CPAT Report No. 1592

Beacon Ring Hillfort, Welshpool, Powys

Archaeological Investigations 2018

Llywodraeth Cymru
Welsh Government

Cadw

YMDDIRIEDOLAETH ARCHAEOLEGOL CLWYD-POWYS

CLWYD-POWYS ARCHAEOLOGICAL TRUST

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Summary

A programme of further investigations at Beacon Ring hillfort was undertaken by the Clwyd-Powys Archaeological Trust in 2018, with financial support from Cadw.

Fieldwork included topographic and geophysical survey, and the excavation of six trial trenches. Topographic survey was constrained by woodland but recorded the main ramparts in some detail. Geophysics was carried out at the south-west entrance but the results were inconclusive.

One of the six trenches examined the rampart on the eastern side of the monument. The results suggested that the bank had probably been built in a single event from material excavated from the ditch. The shallowness of the ditch deposits suggests that the ditch may also have been emptied or cleaned out subsequently. The pre-rampart peaty ground surface was sampled, but the range of dates implied that the material was mixed and unreliable in obtaining a date for the construction of the hillfort. Two trenches investigated the south-west entrance, revealing a single post-hole probably associated with a medieval township boundary and some post-medieval cart tracks. Three trenches investigated the interior but found no features or occupation contemporary with the hillfort; disturbance caused by an earlier forestry plantation was evident in the layers above the natural subsoil.

Crynodeb

Bu Ymddiriedolaeth Archaeolegol Clwyd-Powys yn cynnal rhaglen o ymchwiliadau pellach ym mryngaer Caer Digoll yn 2018, gyda chymorth ariannol oddi wrth Cadw.

Roedd gwaith maes yn cynnwys arolwg topograffig a geoffisegol, a gwaith cloddio chwe rhych arbrofol. Roedd y coetir yn cyfyngu ar yr arolwg topograffig, ond cofnodwyd y prif ragfuriau yn bur fanwl. Gwnaed geoffiseg ar fynedfa'r de-orllewin ond roedd y canlyniadau'n amhendant.

Roedd un o'r chwe rhych yn edrych ar y rhagfur ar ochr ddwyreiniol yr heneb. Roedd y canlyniadau'n awgrymu ei bod yn debygol bod y clawdd i gyd wedi'i adeiladu ar yr un tro, o ddehongli'r deunydd a gloddiwyd o'r ffos. Mae baster dyddodion y ffos yn awgrymu ei bod yn bosibl bod y ffos hefyd wedi'i gwagio neu ei glanhau wedi hynny. Cymerwyd samplau o arwyneb y tir mawnaidd cyn codi'r rhagfuriau, ond roedd ystod y dyddiadau'n awgrymu mai cymysg oedd y deunydd, a'i fod yn annibynadwy o ran cael y dyddiad yr adeiladwyd y fryngaer. Roedd dwy rych yn edrych ar fynedfa'r de-orllewin, gan ddatgelu un twll postyn, mae'n debyg yn gysylltiedig â therfyn trefgordd ganoloesol, a rhai traciau certi ôl-ganoloesol. Roedd tair rhych yn edrych ar y tu mewn ond ni ddaethpwyd ar draws unrhyw nodweddion neu dystiolaeth o anheddu a oedd yn cyfoesi â'r fryngaer; roedd aflonyddu yn sgil plannu coedwig yn gynharach i'w weld yn yr haenau uwchben yr is-bridd naturiol.

1 Introduction

1.1. The following report deals with investigations carried out at the hillfort near Welshpool called Beacon Ring, and also known by its Welsh name of Caer Digoll, during the 2018-19 season, with funding from Cadw. The work formed a selective continuation of a wider project focusing on hillforts along the Welsh Marches.

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Fig. 1: Location of Beacon Ring

1.2. There are over 2,500 hillforts in the Clwyd-Powys region, of which only five have seen significant archaeological investigations in the last fifty years. Consequently, archaeological understanding of hillforts is limited, despite their monumental and impressive remains. Outside the archaeological community, even their monumentality and impressiveness is not often appreciated, and their role in prehistoric society barely considered.

1.3. Beacon Ring is a scheduled monument (MG 011) and scheduled monument consent was therefore obtained from Cadw in advance of fieldwork. The investigations in 2018 involved additions to the overall measured survey of the monument, a limited programme of geophysics at the south-west entrance and the excavation of a series of trenches and test pits designed to further understand the deposits identified by augering in 2017-18.

1.4. The work was carried out in line with the following Standard and Guidance documents produced by the Chartered Institute for Archaeologists (CIfA): Archaeological Excavation (2014); Archaeological Field Evaluation (2014); and Archaeological Geophysical Survey (2014).

2 Background

2.1. Beacon Ring is located approximately 4km east-south-east of Welshpool, in a prominent position overlooking the Severn Valley and lying close to the border between England and Wales (NGR SJ 2649 0579; Fig. 1). The site covers an oval area of approximately 3.25ha, measuring 230m north/south by 175m east/west. Two entrances are apparent, at the northern tip and on the south-west, though whether both of these are original features of the hillfort has been open to question. The site has not previously been excavated, but was probably first built and occupied at some time in the period between the later Bronze Age and the early Iron Age – after 1000 BC and before the arrival of the Romans in about AD 50.

2.2. The site featured in more recent history, and is referred to in the 9th- or 10th-century saga known as *Canu Llywarch Hen* ('The song of Llywarch the Old') where, in a passage about hostilities in the 7th century between the British prince Cadwallon and Edwin, the Anglo-Saxon King of Northumbria, Beacon Ring is described, somewhat poetically, as the *lluest* or camp of Cadwallon where he stayed for seven months, carrying out seven skirmishes daily. The locality was also a major rallying point for the army of Henry VII on his journey to Bosworth Field in August 1485 and the battle which led to the founding of the Tudor dynasty.

2.3. The English name of Beacon Ring probably derives from the hillfort being the site of a beacon in the post-medieval period; one is depicted on a 17th century map of the locality and the hillfort is correspondingly named on the 1816 Ordnance Surveyors drawing. Ironically, Henry VII's protagonist, Richard III, was influential in the creation of a signalling system in Wales to warn him of Henry's approach; it is possible that this beacon was a survivor of that system. A mound within the hillfort has been identified as a barrow in the Historic Environment Record (HER), which notes that it was opened in the late 18th century, revealing a cremation. The HER also notes that evidence of bonfires was found so it seems probable that this was the site of the beacon.

2.4. On the 1847 Tithe map for Worthen parish, the hillfort is divided by the extant township boundary between Trelystan and Leighton; these administrative divisions were in place at least as early as the time of the Domesday Survey in the 11th century. The western side of the boundary, in Leighton township, is described in the apportionment as rough pasture, while the east side was in Trelystan township, where the field, identified as common land, was known as 'Beacon Ring'. The boundary between the townships (see Fig. 2) is also depicted on the first edition Ordnance Survey 25" map of 1883, which appears to show the land use as unchanged. However, by the time the second edition Ordnance Survey map was produced in 1902, the interior of the hillfort was occupied by a conifer plantation.

