

**Garn Goch Chambered Tomb
(SMBr28), Llangattock, Powys**

**3D Photogrammetric Survey and
Archaeological Watching Brief**

Prepared for
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Crynodeb/Summary

Comisiynwyd Archaeoleg Mynydd Du Cyf gan Gyngor Cymuned Llangatwg i gynnal arolwg ffotogrammetrig 3D o Feddrod Siambr Garn Goch (SMBR028) a briff gwyllo archeolegol yn ystod y gwaith cloddio ar gyfer llwybr mynediad newydd ym Maes Hamdden Llangatwg. Darparodd Cadw Ganiatâd Heneb Gofrestredig (SMC) i Gyngor Cymuned Llangatwg er mwyn caniatáu i'r llwybr gael ei gloddio drwy gyrion allanol (gogleddol) ardal gofrestrdedig Beddrod Siambr Garn Goch (SMBR028). Un o'r amodau oedd ynghlwm wrth y caniatâd SMC oedd gofyniad am friff gwyllo archeolegol yn ystod y gwaith cloddio ar gyfer y llwybr newydd.

Cynhaliwyd digwyddiad allgymorth cymunedol i holl fyfyrwyr CA2 Ysgol Gynradd yr Eglwys yng Nghymru Llangatwg i weld yr ymchwiliadau ym Mharc Llangatwg, ac i ddysgu am Feddrod Siambr Garn Goch (SMBR028) a chynhanes yr ardal. Darparwyd detholiad o gerrig cynhanesyddol dilys ac atgynhyrchedig ac offer eraill yn dyddio'n ôl hanner milenia i'r plant eu trin a dysgu trwy ddysgu cinesthetig.

Ni nododd y briff gwyllo archeolegol unrhyw nodweddion na dyddodion yn yr ardaloedd a gloddiwyd ar gyfer y llwybr newydd. Ni nodwyd unrhyw isbridd na phridd aradr sy'n awgrymu tirlunio yn y gorffennol o bosibl. Daethpwyd o hyd i nifer o ddarganfyddiadau aml-gyfnod o'r uwchbridd gan gynnwys ysbarduno a bwcl â phlatiau arian o'r 18fed/19eg ganrif, pêl fwsged pistol a botwm arian neu biwter.

Cynhyrchwyd 'gefell ddigidol' 3D manwl ar gyfer Beddrod Siambr Garn Goch (SMBR028), gan ddarparu ar gyfer y data uchder 3D cywir am y tro cyntaf ar faint y gwrthglawdd a'i ffurf. At hynny, bydd yr 'efell ddigidol' yn feincnod y gellir cynnal arolygon yn y dyfodol iddo i fonitro erydiad, difrod neu dyfiant llystyfiant pellach ar yr heneb gwrthglawdd. Roedd y dadansoddiad aml-sbectrol yn broses ddiddorol i'w chynnal ond ni nododd unrhyw nodweddion yn y maes hamdden ac eithrio nodwedd ffos fawr 60m o hyd o darddiad daearegol sy'n rhedeg i'r gogledd orllewin/de-ddwyrain ar draws y parc i'r heneb.

Mae'r adroddiad presennol yn nodi canlyniadau'r briff gwyllo archeolegol a'r arolwg ffotogrammetrig 3D yn unol â safonau proffesiynol Safon Sefydliad Siartredig yr Archeolegwyr a chanllawiau ar gyfer briff gwyllo archeolegol (cyhoeddwyd 2014, adolygwyd 2020) a Lloegr Hanesyddol Chanllawiau Arfer Da ar gyfer Ceisiadau Ffotogrammetreg ar gyfer Treftadaeth Ddiwylliannol (cyhoeddwyd 2017).

Black Mountains Archaeology Ltd were commissioned by Llangattock Community Council to undertake a 3D photogrammetric survey of Garn Goch Chambered Tomb (SMBR028) and an archaeological watching brief during the excavation for a new access path in Llangattock Recreation Ground. Cadw provided Scheduled Monument Consent (SMC) to Llangattock Community Council to allow the path to be excavated through the outer (northern) periphery of the scheduled area of Garn Goch Chambered Tomb (SMBR028). One of the conditions attached to the SMC consent was a requirement for an archaeological watching brief during excavation for the new path.

A community outreach event was provided for all of the KS2 students at Llangattock Church in Wales Primary School to view the investigations in Llangattock Park, and to learn about Garn Goch Chambered Tomb (SMBR028) and the prehistory of the area. A selection of genuine and replica prehistoric stone and other tools dating back half a millennia was provided for the children to handle and learn through kinaesthetic learning.

The archaeological watching brief did not identify any features or deposits in the excavated areas for the new path. No subsoils or plough soil was noted possibly suggesting landscaping in the past. A number of multi-period finds were recovered from the topsoil including a 18th/19th century silver-plated spur and buckle, a pistol musket ball and a silver or pewter button.

