [157]; Above [157]; Below (164)
166	Cut	Cut of machine excavated robber trench. Rectangular in plan, oriented N-S, with straight, near vertical sides and an undulating base	3.0m	1.20m	0.54m	18		Filled by (167); Above (110); Below (167)
167	Fill	Fill of cut [166]. Soft, black (10YR 2/1) silty sand with grey (10YR 5/1) and yellow brown (10YR 5/6) sand and gravel lenses			0.54m	18	31	Fill of [166]; Above [166]; Below (100)

Appendix 3. Sample quantification

Section	Context No.	Bulk Sample No.	Sample Size
1	(114)	<1>	40 litres
1	(115)	<2>	40 litres
1	(116)	<3>	10 litres
2	(118)	<4>	40 litres
2	(119)	<5>	40 litres
16	(120)	<6>	40 litres
16	(121)	<7>	40 litres
17	(123)	<8>	40 litres
17	(124)	<9>	40 litres
3	(127)	<10>	40 litres
3	(128)	<11>	40 litres
4	(130)	<12>	40 litres
4	(131)	<13>	40 litres
13	(133)	<14>	40 litres
13	(134)	<15>	20 litres
5	(142)	<16>	40 litres
5	(143)	<17>	40 litres
6	(144)	<18>	40 litres
6	(145)	<19>	40 litres
7	(148)	<20>	40 litres
7	(149)	<21>	40 litres
8	(152)	<22>	40 litres
8	(153)	<23>	40 litres
9	(161)	<24>	40 litres
9	(162)	<25>	40 litres
11	(158)	<26>	40 litres
11	(160)	<27>	10 litres
10	(163)	<28>	40 litres
10	(164)	<29>	40 litres
10	(165)	<30>	40 litres
18	(167)	<31>	40 litres

Table 1. Bulk soil sample quantification

Section	Column Sample	Sample Size	Depth
2	<117>	5 litres	Up to 0.30m
12	<138>	5 litres	Up to 0.31m
6	<140>	5 litres	Up to 0.35m
10	<157>	5 litres	Up to 0.38m
18	<166>	5 litres	Up to 0.52m

Table 2. Column sample quantification

Appendix 4: Assessment of carbonised plant material (127) <10> by Imogen van Bergen-Poole

1. Introduction

A glass vial of carbonised plant material from Binnegar Quarry was sent for assessment to determine the suitability for radiocarbon dating.

2. Material and methods

The small (<5 mm) predominantly carbonised fragments were prepared using standard techniques (Gale and Cutler 2000). Fragments were handled using tweezers to minimise carbon contamination. Anatomical structures of all fragments large enough to handle were examined using reflected light on an Olympus BX41 microscope to determine quality of preservation and taxonomic diversity using x4, x10, x20 and x40 objectives. Taxonomic comparisons were made, when necessary, with relevant literature (e.g. Schweingruber 1990; Gale and Cutler 2000). Fragments were grouped according to taxon, placed in an aluminium foil envelope and assigned an arbitrary number (**Table 3**) to facilitate future reference if necessary. However it must be noted that given the small size of the material only the cross sections could be studied and wood anatomy is not enough to secure identification to individual taxon and thus the fragments are grouped either according to genus or genera with which the fragments shares similarity or with similar fragments and separated arbitrarily. All fragments too small to handle were replaced in the glass vial.

3. Results

The fragments could be divided into those that were suitable for radiocarbon dating (e.g. **Plate 7**) and those that are not. Suitable fragments included small roots (**Plate 7**) and twigs with either outer cortex (e.g. **Plate 7**) and/or pith visible, or the inner portions of an axis the anatomical curvature of which is typical of a small twig or root. Those fragments deemed unsuitable for radiocarbon dating include the uncarbonised plant material (possible contaminants), splinters of larger diameter material (i.e. not round wood - including twig wood - from possibly long-lived material and thus might contribute an 'old wood' bias), fragments with very little organic structure visible and cavities filled with sand (which might contribute possible carbon contamination) and fragments with little to no organic structure visible.

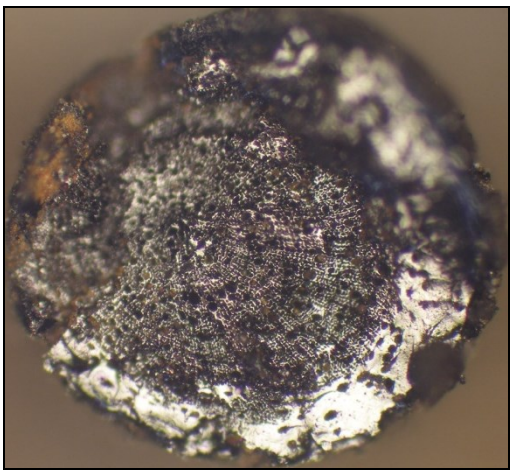

Plate 7. Photomicrograph showing quality of preservation typical of the material (in this case a root)

The type of charcoalified plant material included woody fragments from dicotyledonous and monocotyledonous angiosperms and ferns as well as some of unknown taxonomic status due to their poor preservation and/or size.

Arbitrary Number	Taxonomic affinity (sp.)	common name	Number of fragments	Comments	Suitability for ^{14}C dating
1	? *Quercus*	oak	1	root	yes
2	*?Populus/Salix*	poplar/willow	20	root	yes
3	Unidentifiable dicot	--	23	root/twig	yes
4	uncarbonised fragments	--	5	dicot and other plant material	no
5	Dicot A	--	2	root/twig	yes
6	Dicot B	--	2	--	yes
7	Dicot C	--	3	--	yes
8	?Inorganic material	--	2	--	no
9	?*Populus/Salix*	poplar/willow	6	splinter of mature wood	no
10	Dicot D	--	6	splinter of mature wood	no
11	Monocot A	--	3	--	yes
12	Organic material	--	5	unidentifiable	no
13	Fern rachis	--	1	--	yes
14	?*Tilia*	lime	1	twig	yes

Table 3. Summary of the identifications of the carbonised plant fragments (127) <10>

4. Conclusions

Some of the material provided is suitable for radiocarbon dating.

References

Gale R. & Cutler D. 2000. *Plants in Archaeology* Westbury and Royal Botanic Gardens Kew, London.

Schweingruber FH. 1990. *Mikroskopische Holzanatomie. Anatomie microscopique du bois. Microscopic wood anatomy*. Swiss Federal Institute of Forestry Research, 226pp.

Appendix 5. Report on radiocarbon age determination

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Report on Radiocarbon Age Determination for Wk-25593

(AMS measurement)

Submitter	FA Pegg
Submitter's Code	(163).<28>
Site & Location	Binnegar Quarry, Wareham, Dorset, United Kingdom
Sample Material	Charcoal -unidentified
Physical Pretreatment	Sample cleaned.
Chemical Pretreatment	Sample washed in hot HCl, rinsed and treated with multiple hot NaOH washes. TheNaOH insoluble fraction was treated with hot HCl, filtered, rinsed and dried.