2.5. It seems likely that the plantation was felled very soon afterwards and the land converted back to pasture, as no mention of woodland is made in the Royal Commission's (RCAHMW) Inventory of 1911, which is based on a visit to the site in 1909. This record provides a plan and a simple description of the earthworks and notes some interesting additional information, including that there was a trackway which ran between the northern and south-western entrances (see Fig. 2). Some doubt was expressed regarding the authenticity of the northern entrance and it was also suggested that the south-western entrance might have been widened. Of particular

interest is the statement that there were no indications of any dwellings within the interior.

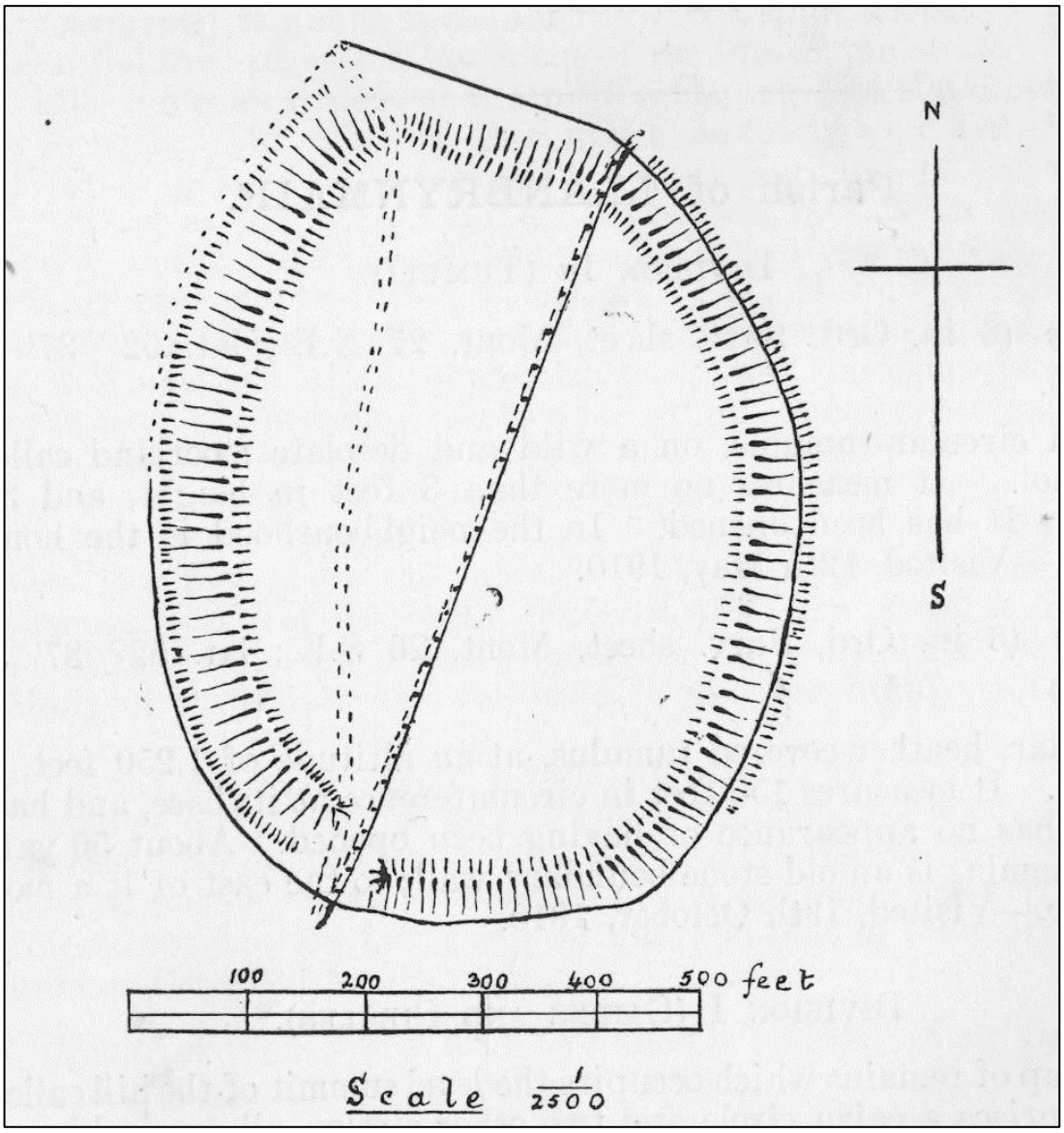

Fig. 2: The 1911 RCAHMW plan of Beacon Ring, showing the route of the trackway in 1909, with the township boundary crossing the hillfort

2.6. The area continued in use as upland pasture, as indicated by the construction of a triangulation point by the Ordnance Survey in 1948, for which clear views of the surrounding area would have been required. This was built partly into the barrow in the hillfort interior.

2.7. However in 1953 the interior of Beacon Ring was once again planted with trees. This time these were a mixture of conifers and deciduous trees, placed such that they created the symbols EIIR (Elizabeth II Regina) when viewed from the air (Fig. 3). A memorial stone within the plantation records that the trees were planted in December 1953; a detailed examination of the background to the plantation is currently in preparation (Britnell, 2019 forthcoming).

Fig. 3: An aerial view of Beacon Ring, viewed from the east. Photo CPAT 08-c-0317.

3 Methodology

3.1. The work at Beacon Ring in the 2018-19 season comprised three main elements. First, a programme of additional topographic survey was carried out so that the contours of the hillfort defences could be accurately mapped. Second, targeted geophysics was carried out on the south-western entrance in an attempt to identify any sub-surface features that might then be investigated in the third and final phase of work – the excavation of a series of trial trenches placed there, in the interior and across the rampart. The first two elements were carried out by Archaeological Survey West on behalf of CPAT under the close supervision of CPAT staff.

4 Survey results

4.1. The topographic survey was carried out with survey grade GPS equipment and the results plotted against the Ordnance Survey background mapping to create a contour map of the earthworks at 0.5m intervals. It was impossible to survey more than a very small amount of the hillfort interior owing to the presence of the forestry plantation, which blocked the GPS signal.

4.2. The morphology of the hillfort has already been discussed in the 2017-18 report and does not need to be recounted here. The additional survey carried out in 2018 has provided a comprehensive view of the earthworks (Fig. 4), though the plantation in the interior has masked that area and the inner face of the bank on the west and north-east sides.