A detailed 3D 'digital twin' was produced for the Garn Goch Chambered Tomb (SMBR028), providing for the first-time accurate 3D height data on the extent of the earthwork and its form. Furthermore, the 'digital twin' will provide a benchmark to which future surveys can be undertaken to monitor erosion, damage or further vegetation growth on the earthwork monument. The multispectral analysis was an interesting process to undertake but did not identify any features in the recreation ground other than a large 60m long ditch feature of geological origin running NW/SE across the park to the monument.

The present report sets out the results of the archaeological watching brief and 3D photogrammetric survey in accordance with the professional standards of the Chartered Institute for Archaeologists Standard and guidance for an archaeological watching brief (published 2014, revised 2020) and Historic England's Photogrammetric Applications for Cultural Heritage Guidance for Good Practice (published 2017).

Acknowledgements and Copyright

The project was managed by Richard Lewis BA MCIfA. The aerial UAV (drone) survey was undertaken by Richard Lewis and Dr Rhys Morgan PhD. The archaeological watching brief was conducted by Richard Lewis, Dr Rhys Morgan and Dr Graham Eyre-Morgan PhD. The community outreach event with Llangattock Church in Wales Primary School was prepared and hosted by Richard Lewis, Dr Rhys Morgan and Dr Graham Eyre-Morgan. All 3D photogrammetric modelling was prepared by Richard Lewis. The report was prepared by Richard Lewis and Dr Rhys Morgan, who also kindly provided the Welsh translations. The author is grateful to Llangattock Community Councillors Tim Jones, Gail Jones and Kay Bailey for their support during this project. We are also grateful to Craig Thomas of Land and Stone for carrying out the excavation for the new pathway. We also extend our thanks to Kathryn Marshall, Headteacher at Llangattock Church in Wales Primary School, for arranging to bring down all of the KS2 students. Finally, thanks to Will Davies (Cadw) for help and support throughout the project.

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Archaeological Watching Brief and 3D Photogrammetric Survey Report

1 Introduction

- 1.1.1 Black Mountains Archaeology Ltd/*Archaeoleg Mynydd Du Cyf* were commissioned by Llangattock Community Council to undertake a 3D photogrammetric survey of Garn Goch Chambered Tomb (SMBR028) and an archaeological watching brief during the excavation for a new access path in Llangattock Recreation Ground (Figures 1 and 2). Cadw provided Scheduled Monument Consent (SMC) to Llangattock Community Council to allow the path to be excavated through the outer (northern) periphery of the scheduled area of Garn Goch Chambered Tomb (SMBR028). One of the conditions attached to the SMC consent was a requirement for an archaeological watching brief during excavation for the new path.
- 1.1.2 A community outreach event was provided for all of the KS2 students at Llangattock Church in Wales Primary School to view the investigations in Llangattock Park, and to learn about Garn Goch Chambered Tomb (SMBR028) and the prehistory of the area. A selection of genuine and replica prehistoric stone and other tools dating back half a millennia was provided for the children to handle and learn through kinaesthetic learning.
- 1.1.3 The present report sets out the results for the archaeological watching brief in accordance with *Chartered Institute for Archaeologists Standard and guidance for an archaeological watching brief* (published 2014, revised 2020); and *Historic England's and Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (published 2017).
- 1.1.4 The archaeological watching brief, 3D photogrammetric survey and community event was undertaken on the 12th to 15th September 2022.

2 Background

- 2.1.1 Llangattock Park (PGW(Po)2) is located to the east of the historic core of Llangattock (Llangatwg), a small village in the former county of Breconshire, now in Powys and within the Brecon Beacons National Park (Authority). The village is located on the south side of the River Usk opposite the historic settlement of Crickhowell (Figures 1 and 2).
- 2.1.2 Prehistoric activity within the village is represented by Garn Coch Chambered Tomb (SAMBR028), now within the recreation park but formerly part of Cillelan Park, a summer residence for the Duke of Beaufort. The chambered tomb may well be a Bronze Age burial mound as there seems to be some confusion over its exact date and form (Jones 2012). Cadw describe the monument as... "*the denuded remains of Garn Coch comprise a roughly circular mound measuring 17m in diameter and 1.7m high at the centre. A horizontal slab is located on the eastern side of the monument which is the possible capstone of a central chamber. Two further stones protrude from the grass on the western side. The monument was investigated in 1874 and found to contain an adult male inhumation and traces of charcoal*" (Cadw Scheduled Monument Report). Theophilus Jones (1809, 487) mentions two cairns on Mynydd Carno as marking a great battle (NPRN545005) in AD728 between the Saxon and British forces on Mynydd Pen-cryn. However, the reference Jones refers to in Brut Y

Tywysogyon (Jones 1952, 2) may be confused with a site in Scotland recorded in the Annals of Ulster (RCAHMW Battle Inventory).