$\delta^{13}C$	-25.3 ± 0.2	‰
$D^{14}C$	-271.4 ± 1.7	‰
$F^{14}C\%$	72.9 ± 0.2	%
Result	**2544 ± 35 BP**	

Comments

24/6/09

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory ErrorMultiplier.
- The isotopic fractionation, $\delta^{13}C$, is expressed as ‰ wrt PDB.
- F^{14} C% is also known as pMC (percent modern carbon).

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Report on Radiocarbon Age Determination for Wk-25594

(AMS measurement)

Submitter FA Pegg

Submitter's Code (127).<10>

Site & Location Binnegar Quarry, Wareham, Dorset, United Kingdom

Sample Material Charcoal -unidentified

Physical Pretreatment Sample cleaned.

Chemical Pretreatment Sample washed in hot HCl, rinsed and treated with multiple hot NaOH washes. TheNaOH insoluble fraction was treated with hot HCl, filtered, rinsed and dried.

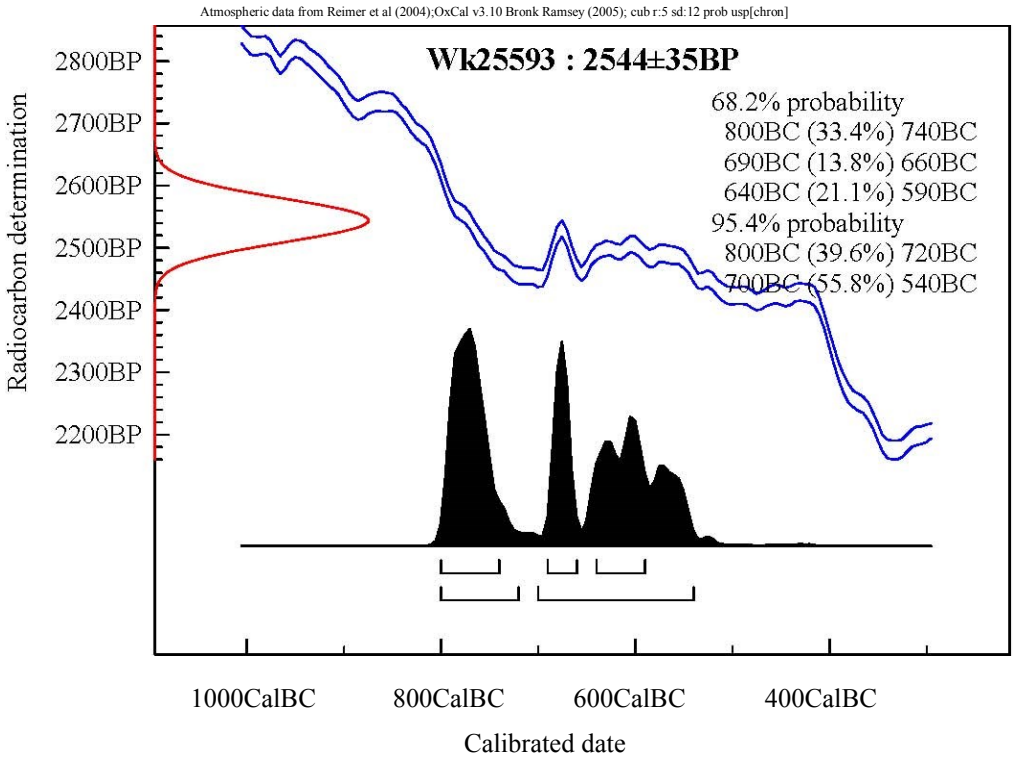
$\delta^{13}C$	-23.8 ± 0.2	‰
$D^{14}C$	-238.1 ± 1.4	‰
$F^{14}C\%$	76.2 ± 0.1	%

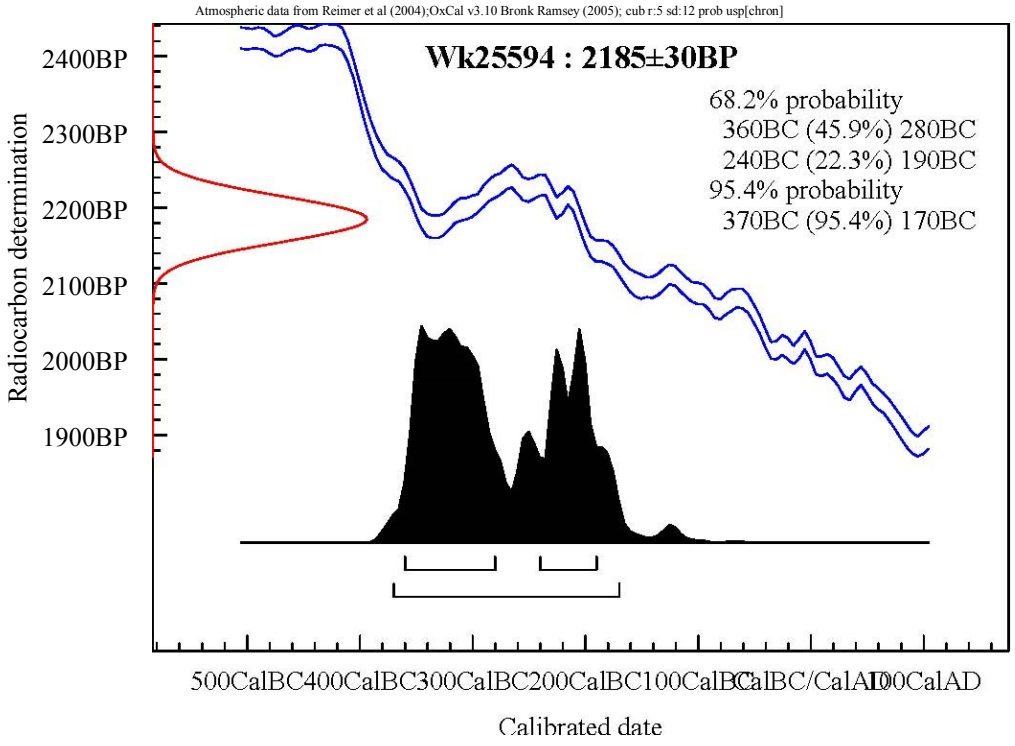
Result **2185 ± 30 BP**

Comments

24/6/09

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory ErrorMultiplier.
- The isotopic fractionation, $\delta^{13}C$, is expressed as ‰ wrt PDB.
- F^{14} C% is also known as pMC (percent modern carbon).


Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]
Wk25593 : 2544±35BP
68.2% probability
800BC (33.4%) 740BC
690BC (13.8%) 660BC
640BC (21.1%) 590BC
95.4% probability
800BC (39.6%) 720BC
700BC (55.8%) 540BC
Radiocarbon determination
2800BP
2700BP
2600BP
2500BP
2400BP
2300BP
2200BP
1000CalBC
800CalBC
600CalBC
400CalBC
Calibrated date


Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]
Wk25594 : 2185±30BP
68.2% probability
360BC (45.9%) 280BC
240BC (22.3%) 190BC
95.4% probability
370BC (95.4%) 170BC
Radiocarbon determination
2400BP
2300BP
2200BP
2100BP
2000BP
1900BP
500CalBC
400CalBC
300CalBC
200CalBC
100CalBC
CalBC/CalAD
100CalAD
Calibrated date

Appendix 6. Pollen analysis of the Bronze Age barrow ditch fills by Dr. Rob Scaife

1.) Introduction

Samples for pollen analysis were taken from four (compass) sections of the sediment fills of this Bronze Age barrow ditch and also from a central pit feature. The latter is thought to be a possible robber trench. No buried palaeosol or old land surface was available for analysis, as the probable turf mound has previously been destroyed. An earlier assessment of the pollen content of these ditch fills established that sub-fossil pollen and spores were preserved in all of the lower (primary and secondary) sediment fills in sufficient quantity and state of preservation to allow full analysis to be undertaken (Scaife 2007). This has been carried out with the aim of establishing the local vegetation and environment of the Bronze Age at, or immediately after the time of barrow construction. As no buried soil or old land surface remained under the barrow recourse was made to detailed analysis of the basal ditch profiles. Radiocarbon dates have also been obtained from charcoal recovered from bulk soil samples <10> and <28>, taken from the tertiary fills of Sections 3 and 10 respectively.

2.) Pollen method

Pollen sub-samples of 2ml volume taken at a sampling interval of 4cm were obtained from three of the five sample monoliths. These included sample monoliths taken from Section 2 [117], Section 10 [157] and the central, possible robber trench [166]. In the initial assessment study, Column <140> from Section 6, was examined and data from this profile is also referred to in this paper. These samples were processed using standard techniques for the extraction of the sub-fossil pollen and spores (Moore and Webb 1978; Moore *et al*. 1992). Micromesh sieving (10u) was also used to aid with removal of the clay fraction where present in these sediments. The sub-fossil pollen and spores were identified and counted using an Olympus biological research microscope fitted with Leitz optics. A pollen sum of up to 500 grains of dry land taxa per sample level was adopted where preservation allowed. Fern spores were counted outside of the pollen sum. Absolute pollen frequencies were calculated using added exotics to known volumes of sample (Stockmarr 1971). Pollen diagrams (figures 1-4) have been plotted using Tilia and Tilia Graph with percentages calculated as a percentage of the total pollen sum and spores as a percentage of the pollen sum + spores. Taxonomy, in general, follows that of Moore and Webb (1978) modified according to Bennett *et al*. (1994) for pollen types and Stace (1992) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton.

3.) The pollen data

Three of the five sample columns taken have been examined in detail. These include <117> <157> and the possible central robber trench <166>. Column <140> was previously assessed and also provides useful and comparative data. All of these samples/profiles come from the primary, secondary and tertiary fills of the barrow ditch (and the central robber trench). The palynological characteristics of these profiles are described as follows.

3.a.) Column <117> (118) (119)

3.a.i.) Stratigraphy

4 - 12cm Black, humic Ah. (10YR 2/1 to 10YR 2/2).
12 - 22cm Greyish fine-medium sand (10YR 3/2). Flints to 50mm.
22 – 31cm Large flint in humic sands. (10YR 5/3).
31 – 38cm Fine-medium sand with some silt (10YR 6/2).
38 – 43cm Basal gravel in buff coloured sandy matrix.

3.a.ii.) Pollen (Figure 5)

In common with the other profiles examined, pollen was absent in the upper, highly humic, Ah soils between 0cm and 12cm. There is a sharp transition at 12 cm (a hiatus ?) below which there are substantial quantities of pollen (to 450,000 grains/ml) in the lower part of the humic. Below this, pollen numbers decline markedly into the lower, more mineral material. However, counts were readily obtained from the lower, brown silty soils and laminated (inwash) basal sand and silt of this ditch segment. The pollen assemblages are consistent with little stratigraphical variation throughout the profile. Consequently, no local pollen assemblage zones have been defined.

Heathland taxa are dominant throughout the profile with *Erica* (heather; to 24%) and *Calluna* (ling; to 57%) consistent throughout. There are also traces of *Vaccinium* (bilberry). Of interest is *Radiola linoides* (allsweet), a plant which typically grows on damp, bare acidic soils (Rose 1981). Pollen of this taxon has rarely been recorded although it has also been found in late prehistoric heathland soils at Hengistbury Head (Scaife 1992).

Trees and shrubs are also relatively important with *Quercus* (oak; to 7%), *Corylus avellana* type (hazel or sweet gale; to 25%) and *Alnus glutinosa* (alder; 12%). There are sporadic occurrences of *Betula* (birch), *Pinus* (from long distance), *Ulmus* (elm), *Tilia* (lime) and *Fraxinus* (ash).

There are few herbs with *Poaceae* (grasses) and *Plantago lanceolata* (ribwort plantain) the principal types. There are occasional cereal pollen grains.

Spores comprise largely *Pteridium aquilinum* (bracken; to 23% sum + spores) with small numbers of monolete (Dryopteris type) Pteropsida and occasional *Sphagnum* (bog moss).

3.b.) Column <157> (165) (164)(163)

3.b.i.) Stratigraphy
Charcoal recovered from the tertiary fill has been radiocarbon dated at 2544+/-35 BP (Wk-25593).

0 – 18cm	Dark/black humic Ah. 10YR 3/1.
18 – 38cm	Silty sand with occasional humic lenses. 10YR 5/3. Flint at 28cm.
38 – 45cm	Coarse sand with humic lenses and occasional flint gravel.
	Basal gravel.

3.b.ii.) Pollen (Figure 6)
As with the other profiles, pollen was absent in the upper (0-14 cm) of highly humified organic, mor humus (Ah) fills of the ditch. Pollen was, however, present from 16cm down profile to basal gravels at 40cm. As with <117> there are greater pollen numbers in the lower part of the upper humic ditch fills with substantial absolute pollen numbers (to ca. 450,000 grains/ml. This may be a hiatus/discontinuity between an upper humic (and weathered) horizon, and the top of a second, lower and earlier humic Ah. Pollen numbers decline into the lower, mineral (sandy) fills. Overall, the pollen assemblages show little stratigraphical change with the slight exception of Poaceae which have generally slightly higher values in the lower half of the profile. Ericaceae (*Erica* and *Calluna*) are dominant with trees and shrubs comprising *Alnus* and *Corylus avellana* type.

Erica (16%) and *Calluna* (to 56%) are dominant throughout. The most important trees are *Alnus glutinosa* (to 14%) with some *Quercus* (to 4%) and occasional *Betula, Pinus, Ulmus* and *Tilia*. *Corylus avellana* type is the most important shrub (to 22%). As with other profiles, Poaceae is most important with its highest value in the lower part of the profile (19% at 36cm). Cereal pollen is also sporadically present. Other herb taxa include Plantago lanceolata and a range of other herbs which become more diverse towards the top of the profile.

Pteridium aquilinum is the dominant fern taxon (to 17%) with occasional occurrences of monolete forms (*Dryopteris* type and *Polypodium*) and spores of the liverwort *Anthoceras punctatum*.