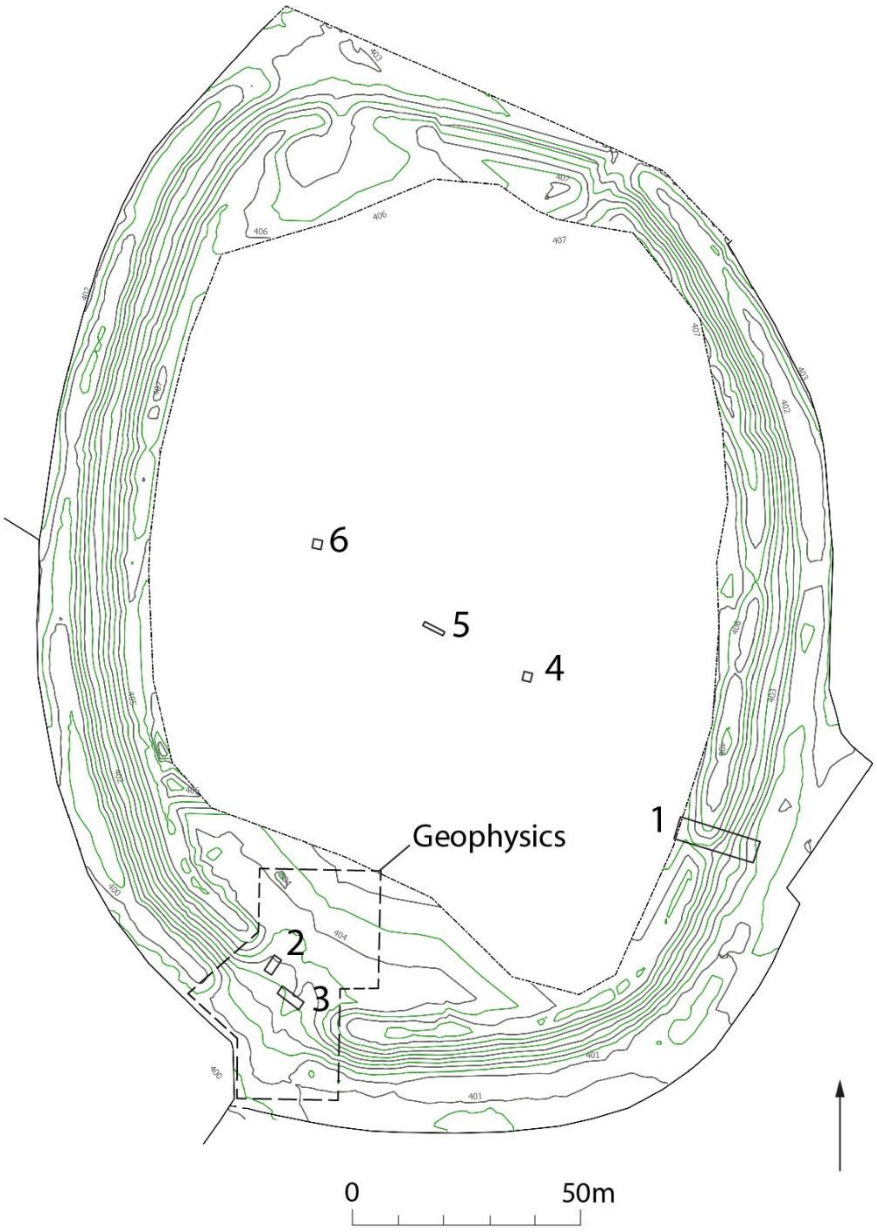

Fig. 4: Contour plan of Beacon Ring hillfort defences, showing area of geophysics and the trench locations (numbered 1-6)

5 Geophysics

5.1. The geophysics results from the work by Archaeological Survey West are presented on the following figures and described below. Geophysical survey at the south-western entrance used two different methods, magnetometry and resistivity, to see if more could be gained from a combined approach. A Bartington 601 dual sensor magnetic gradiometer was used to produce two plots, one with the readings taken on a north/south traverse alignment and the second with traverses on an east/west alignment. In both cases readings were taken every 0.25m on traverses 1m apart.

5.2. The resistivity survey was carried out over a smaller area within the entrance using a Geoscan RM15 resistance meter with a 4-probe multiplexer array. Readings were taken every 0.5m along traverses 1m apart, providing results from a depth of 0.5m.