3.c.) Column <140> (145) (144)

3.c.ii,) Stratigraphy

0 – 15cm	Dark/black humic Ah.
15 – 18cm	Humic sand.
18 – 28cm	Brown humic sand and silt.
28 – 32cm	Laminated humic sand.
	Basal gravel.

3.c.ii.) Pollen (Figure 7)
This profile was examined only to assessment level with pollen sums of 100-150 grains per sample. However, data are consistent with, and comparable with the other profiles which have been examined in greater

detail. Pollen was largely absent in the upper humic Ah. (as in <117> above) except, in the very uppermost sample. Pollen was, however, abundant in the lower sand/silt fills.

Overall, there is a progressive decline in trees and shrubs up-profile while Ericaceae (*Erica* and *Calluna*) become more important. *Erica* (22%) and *Calluna* (to 55% in the upper level) are the dominant taxa throughout. Trees and shrubs comprise *Alnus glutinosa* (17% in the basal sample) and *Corylus avellana* type (25% at the base). There is little *Quercus* compared with the other profiles (3%). There are also occasional records of *Betula, Pinus, Tilia, Ulmus* and *Rhamnus*.

Herbs comprise Poaceae (which increases to 20% in the upper level) with occasional *Plantago lanceolata*, *Asteraceae types* (*Bidens* type, *Artemisia, Cirsium* type and Lactucoideae) and a cereal type pollen grain at 24cm. Pteridophytes are more important at the base of the profile with *Pteridium aquilinum* (23%) important in the basal sample.

3.d.) Column <166> (167). The central ? robber trench
Initially, during excavation it was unclear as to the nature of this central pit feature <166>. This has now been discerned as a possible robber trench.

3.d.i.) Stratigraphy
The characteristics of the sediments in this profile are similar to those of the ditch profiles described above. This similarly applies to the pollen assemblages obtained although there is some variation which may suggest that at least the refilling of this feature occurred in different stages.

0 – 24cm Fine and medium humic sand. Grey (10YR 3/1). With some angular and sub angular flints.
24 – 30cm Grey, coarse sand with pebbles.
30 – 32cm Coarse gravels to base (ca. 60cm).

3.d.ii.) Pollen (Figure 8)
Absolute pollen numbers are higher in the upper part of the humic fills to 4cm (to 300,000 grains/ml) which is comparable with the humic levels of <117> and <157>. Below this in the lower humic and mineral sediments, numbers decline with the exception of a single level (28cm) which attains highest values.

Overall, Ericales are most important with *Calluna* dominant throughout the sequence. Trees and shrubs are also present and comprise *Alnus* (to 18% at 20cm) and *Corylus avellana* type (to 29% at 12%). In addition are *Quercus* (3%) and occasional numbers of *Betula, Pinus, Ulmus, Tilia* and *Fagus sylvatica*. Of note is a single occurrence of *Abies* (fir) in the basal sample which may be indicative of the fact that these fills may be an admixture of soils of differing ages.

There are relatively small numbers of herbs which comprise Lactucoideae (dandelion types) in the basal peat of the profile (to 9%), *Plantago lanceolata* (<2%), Poaceae (6%) and occasional cereal pollen. Other herbs occur sporadically include Chenopodiaceae (goosefoots and oraches), Brassicaceae (charlocks), *Convolvulus* (bindweed) and Asteraceae types (*Bidens* type and *Anthemis* type).

Although not significant enough to warrant pollen zonation, it can be noted that the basal levels (32cm to ca. 26cm) differ in having higher values of Lactucoideae and also lesser values of *Quercus*. Perhaps the clearest indication that this ditch may be a very recent feature is the presence of *Abies* (fir), albeit a single grain. This is a non-native tree and its presence indicates that the robber trench was dug in the period after introduction of this taxon into parks and gardens from the 17th century.

4.) Discussion, the past vegetation
The most successful reconstruction of past vegetation from terrestrial (i.e. non-mire peat sequences) come from the pollen analysis of palaeosols and the old land surface on which banks and funerary mounds were built. Such constructions 'fossilise' the soils and the palaeoecological of landscape at the time of soil burial. Their value to pollen analysis and environmental reconstruction is exemplified by the work of Prof. G.W. Dimbleby at many sites, especially within this region. His analyses of the sites of nearby Chicks Hill (Ashbee and Dimbleby 1958), Turners Puddle Heath (Dimbleby 1953), Poole (Dimbleby in Case 1952) and Black Down, Portesham (Dimbleby 1957) can be regarded as classic and important studies. Seagrief's (1959) work on the peats at Wareham and subsequently other analyses in the region of Poole Harbour include those of Haskins

(1978, 1980), Cameron and Scaife (1991, Scaife (1991) and from Bestwall (Scaife 2009/in press). These soil pollen data and the peat based palynological studies provide a valuable database of the vegetational history of the region.

Prior to deforestation for agriculture, by Neolithic and Bronze Age communities, there is clear evidence from the region as a whole, that the principal woodland on such well drained and at the time, sandy brown earth, would have been lime (*Tilia*) dominated with oak (*Quercus*). This has now been much discussed and seen in the pollen diagrams of Haskins (1978) and Scaife 2009/in press) from this region. This also pertained over much of southern and eastern England during the middle Holocene and into the late prehistoric/Neolithic period (Moore 1977; Greig 1982; Scaife 1980, 2000). The soils underlying such woodland would have been biologically active and typically not conducive to pollen preservation. The first woodland clearance, opening up the environment, would have caused the inception of soil deterioration/podzolisation on such sandy soils. Initially this may have been through the ephemeral clearances of Mesolithic communities or more organised clearance for agriculture from the Neolithic period onwards. This activity initiated reduced faunal mixing and pollen preservation as soils became more acidic (podzolic) and more favourable for pollen preservation. It also proffered a favourable habitat for the development and expansion of heathland. It is this habitat which is suggested by the pollen data retrieved from Binnegar. That is, that whilst heathland vegetation (*Erica* and *Calluna*) were important on-site, this was in a mosaic of transitional woodland consisting largely of oak and hazel on drier soils. Consistent presence of alder in all of the profiles attests to growth on wetter valley bottom soils adjacent to streams.

At Binnegar, it is unfortunate that the old land surface, which must have existed under the central barrow construction (albeit possibly truncated for turves) was absent since this would have clearly defined the character of the Bronze Age vegetation at the time of burial. However, in its absence, the sediments fills of the circular boundary ditch has well preserved soil/sediment fills which contain sub-fossil pollen and spores which are thought to represent the vegetation of the period from immediately after construction of the mound.

The chronology of the sedimentation comprises an initial stage in which some sections show some collapsed material (primary fill) from the sides which probably occurred rapidly after construction (McConnell *et al*. 2007). Subsequently, there was longer phase of slow largely minerogenic accumulation. This, the secondary phase of sediments, consists of laminated silts and sands and with occasional coarser, stony horizons (secondary fill). Overlying this are dark/black highly humified humic matter (moor humus) (tertiary fill) to the top of the level to which overburden had been stripped prior to gravel extraction. This humic horizon probably developed, *in situ* from on-site heath vegetation but, because of its substantial thickness probably also contains similar detrital material which had been washed or blown into the ditch depression. This is a typical uppermost Ah horizon of a heathland podzol, that is, the normal soil type for degraded sandy soils and heathland vegetation, which being detrital is typically blown into any available hollows. The highly humified/oxidised nature of these Ah deposits is usually favourable for pollen preservation, often containing high absolute pollen frequencies. This is not, however, the case here with only an upper sample in section <140> yielding any results. It is likely that the exposure and good drainage of the site and/or the very highly acidity of these humic deposits has totally degraded the pollen in most of the upper levels. The acidity is, of course, the reason why no faunal remains are present (bones and molluscs). Although pollen is not present in the upper humic levels, preservation is good in the underlying minerogenic, primary and secondary fills. This is more important since it is these sediments which accumulated from immediately after construction of the barrow and has allowed environmental construction of the middle to late Bronze Age.

The taphonomy of the pollen in ditch fills is usually complex with pollen derived from a number of sources. The primary fills are derived from the surrounding land surface and soils which fell or were washed into the ditch immediately after construction. As such, pollen is of tertiary derivation from the already developed soil profile (both the A and B horizons). These pollen assemblages may provide information on the on-site habitat prior to construction. Pollen in the subsequent and more slowly accumulating secondary and tertiary fills show the subsequent development of the on-site and local vegetation as the ditch continued to infill. The pollen data may, therefore, be a mixture of earlier pollen with pollen from immediately prior to barrow construction. It should also be noted that pollen preservation would only have ensued after woodland clearance and soil deterioration which produced the acid (podzolic) soils conditions suited to preservation of pollen (Dimbleby 1988). Consequently, it is very likely that the pollen recovered, even if derived from adjacent soils, will be related to human impact in the period immediately prior to barrow construction.

In common with the work of Dimbleby on other Bronze Age barrow palaeosols in southern Britain, it appears that the pollen spectra at Binnegar show transitional woodland. That is, whilst hazel (*Corylus avellana*) in particular with oak (*Quercus*) are present, there is a strong representation of dwarf shrub, ericaceous heathland elements (heather and ling with some bilberry). This indicates that the barrows were built in a habitat that already had podzolic soils developed under heathland vegetation communities. Scrub woodland in proximity with hazel probably most important. Of note is the rare (pollen) occurrence of allsweet (*Radiola linoides*) a plant which typically grows on damp, bare acidic soils of heathland. Alder (*Alnus glutinosa*) is also relatively important in the pollen spectra here. Although a high pollen producer and anemophilous, often leading to over representation, values here suggest local growth on the floodplain alder (carr) of the adjacent wet valley bottom.

Two radiocarbon dates have been obtained. These are 2544+/-35 BP (Wk-25593) for Section 10 <157> discussed above and from Section 3 <127>, not selected for pollen analysis. The latter date appears to be of much more recent age at 2185+/-30 BP (Wk-25594) and comes from the upper (humic) fills of the ditch. The dates obtained are, however, commensurate with the vegetation of the site when compared with the existing regional pollen data. As noted, earlier woodland on the site would almost certainly have had dominant lime probably with oak and was largely cleared during by the middle Bronze Age (the often described Lime Decline). The typical importance of lime pollen which is often seen in the old land surfaces under early Bronze Age barrows is, however, not found at Binnegar. This and the importance of heathland on-site show that the ditch sediments accreted after this woodland-heathland transition. Certainly, pollen from the lower fills contains a strong heathland component which differs little from the later tertiary fills, thus, indicating that the barrows were built in an already strong heathland habitat. The middle to late Bronze Age date obtained from charcoal are in accord with progressive middle and later Bronze Age stabilisation of the ditch within a heathland habitat which was maintained by fire and grazing (a plagioclimax community).
It remains the case that the sediments represent progressive accumulation from immediately after barrow construction and perhaps continued through to the very late prehistoric and early historic period. The absence of lime pollen in the very basal levels of the ditch fills may also suggest that this site had been subject to an earlier (?Neolithic) deforestation phase which caused podzolisation and heathland development by the time of barrow construction. It is unfortunate that no remaining palaeosol/old land surface remained preserved at this site which might provide evidence of the vegetation of the soils on which the barrow was constructed.

4.a.) Agriculture
In all profiles, there is a minor representation of cereal type pollen and some associated arable weeds. In the profiles <157> and <117> the latter become more important in the upper levels of the profile. This probably indicates that human activity/land use was increasing throughout the middle and late Bronze Age. Cereal pollen is present to the base of the profiles suggesting that cultivation was taking place shortly after the time of barrow construction. However, it is, as noted, probable that initial clearance for agriculture or even possibly by preceding ephemeral Mesolithic activity (Keefe *et al*. 1965) resulted in soil deterioration and podzolisation. Such soils would not have been suitable for arable crops and pollen representation may come from further afield. As noted, the heathland itself on which the barrow was constructed will have been maintained by burning and from use as rough grazing.

4.b.) Comparison with other barrow pollen data
The analysis of Binnegar suggests that whilst heathland vegetation was important on the site, there was perhaps a mosaic of remaining oak and hazel woodland in the local area and alder in the wetter valley bottoms. This may be regarded as transitional between earlier climax/dominant woodland and the greater expansion of heathland during the middle Bronze Age (Haskins 1978). This is also evidenced from the early analyses by Prof. G.W. Dimbleby of the nearby early Bronze Age mound at Chicks Hill (Ashbee and Dimbleby 1958) and at Knighton Heath Poole (Dimbleby 1952). Both sites showed the importance of oak, alder and especially hazel at time of barrow construction. A more complex sequence of events was described for Black Down, Portesham (Dimbleby 1957). At the latter site, pollen data provide evidence of an early period of forest comprising oak with some lime, birch, elm and occasional pine. Such evidence of the initial forest composition is, unfortunately, not present at Binnegar. This gave way to more open country with bracken, grass and weeds of cultivation and was followed by some regeneration of hazel and alder. Subsequently, clearings were made in which ivy grew or was placed as fodder and in which the mound was constructed.

More recent pollen analyses come from the soils underlying Bronze Age barrows at Canford Heath, Poole (Haskins 1980), East Holme (Scaife 1991b) and Golden Cap (Scaife 1997). At the former, hazel was found to be important but with strong representation of ling (*Calluna*) indicating on-site, dry heath with scattered birch and hazel scrub. In common with all of the sites, alder pollen is also present coming from adjacent valley wetland habitats. Whilst Golden Cap shows greater importance of trees and shrubs during the early bronze Age with oak (to 33%) and hazel (50-53%), Squirell Cottages at East Holme shows that significant soil deterioration and podzolisation had taken place with the barrow being constructed on *Erica* (heather) and *Calluna* (ling) heathland. Hazel is, however, also present as the transitional element between woodland and development of heath.