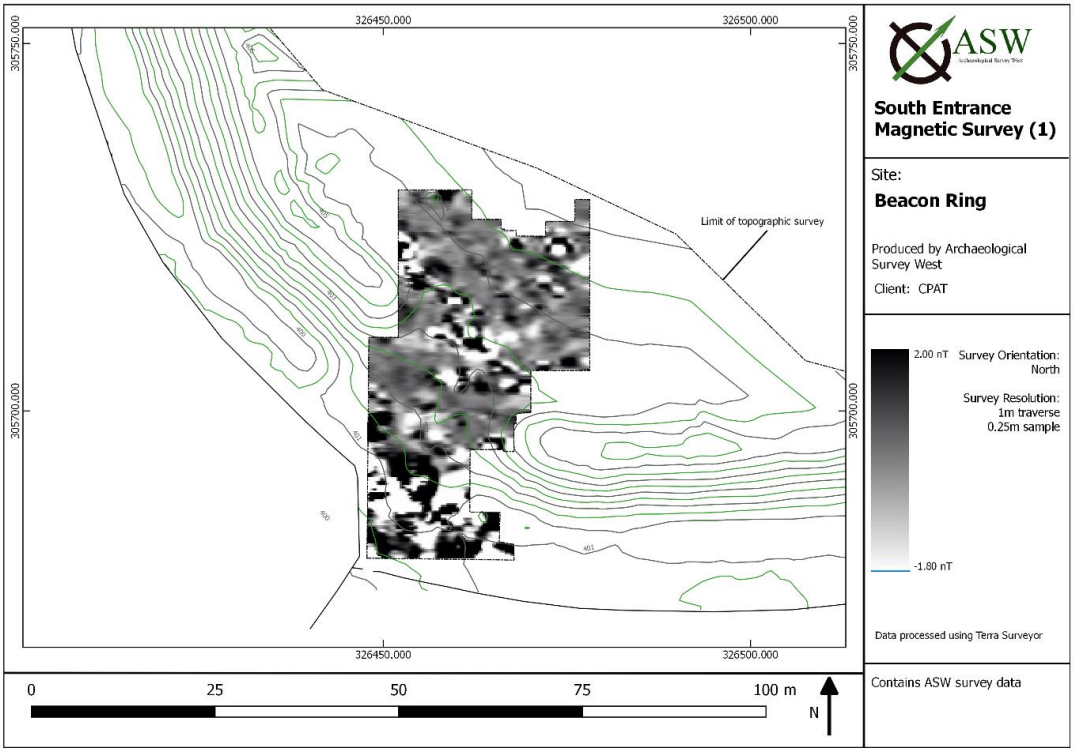

Fig. 5: Magnetic survey, north/south aligned traverse plot

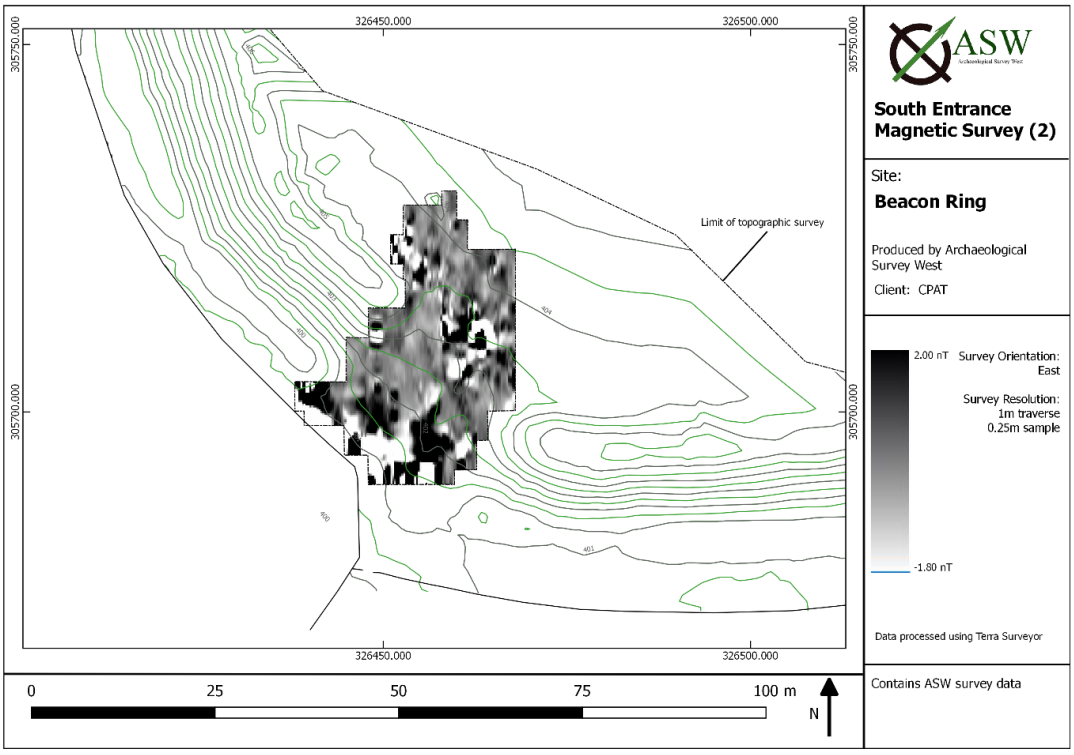

Fig. 6: Magnetic survey, east/west aligned traverse plot

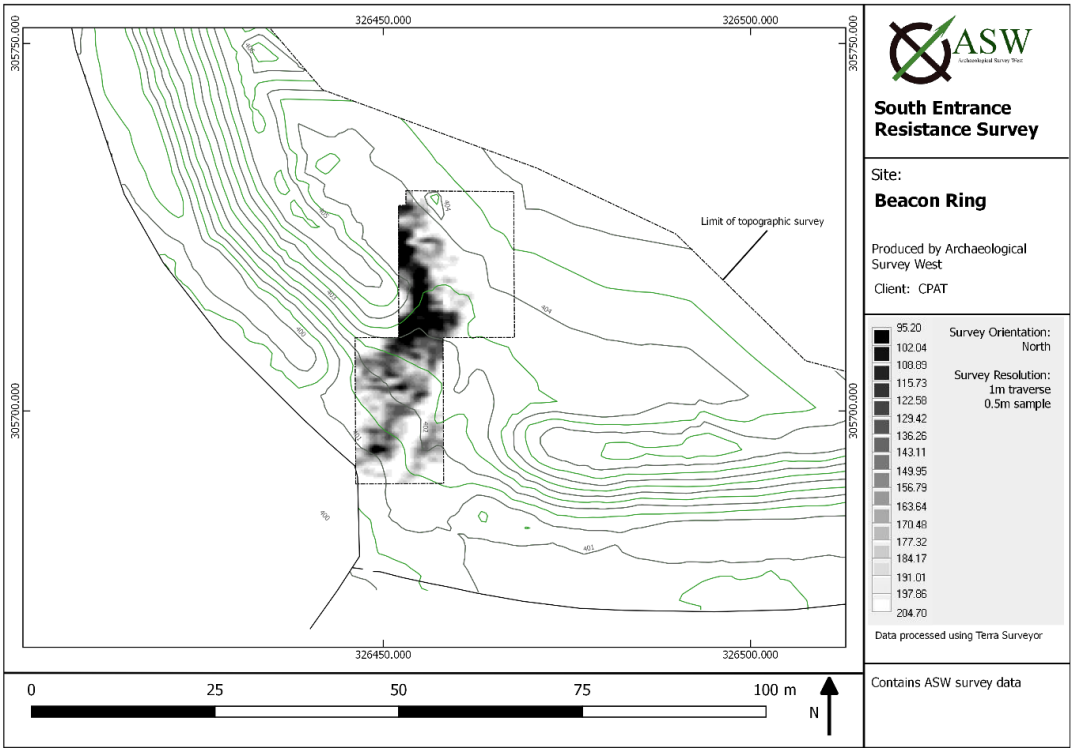

Fig. 7: Resistance survey plot

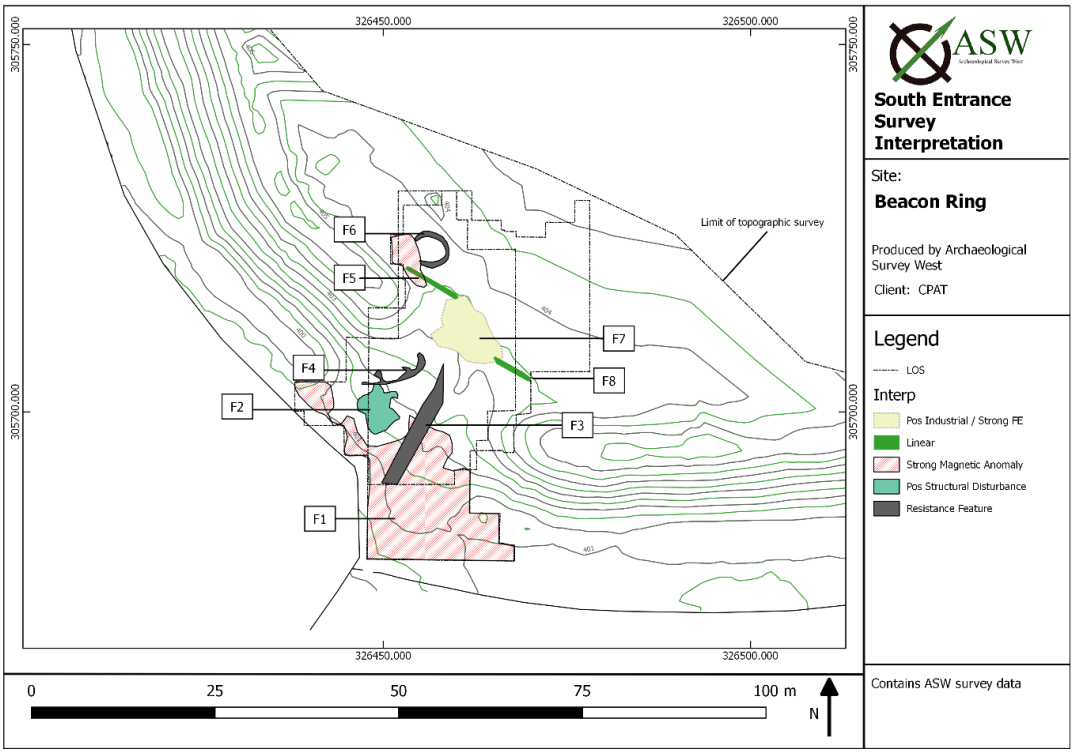

Fig. 8: Interpretation plot

5.3. The anomalies of archaeological potential identified by the survey are illustrated on Fig 8. The results were somewhat equivocal, though there were hints of possible structural evidence related to the hillfort entrance. It might also be noted that the

results of augering combined with survey here in 2017-18, had suggested that the current appearance of the entrance was broadly original and not the result of later disturbance and widening, as had been previously suggested. The tail of the bank on the north-west side of the entrance, or eroded material from it, is visible as a curved area of higher resistance adjoining the bank on Fig 7.