5.) Conclusions

Excavation of the Binnegar ring ditch afforded the opportunity to examine the Bronze Age environment in which the barrow was constructed. Unfortunately, no sub-barrow old land surface/palaeosol remained. However, pollen data have been obtained from the lower fills of the ditch from which well preserved pollen was recovered. As might be expected because of their proximity, the three profiles examined are largely comparable. The vegetation and environment at/immediately after the barrow construction was a mosaic with on-site heathland dominated by ling (*Calluna*) with heather (*Erica*) with some areas of oak and hazel. This woodland has been regarded as transitional between what was probably dominant woodland on sandy brown earth soils and well developed heathland on acid, podzolic soils. Bronze Age activity was responsible for these pedological and vegetation changes. Data obtained are in accord with earlier studies of Bronze Age soils underlying funerary mounds in this region.

The central pit at Binnegar has also been examined and it appears as thought that this is a very recent robber trench.

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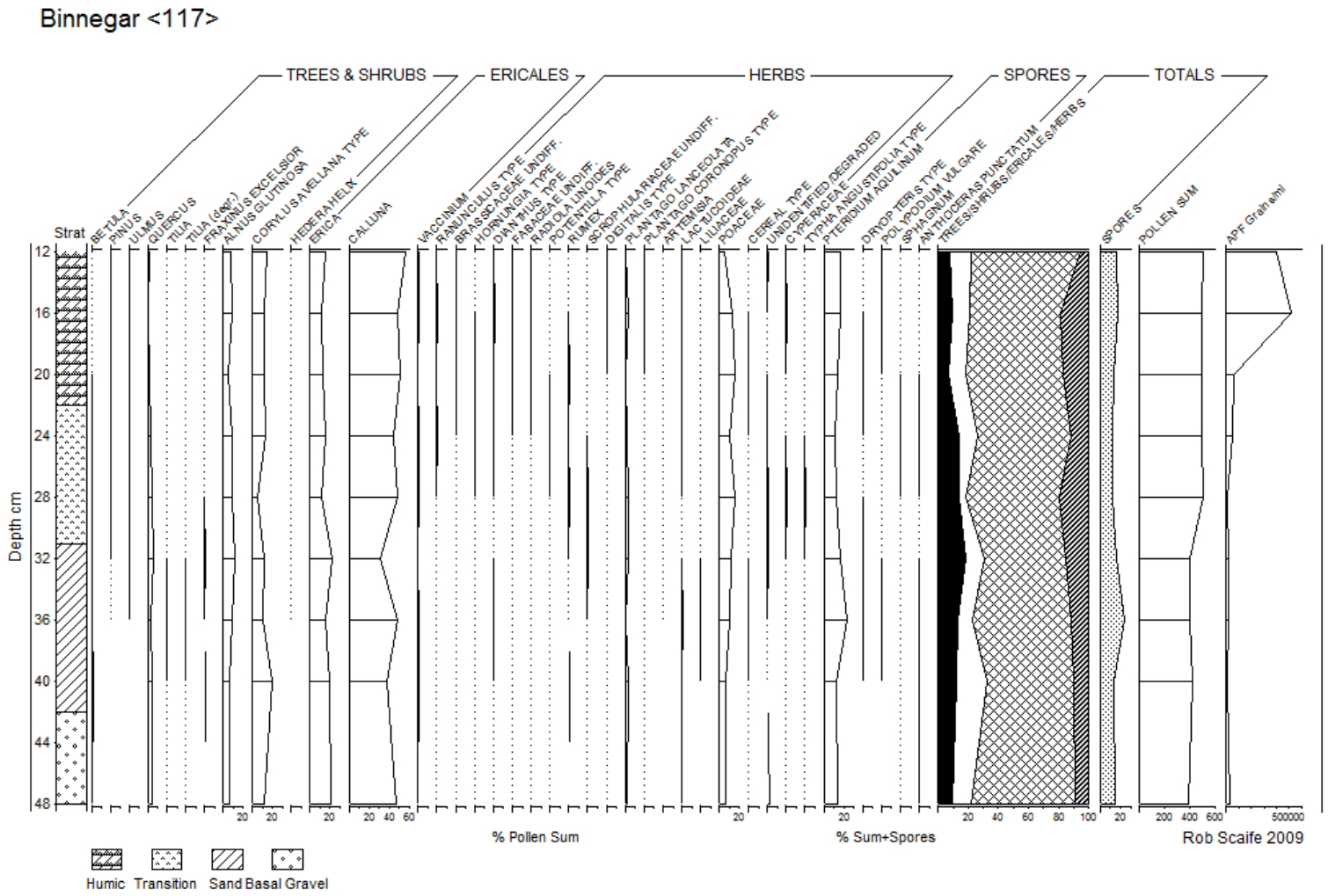

Figure 5. Pollen diagram for Column sample <117>

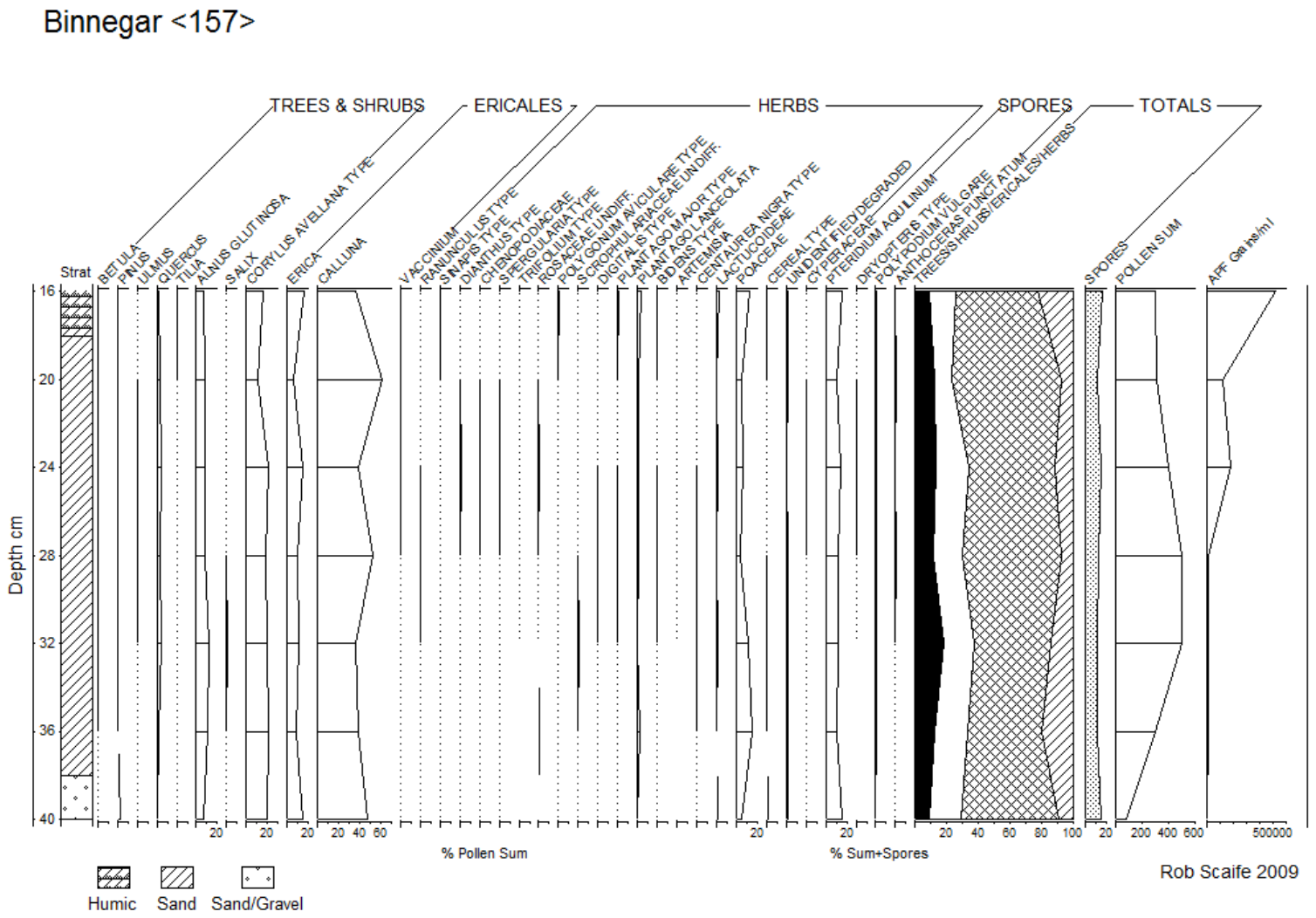

Figure 6. Pollen diagram for Column sample <157>

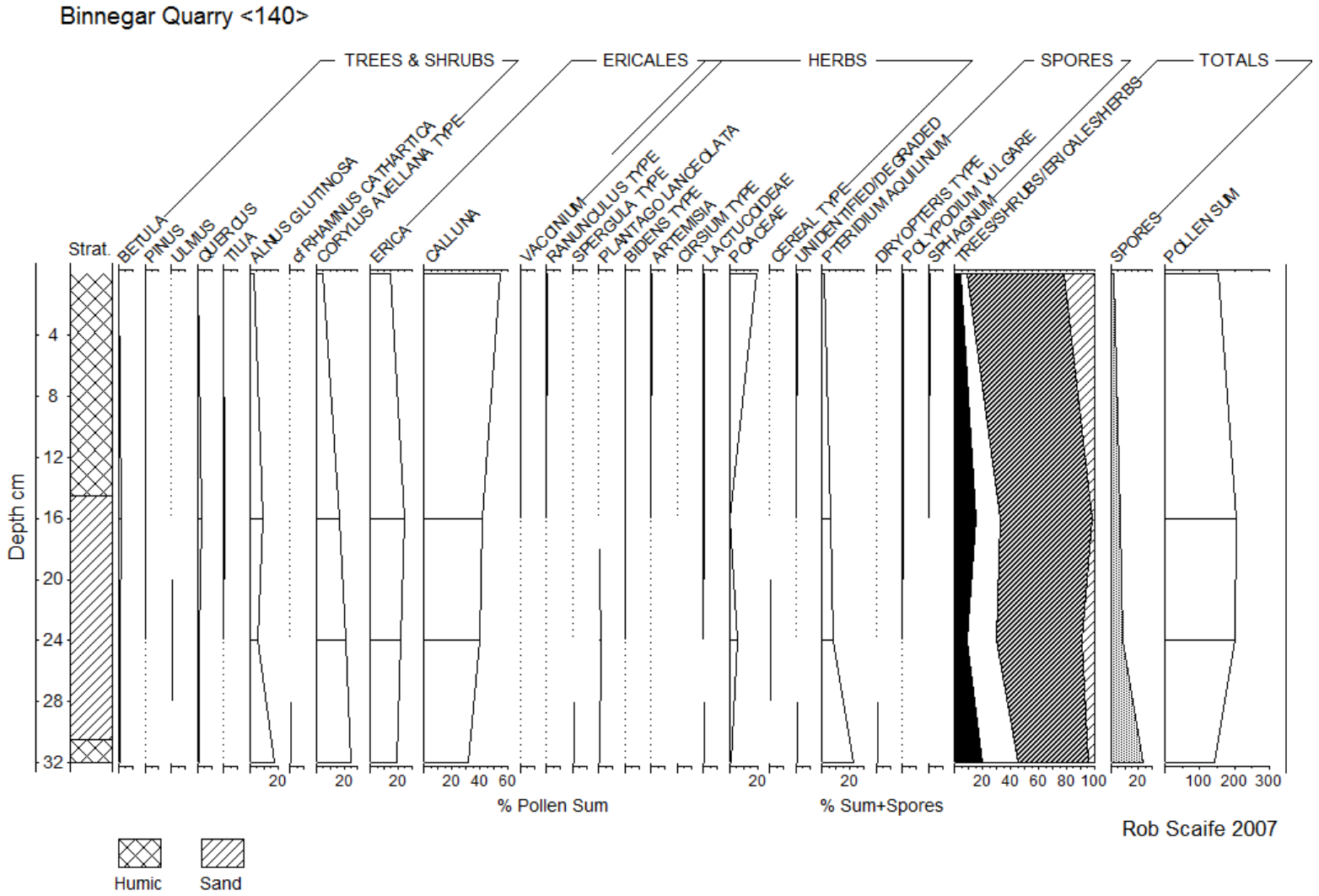

Figure 7. Pollen diagram for Column sample <140>

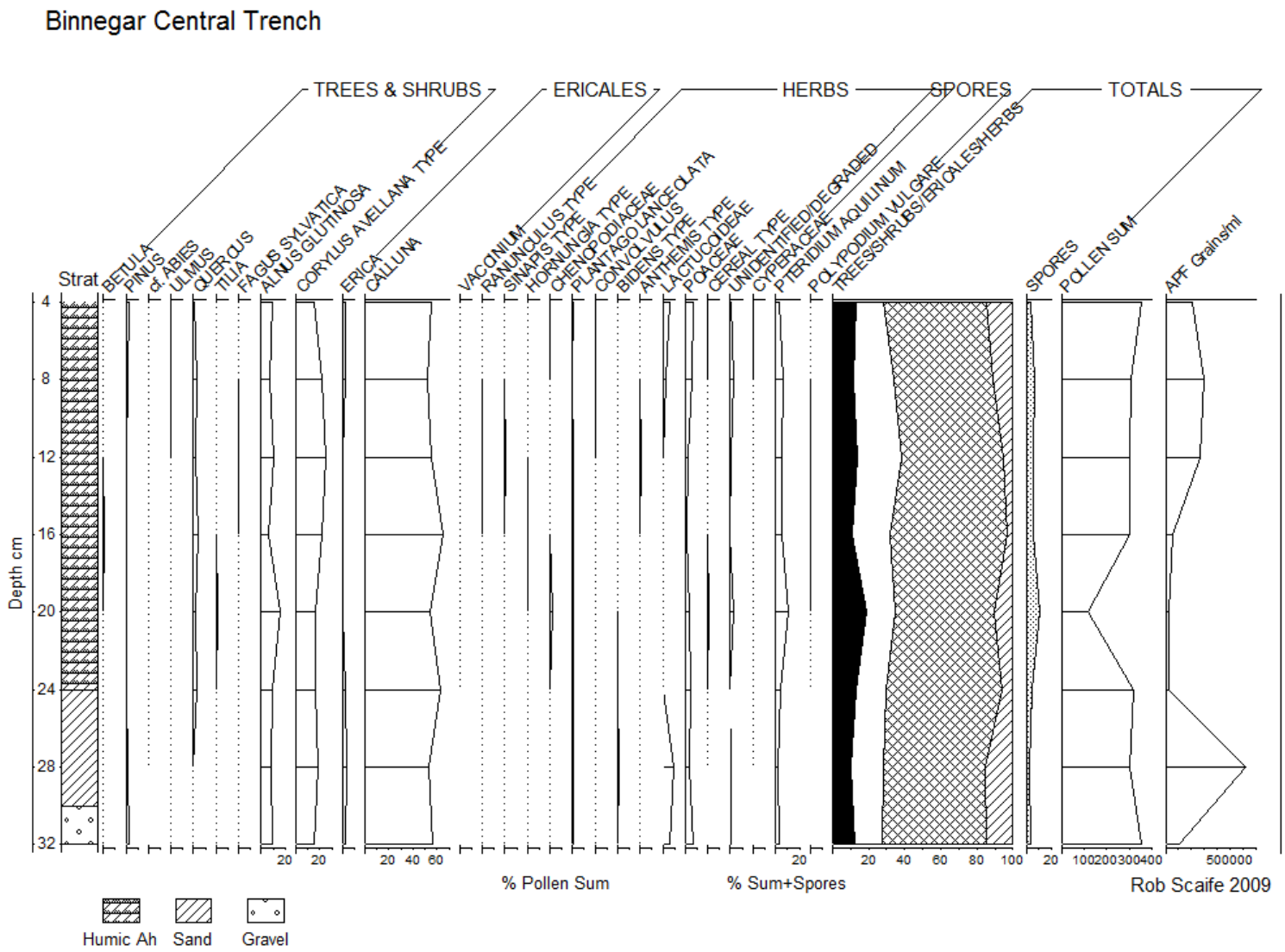

Figure 8. Pollen diagram for Column sample <166>

Appendix 7. Scheduled Monument Consent

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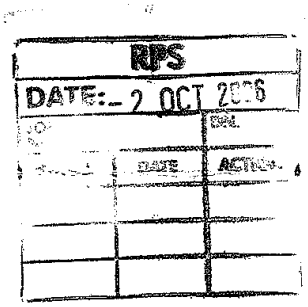
Your Ref MR/jd/JR5474B
Our Ref HSD 9/2/8583

29 September 2006



Dear Sir

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979 (AS AMENDED) – SECTION 2
PROPOSED WORKS AT BOWL BARROW ON FARM HEATH, 450M SW OF WORGRET HEATH FARM, EAST STOKE, PURBECK, DORSET
NATIONAL MONUMENT NUMBER: 29061
APPLICATION BY: RPS PLANNING, TRANSPORT & ENVIRONMENT LTD, ON BEHALF OF SITA UK

1. I am directed by the Secretary of State for Culture, Media and Sport to refer to your application for scheduled monument consent dated 30th August 2006 and to RSP's Written Scheme of Investigation dated August 2006 submitted therewith in respect of proposed works at the above scheduled ancient monument concerning the detailed archaeological excavation of remaining elements of the monument.

2. In accordance with paragraph 3(2) of Schedule 1 to the 1979 Act, the Secretary of State is obliged to afford to the applicant, and to any other person to whom it appears to the Secretary of State expedient to afford it, an opportunity of appearing before and being heard by a person appointed for that purpose. This opportunity has been declined in your telephone conversation with Mrs A Daines of the Department on 29 September 2006.

3. The Secretary of State is also required by the Act to consult with the Historic Buildings and Monuments Commission for England (English Heritage) before deciding whether or not to grant scheduled monument consent. Having received the advice of English Heritage, the Secretary of State considers that the proposed works will result in the loss of buried archaeological evidence for which preservation in situ is not regarded as feasible. Appropriate

arrangements for essential archaeological excavation are specified in the application. The Secretary of State is agreeable for the works to proceed providing the conditions recommended by English Heritage, and set out below, are adhered to and accordingly hereby grants scheduled monument consent under section 2 of the 1979 Act for the proposed works as referred to in paragraph 1 above, subject to the following conditions:-