5.4. One of the most relevant of the anomalies was feature F2, identified through a combination of magnetic and resistance survey, which could indicate a structural disturbance with possible post holes. Also of possible structural form were the features F5 and F8, which cross the opening of the south-western entrance and seem to comprise a combination of two staggered linear features, separated by an area of magnetic noise (F7) which resembles an area of thermoremanent magnetism from burning; this was not identified when its position was later excavated, however, and some or all of these may owe their appearance to magnetic noise from material within the soil. Feature F6 could identify a possible circular feature measuring 6m in diameter and sited within the enclosure but it is equally possible that it and F4, which are both resistance anomalies, may owe their appearance to non-archaeological factors.

5.5. Of the other features identified, feature F1 probably indicates a spread of ferrous material in the outer part of the entrance, which may be of relatively recent origin. F3 lies parallel and to the west of the township boundary bank that runs through the centre of the hillfort, though no evidence of a corresponding ditch on this side was revealed in the Trench 3 excavation described in the following section.

6 Excavation

6.1. A total of six separate excavations were carried out, comprising three small trenches in the interior, two trenches in the south-west entrance and a larger trench across a damaged section of the rampart on the east side of the hillfort (see Fig 4).

Trench 1 (see Fig. 10)

6.2. Trench 1 was placed on the north side of a gap through the rampart; it was considered to be more appropriate to excavate in a locality where there had been some past disturbance, rather than impacting on an undisturbed section. The trench was aligned west-north-west/east-south-east and the turf was initially stripped over an area of 18.20m by 5.00m, though the excavation was subsequently restricted to the southern half of this area, giving a final trench width of 2.50m. Only the western part of the ditch was excavated.

6.3. The natural subsoils were preserved beneath the bank of the hillfort and comprised a basal layer of orange-grey clay (16), over 40mm thick but probably extending to a much greater depth; this was respectively overlain by 40mm of grey clay (15) and 30mm of dark grey peat/peaty silt (7), which represented the ground surface at the time the hillfort rampart was constructed. With this in mind a series of soil samples were taken to allow for the extraction of material for pollen analysis and dating; the results of the latter are given in Appendix 1 and both this and the pollen sampling results are analysed in Section 7.

Fig. 9: Trench 1 after excavation, showing the old ground surface beneath the bank, from south. CPAT 4588-0039

6.4. The rampart ditch (14) proved to be approximately 13.00m wide by 1.60m deep and had cut through all of the above layers, with the excavated material being used to create the corresponding bank (18), approximately 8.50m wide and originally perhaps 2.50m high, though 0.50m lower than this in the recorded section.

6.5. Two layers of bank material were identified of which the lower was a mixed layer of brown, orange and grey clay and clay silt (9), up to 1.55m thick. This material was clearly redeposited from the excavation of the ditch and comprised a series of dumps which included lines of iron pan and peat that had once been part of layers 7, 15 and 16. The appearance of the deposit indicates that a fairly level top was maintained initially, but that it became more rounded from about 1.00m high. The upper layer of bank material was of a different character, comprising an approximately equal mix of yellow-brown silt and friable shale (8), approximately 0.50m thick and no doubt from the base of the ditch.

6.6. On the east side of the bank there was a level berm, perhaps 1.50m wide, formed from about a 0.30m-thick tongue of material from layer 9. This is presumably the same as the berm which is visible elsewhere around the circuit of the defences and it seems to have been part of the original design and construction of the bank. Its purpose is not certain: one possibility is that the berm facilitated bank construction by allowing material to be added to the top of the bank in stages. Here the berm had been covered by a wedge of brown stony silt (10) up to 0.65m thick, which seemed to have resulted from the erosion of the two layers making up the bank.

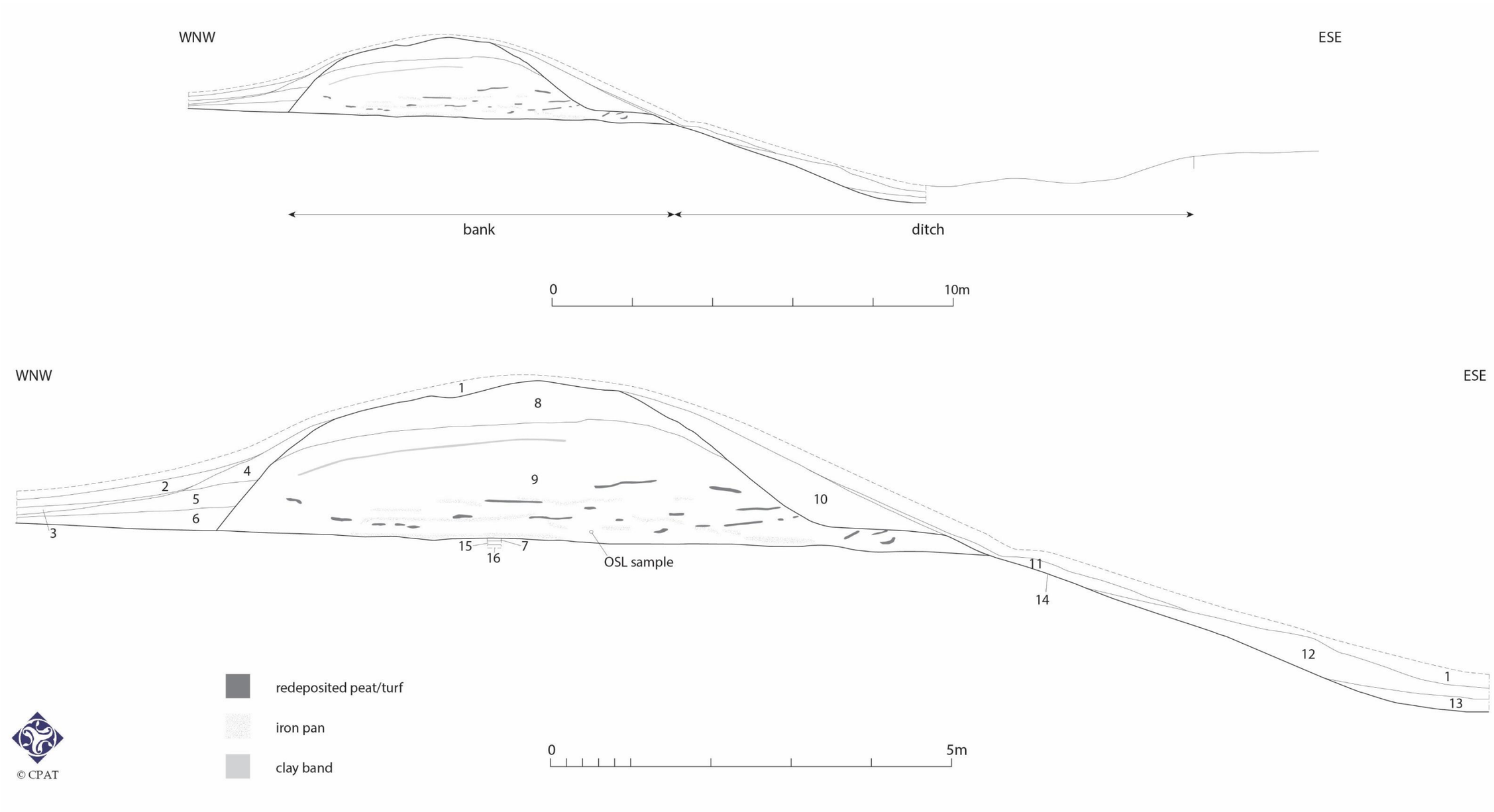

Fig. 10: The section through the rampart exposed in Trench 1

Fig. 11: Trench 1 after excavation, showing the old ground surface beneath the bank with the material covering the berm visible in section. CPAT 4588-0039

6.7. Further material indicating erosion from the outer face of the bank and the adjoining ditch took the form of a series of thin layers lying on this slope of the rampart. These were successively a layer of orange-grey clay (13), up to 0.16m thick, a brown clay silt (12), 0.40m thick, and an uppermost layer of brown silt with small stones (11), up to 0.15m thick, which covered the junction between bank and ditch.