i. The works to which this consent relates shall be carried out to the satisfaction of the Secretary of State, who will be advised by English Heritage. At least 4 weeks' notice, (or such period as may be mutually agreed) in writing of the commencement of work shall be given to Phil McMahon, Inspector of Ancient Monuments, English Heritage, 29 Queen Square, Bristol BS1 4ND, in order that an English Heritage representative can have the opportunity to inspect and advise on the works and their effect in compliance with this consent.

ii. All those involved in the works must be informed of the scheduled status of the monument, its extent, and the legal obligations which apply.

iii. Equipment and machinery shall not be used or operated in the scheduled area in conditions or in a manner likely to result in damage to the monument or ground disturbance other than that which is expressly authorised in this consent.

iv. The project design (including analysis, post excavation and publication proposals) for which consent is granted shall be executed in full, unless variations have been agreed under the terms of condition 1.

4. By virtue of section 4 of the 1979 Act, if no works to which this consent relates are executed or started within five years from the date of this letter, the consent shall cease to have effect at the end of that period (unless it is revoked before then).

5. This letter does not convey any approval or consent required under any enactment, bye law, order or regulation other than section 2 of the Ancient Monuments and Archaeological Areas Act 1979.

6. Attention is drawn to the provisions of section 55 of the 1979 Act under which any person (hereinafter referred to as the "applicant") who is aggrieved by the decision given in this letter may challenge its validity by an application made to the High Court within six weeks from the date when the decision is given. The grounds upon which an application may be made to the Court are (1) that the decision is not within the powers of the Act (that is, the Secretary of State has exceeded her powers) or (2) that any of the relevant requirements have not been complied with and the applicant's interests have been substantially prejudiced by the failure to comply. The "relevant requirements" are defined in section 55 of the 1979 Act: they are the requirements of that Act and the Tribunals and Inquiries Act 1971 and the requirements of any regulations or rules made under those Acts.

7. A copy of this letter is being sent to English Heritage; to Steve Wallis, Senior Archaeologist, Dorset County Council, County Hall, Colliton Park, Dorchester, Dorset DT1 1XJ and to Peter Addison, English Heritage Field Monument Warden, The Cottage, Kale Street, Batcombe, Shepton Mallet, Somerset BA4 6AD.

Architecture & Historic
Environment Division

Yours faithfully

a. R. Middleton

A. R. Middleton (Miss)
Authorised by the Secretary of State
to sign in that behalf