6.8. On the west side of the bank, erosion from it had created a series of three layers which had smoothed the original profile. The earliest of these was an orange-grey stony clay silt (6), up to 0.28m thick and thinning to the west, which was overlain by a similar orange-grey clay silt (5), up to 0.30m thick; these may represent the same event but layer 5 had notably less stone within it than layer 6. The eastern part of layer 5 was covered by brown stony silt (4), up to 0.40m thick, which appeared to represent erosion of the uppermost layer (8) forming the bank, as it contained a large proportion of shale fragments.

6.9. Subsequent to, or perhaps at the same time as, the deposition of layer 4 it appeared that there had been some ponding of water behind the bank, characterised by a thin layer of yellowish-grey clay silt (3), up to 0.10m thick, and this was succeeded by a banded grey-brown peaty silt (2), up to 0.18m thick, which indicates a degree of waterlogging associated with the deposition of humic material from rotting vegetation. The interior at this point is shown as the site of a pond on the 1847 Tithe map.

6.10. All of the above was covered by the surface topsoil, a dark grey-black peaty silt (1), up to 0.20m thick.

Trench 2

6.11. The trench was placed to intersect geophysics feature F7 in the north-west part of the south-west entrance and measured 4.10m north-east/south-west by 2.00m wide.

Fig. 12: Trench 2 showing cart tracks in layer 23, from south-west. CPAT 4588-0085

6.12. The natural subsoil was a grey clay silt (28), exposed in a metre-square sondage at the east corner of the trench, and was overlain by a 0.10m-thick layer of yellow-grey clay silt (23) with some iron staining. This was also probably of natural origin, and had a covering layer of grey silt (22) with some peat. A feature cut layers 22 and 23 (Fig. 12), consisting of two lines of broadly parallel grooves (24 and 25) filled by grey peaty silt (26 and 27). The grooves were approximately 0.85m apart (+/- 0.05m) and appear to reflect the location and orientation of the trackway noted by the RCAHMW in 1909 (Fig. 2); this would appear to be the most likely interpretation.

Trench 3

6.13. Trench 3 was placed across the line of the township boundary where it passed through the south-west entrance. The trench measured 6.00m north-west/south-east by 2.00m wide. The natural subsoil here was a yellowish-grey clay silt (37), of which the central part, some 1.50m across and lying beneath the boundary bank, was raised by about 0.15m. This may reflect erosion to either side of an original boundary but there was no real sign of a corresponding ditch. A small pit (38) had been dug into the top of the raised area, measuring 0.70m north-east/south-west by 0.35m wide and 0.10m deep, filled by a mixed yellowish silt (39) with lumps of peaty material. Its function was unclear, beyond indicating that there was once some kind of structure in this location, perhaps more likely associated with the boundary than the hillfort entrance.

Fig. 13: Trench 3, the raised area and pit 38, from south-east. CPAT 4588-0122

Fig. 14: Trench 3, showing the raised area and pit 38, from north. CPAT 4588-0137

6.14. Grey clay had subsequently built up on the north-west (33) and south-east (34) sides of the raised area, to a thickness of between 0.10m and 0.16m, and it was at this point that the extant boundary bank had been constructed from a mixture of peaty material and yellowish silt (32), to a height of 0.55m. More recently a gully (35), 0.20m wide, had been cut along the south-east side of the bank for the installation of a sectional

ceramic drain set within brown silt (36). All of the above were covered by a layer of grey-brown topsoil (31), 0.20m thick.

Trench 4

6.15. This excavation comprised a 2.00m-square test pit in the eastern part of the hillfort interior. Natural subsoil here was an orange-grey clay silt (44) and this was overlain by a mixed black peat and grey silt (43), up to 0.15m thick but severely affected at some point in the past by tree roots, probably from the conifer plantation mapped in 1902 (see paragraph 2.4). Filling the gaps where the roots had rotted away and to a maximum total thickness of 0.15m was a layer of loose black peat (42) that was covered by 0.05m of brown leaf litter (41).

Fig. 15: Trench 4 after the peat layer (42) was removed and showing the historic root damage, from south-south-west. CPAT 4588-0083

Trench 5

6.16. The trench was excavated across the line of the township boundary, near the centre of the hillfort and measured 5.00m by 1.00m. Here the boundary was much less pronounced than at the south-west entrance, comprising a shallow gully (54), 1.70m wide and only 0.20m deep, cut into the natural grey clay silt subsoil (53). Filling the gully and extending to either side of it was a very mixed layer of grey clay silt and dark grey peaty silt (52), up to 0.30m thick, which had been badly affected by tree roots and was covered by a 0.10m-thick layer of brown leaf litter (51). The bank that once existed seemed to have been disturbed to the point where it was no longer evident.

Fig. 16: Trench 5 after excavation, from south-east. CPAT 4588-0115

Trench 6

6.17. The excavation comprised a 2.00m-square test pit in western part of the interior. The natural grey silt subsoil (63) was covered by a layer of dark grey peaty silt (62), 0.15m thick, which contained evidence of disturbance by root action. It was covered by a 0.05m thick layer of brown leaf litter.

Fig. 17: Trench 6 after excavation, from north-north-east. CPAT 4588-0098

7 Radiocarbon Dating

7.1. Two samples of fine wood charcoal from the top 10mm of Sample 7 were submitted for AMS dating to Beta Analytic in Miami. The calibrated dates are calculated by OxCal v4.1 (Bronk Ramsey, 2009 and Talma and Vogel, 1993) using the IntCal13 atmospheric calibration curve with Atmospheric data from Reimer *et al*. (2013) and are quoted at the overall range at 95.4% probability. The calibrated date ranges cited are quoted in the form recommended by Mook (1986), with the end points rounded outward to 10 years for errors greater than 25 years. The results are presented in Appendix 1.

7.2. The dated samples were identified prior to submission by staff from University of Wales, Trinity Saint David, Lampeter.

Beta-506613

Context: 7, old ground surface below hillfort bank

Material: fine wood charcoal (species not identifiable)

Radiocarbon age: 4020±30 BP

Calibrated date (95% probability): 2620–2470 cal. BC

Beta-507391

Context: 7, old ground surface below hillfort bank

Material: fine wood charcoal (species not identifiable)

Radiocarbon age: 2970±30 BP

Calibrated date (95.4% probability): 1290–1050 cal. BC

8 Outreach

8.1. The project provided an opportunity for CPAT staff not otherwise engaged in the fieldwork, together with local volunteers and students from Saxion University of Applied Sciences in the Netherlands, under the guidance of their lecturer Mark Spanjer, to be involved in the excavation of an iconic hillfort within the border region of Wales.

8.2. The outreach programme also included on-site Open Days and involved members of staff in regular discussions with members of the public walking the Offa's Dyke National Trail, which passes through the hillfort.

8.3. As a consequence of the limited parking at and near Beacon Ring, the decision was made to dissuade members of the public from driving to site while welcoming those arriving on foot. For the Open Days on 26 and 27 August, anyone wishing to visit was asked come via the provided minibus from Welshpool. Unfortunately the first open day was hampered by torrential rain, but the second day was much more successful. Publicity for the excavation and events included the use of the CPAT website, together with regular updates through social media.

Fig. 18: Students from the Saxion University of Applied Sciences working in Trench 3 while a staff member explains the aims and results of the work to walkers on the Offa's Dyke National Trail. CPAT 4588-0103

Fig. 19: Some of the excavation team, captured during the rampart excavations. CPAT 4588-0018

8.4. Owing to the nature of the fieldwork, volunteer numbers were restricted and drawn from the Friends of CPAT network together with students under the guidance of Mark Spanjer, an associate of CPAT. The excavations involved five members of CPAT staff, seven volunteers and four students/staff from Saxion University of Applied Sciences in the Netherlands. The excavation provided an ideal opportunity for all to understand and get involved with work designed to investigate the origins and construction of this iconic hillfort in the Welsh border region. Particular efforts were made to explain the reasoning behind the different approaches that were adopted and feedback from the participants suggests this was valuable adjunct to the fieldwork skills.

9 Conclusions

9.1. The main product of the work in 2018 was the excavation of a section through the rampart on the east side of the hillfort and this was successful in revealing an old ground surface which had been sealed beneath the bank at the time the hillfort was constructed. The bank material comprised an upper layer with a significant shale content, likely to have originated from the deeper, rock-cut, parts of the ditch and a lower clay-dominated layer which came from the initial ditch excavation and included material from the old ground surface and its associated soils. A deliberate berm appeared to have been created between the bank and ditch, potentially as an aid in the construction of the bank, but there was no conclusive evidence of the rampart reconstruction which had been suspected from the auger sampling results. The auger sampling was proved correct in relation to the shallowness of the ditch deposits, supporting the suggestion that the ditch had probably been at least partly emptied of its fill after the original phase of construction and use.

9.2. The old ground surface was peaty in character and so samples were taken to provide material for dating and pollen analysis. While this theoretically provided an opportunity for dating the construction of the hillfort, the radiocarbon dates from the two samples that were tested provided widely differing dates of 2617-2471 Cal BC and 1281-1058 Cal BC. It was therefore clear that the fine wood charcoal that was used for dating was mixed and could not be relied upon to provide a secure date for the construction of the hillfort.

9.3. Two pollen samples at different depths within the peaty ground surface layer were assessed and suggested that prior to the construction of the hillfort wet, alder-dominated, woodland and hazel-rich scrub or woodland edge vegetation were present. Open, grassy areas were seen to be locally important, and while human disturbance was implied in both samples, there was some probable variance in the degree and type of activity being identified. Specifically, cultivation was potentially more important in the upper (later) sample, with increased markers for pastoralism identified in the lower sample.

9.4. Various phases of erosion subsequent to the construction of the rampart were identified on both the inner and outer faces of the bank and within the ditch. One of these had covered the berm already mentioned, while on the inner side of the bank a sequence of three erosion events had been responsible for smoothing its profile before silting had taken place owing to the ponding of water behind the bank.

9.5. At the south-west entrance, the excavations were relatively unsuccessful in finding evidence that might be related to an entrance structure. The only possible post-hole was a shallow pit beneath the township boundary bank which bisects the hillfort. This pit seemed more likely to relate to the layout of the boundary, which may have been in place at least as early as the 11th century, rather than identifying a gate or entrance structure for the hillfort. Geophysical survey had recorded a series of anomalies in this area, though the one tested by excavation could not be identified and so was perhaps of natural origin. Traces of a trackway used by narrow carts were identified and this is a feature known to have been in use in early 20th century.

9.6. None of the three excavations carried out in the interior of the hillfort were successful in finding any related features, and all that was revealed was the shallow ditch defining the township boundary that bisects the hillfort. It was, however, clear that the layers above the natural subsoil in the interior had seen much disturbance from the actions of tree roots, mostly in relation to the earlier plantation. The subsoil itself was not penetrated by tree roots.

9.7. The additional survey carried out in 2018 has completed the survey of the accessible areas of the hillfort, in so much as that is currently possible while it is occupied by a forestry plantation. This could be added to in the future if opportunities arise.

9.8. The question of whether there was once a counterscarp bank is perhaps still open, as there is a seeming discrepancy in size at this point in the circuit between the bank, at approximately 8.50m wide and 2.00m wide, and the ditch, at 13.00m wide and 1.60m deep. This can be explained, however, by comparing the more rounded and steep-sided profile of the bank with the shallower and flatter ditch profile (Fig. 10) and by allowing for the fact that erosion appears to have lowered the bank from its original height of around 2.50m. It now seems less likely that a counterscarp bank was present.

10 Acknowledgements

10.1. The writer would like to thank C Matthews of Archaeological Survey West for his work on the topographic survey and geophysics and Dr R Bale and staff from University of Wales, Trinity Saint David, Lampeter for processing the soil samples. Also W Davies and F Grant of Cadw for their support during the project.

10.2. Thanks are also due to the following colleagues and volunteers for their assistance with the excavations: N Bayliss, P Belford, J Britnell, A Davies, G Duckers, M Fokkema, I Harvey, N Jones, M Lloyd, W Logan, J Rowe, P Rycroft, M Spanjer, F Teunissen van Manen, H van der Werf and R White. Visitors to the site included G Guilbert and A Wigley who provided helpful points of discussion. Also A Pughe for his help with the reconsolidation of the rampart section.

11 Sources

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Talma, A. S., and Vogel, J. C., 1993. A simplified approach to calibrating C14 dates, *Radiocarbon*, 35 (2), 317-322.

Documentary

1844 Tithe Apportionment for the townships of Trelystan, Rhos Goch and Leighton in the parish of Worthen, the County of Montgomery

Cartographic

1816 Ordnance Surveyors drawing No 199

1847 Tithe Map of the townships of Trelystan, Rhos Goch and Leighton in the parish of Worthen, the County of Montgomery

1883 Ordnance Survey 1:2500 first edition map, Montgomeryshire 24.09

1902 Ordnance Survey 1:2500 second edition map, Montgomeryshire 24.09

Websites

https://opendomesday.org

12 Archive deposition Statement

12.1. The project archive has been prepared according to the CPAT Archive Policy and in line with the CIfA *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives guidance* (2014). The digital archive only will be deposited with the Historic Environment Record, Clwyd-Powys Archaeological Trust and the paper/drawn/digital archive with the National Monuments Record (RCAHMW). No artefacts were retained.

Archive summary

CPAT Event PRN: 140277

138 digital photographs, Film 4588

Excavation

18 Context record forms (Trench 1)

5 Trench recording forms (Trenches 2-6)

Drawings register

Finds (samples) register

Photographic register

1 A1 site drawing – Trench 1 section

4 A4 site drawings

Survey:

2200_brexc18.dxf, brexc18-1.dxf, brexc18-2.dxf

Adobe Illustrator files:

2200_beacon_ring_2018_excavation

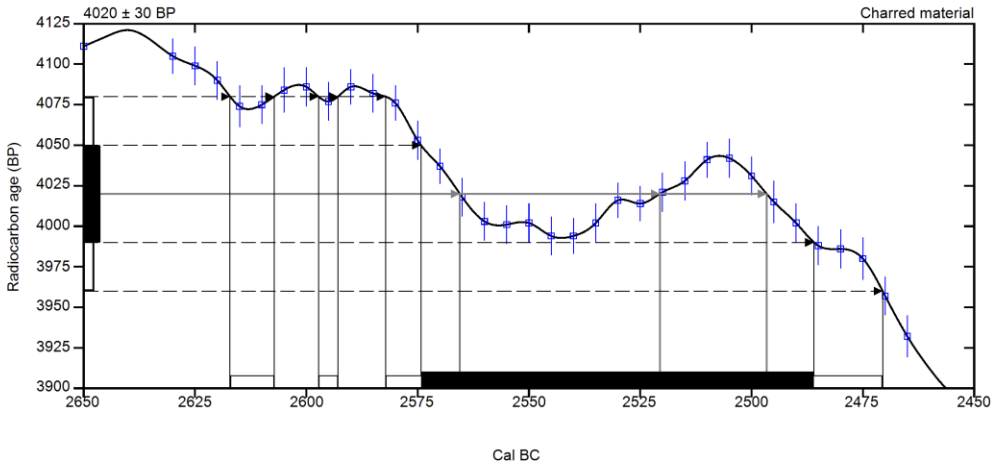
2200_rampart_section

Appendix 1: Radiocarbon dating results at Beacon Ring

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -25.41 o/oo : lab. mult = 1)

Laboratory number	**Beta-506613 : BEACON RING WOOD CHARCOAL SAMPLE 7 0-1CM**
Conventional radiocarbon age	**4020 ± 30 BP**
Calibrated Result (95% Probability)	**Cal BC 2617 to 2607 (Cal BP 4567 to 4557)** **Cal BC 2597 to 2593 (Cal BP 4547 to 4543)** **Cal BC 2582 to 2471 (Cal BP 4532 to 4421)**
Intercept of radiocarbon age with calibration curve	Cal BC 2566 (Cal BP 4516) Cal BC 2521 (Cal BP 4471) Cal BC 2497 (Cal BP 4447)
Calibrated Result (68% Probability)	Cal BC 2574 to 2486 (Cal BP 4524 to 4436)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

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Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(highest probability ranges: INTCAL13)

(Variables: d13C = -25.2 o/oo)

Laboratory number **Beta-507391**

Conventional radiocarbon age **2970 ± 30 BP**

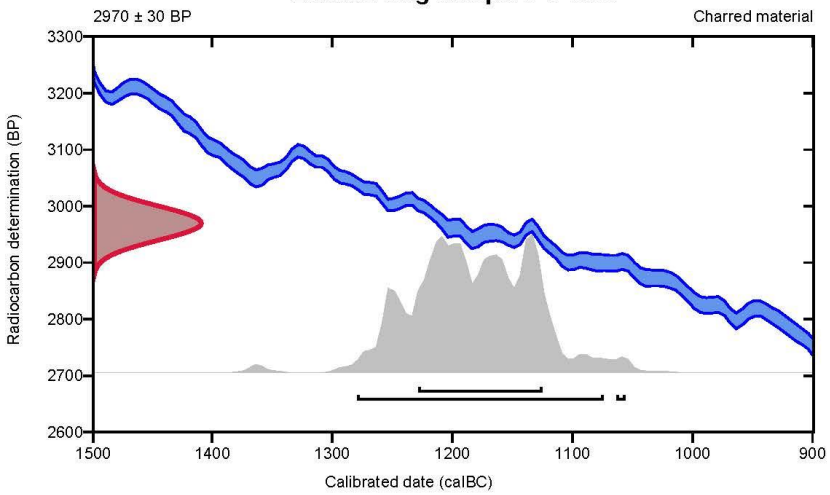
95.4% probability

(94.8%)	1281 - 1076 cal BC	(3230 - 3025 cal BP)
(0.6%)	1065 - 1058 cal BC	(3014 - 3007 cal BP)

68.2% probability

(68.2%)	1230 - 1127 cal BC	(3179 - 3076 cal BP)

Beacon ring sample 7 0-1cm



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

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Appendix 2: List of Samples from Trench 1

No	Context	Details	Status/Location
1	9	1 tub - turf fragment in lower bank deposit	At CPAT
2	9	1 tub - turf fragment in lower bank deposit	At CPAT
3	9	1 tub - turf fragment in lower bank deposit	At CPAT
4	7,9,15,16	1 sample tin – includes old ground surface	At Lampeter
5	7,9,15,16	1 sample tin – includes old ground surface	At Lampeter
6	7,9,15,16	1 sample tin – includes old ground surface	At CPAT, small portion sent to Oxford lab with sample No 10
7	7,9,15,16	1 sample tin – includes old ground surface	At Lampeter (processed and dated)
8	7,9,15,16	1 sample tin – includes old ground surface	At Lampeter
9	7,9,15,16	1 sample tin – includes old ground surface	At CPAT
10	9	1 plastic tube – OSL sample	Sent to Oxford lab

Appendix 3: Public Participation

The following table provides a summary of public participation and outreach during the 2018 fieldwork season at Beacon Ring.

Event	Date	Numbers	Notes
Casual visitors	01.08.18 to 31.08.18	53	- Visitors walking part or all of the Offa's Dyke path - Nationalities included French, German, Spanish, Italian, Israeli, Swedish and Bulgarian - All had some interaction with staff and interpretation at Trenches 2 and 3, some walked around the monument to visit other trenches too.
Casual visitors	01.08.18 to 31.08.18	12	- Locals living on or near the Long Mountain who made repeat visits to the site during the excavations - All of them interacted with staff and viewed all the trenches that were open at the time of their visit.
Volunteers	01.08.18 to 31.08.18	11	Volunteers ranged in age from 16 to 70+ and included a wide range of individuals. A group of students from the Netherlands were joined by their lecturer. Volunteers engaged in all aspects of fieldwork.
Open Days	26.08.18 and 27.08.18	73	Two Open Days were planned and advertised with minibus transport leaving Welshpool station car park three times per day. Unfortunately on the first day there was torrential rain and only three visitors came for the first run; the remaining runs were cancelled. The second day was much better, with a full minibus each time. The final tour in fact attracted over 30 people with two large family groups of walkers arriving during the course of the tour. Each tour was led by the CPAT Director and featured - Introductory talk and leaflet - Explanation of the project and funding - Walk around the site trench-by-trench discussing the findings and landscape context - Interaction with other staff who were present Each tour lasted about 90 minutes.
Public lecture	11.01.19	68	A public talk by the CPAT Director about the project attracted a very good attendance at Welshpool Town Hall.