- 2.1.3 The church (LB6675) is dedicated to St Catwg a rather famous 6th Century Christian abbot who was also the grandson of Brychan, the King of Brycheiniog, to whom the county owes its name. He is said to have died in his church at Llangattock by the hand of a Saxon invader whilst at Mass (Muir *et al* 2014). The curvilinear graveyard at St Catwg's Church may well indicate the presence of Early-medieval ecclesiastical activity. The present church is of 14th century date with a tower added or rebuilt by the 16th century. Extensive repairs took place in 1719 and 1785 for roof repairs with further Victorian remodelling taking place in 1843 by the celebrated local builder Benjamin James. Later repairs were carried out in 1868 and restoration in 1886 (Scourfield & Haslam 2013, 523-8).
- 2.1.4 Benjamin James was also responsible for the extensive Neo-Tudor remodelling and rebuilding of the reputedly 16th century Rectory (Hotel) in 1852. The Rectory (Hotel) was known to have been in the possession of Matthew Herbert who was the Rector from 1621 to 1646 and famously was the schoolmaster of the 17th century poet Henry Vaughan, who is reputed to have lived at the Rectory at this time. The Rectory is built some 200m west from the church so it is not improbable to assume that a greenfield site was chosen in the 16th century for its construction away from the already congested historic settlement core that presumably grew out from the church along the road over the Nant Onneu. The houses here largely 18th and 19th century in date. The Llangattock Parish Tithing Map (1847) shows the historic core much as it probably was after the Industrial expansion of the village following the construction of the Monmouthshire and Brecon Canal (1797-9). The land around the Rectory is recorded as Glebe with the exception of Llangattock Court (LB6676) on its eastern boundary, a fine William and Mary house constructed c1695-1700.
- 2.1.5 The earliest map, the 1587 Badminton Manorial plan of Killelan (Cillelan) Park (Llangattock Park), doesn't show either St Catwg's Church or the Rectory but does record five houses on the eastern (park) side of the road through the village (Plate 1). Llangattock Park (Cillelan Park) belonged to the Dukes of Beaufort. The present house was built by architect T.H. Wyatt in 1838. In 1906 the house was extended and modernised and afterwards used as a summer residence by the Dukes of Beaufort. To the north of the park and east of the church is Plas Llangattock, an 18th century gentry house and park & garden (LB6677; PGW(Po)45), which is reputedly built on the site of an earlier Tudor house. The house and gardens are a remarkable survival of a 17th century gentry house complete with stables, barns, three pigsties, and peach and boiler houses, and 19th century curving glass house. The gardens were set out in 1937 (Cadw and ICOMOS 1999, 206-209)
- 2.1.6 The village expanded from its historic core in the 19th century largely due to the influence of the Brecknock and Abergavenny Canal. The Llangattock section was cut between 1797 and 1799 and from 1815 limestone was brought down by tramroad and inclines from the Llangattock quarries by the Brecknock Boat Company. The company

built a set of large kilns (LB20706) at the same time in order to produce lime for the export market. By the 1870s the kilns had gone out of use.

3 Registered Landscapes, Parks and Gardens

- 3.1.1 Llangattock Recreation Ground (Figure 1) is located within the Grade II Listed Registered Park and Garden of Llangattock Park (PGW(Po)2). Cadw note...*“Llangattock Park and House (LB20727), built in 1838, lies above the village of Llangattock, facing north-east on the southern edge of a small park. Its parkland and grounds are registered as the remains of a small nineteenth-century park and garden associated with the house by eminent architect T.H.Wyatt, built for the Duke of Beaufort as a summer and hunting residence. The park lies to the north and the east of the house (LB:20727). It once covered an area of about 382 acres (154.7ha) but due to the residential expansion of Llangattock village, and other encroachments, much of the west side of the park has been re-developed. Its early history is unclear but it may have had origins as a medieval deer park. A park of some kind had been created by 1538 when the area comprised part of the older Park of Cillellan. Historically the park was surrounded by a stone wall which partly survives. To the north and east the park is bounded by farmland, on the west by housing developments and a recreation ground, and on the south it is now bounded by the Brecon and Abergavenny canal (nprn 85124) the construction of which in the late eighteenth century bisected the southern section of the park. Within the park there were two large areas of plantation, well established by the 1840s”* (Cadw and ICOMOS 1999, 147-150).
- 3.1.2 On the western boundary of the recreation ground is Plas Llangattock (Figure 1), an 18th century gentry house and park & garden (LB6677; PGW(Po)45), which is reputedly built on the site of an earlier Tudor house. The house and gardens are a remarkable survival of a 17th century gentry house complete with stables, barns, three pigsties, and peach and boiler houses, and 19th century curving glass house. The gardens were set out in 1937 (Cadw and ICOMOS 1999, 206-209).

4 Location, Topography and Geology

- 4.1.1 Llangattock Recreation Ground is located to the east of the historic core of Llangattock (Llangatwg), a small village in the former county of Breconshire, now in Powys and within the Brecon Beacons National Park (Authority). The village is located on the south side of the River Usk opposite the historic settlement of Crickhowell and north of the Monmouthshire and Brecon Canal (Figures 1 and 2).
- 4.1.2 The general geology is superficial till deposits of Devensian sands and gravels from seasonal and post glacial meltwater outwash overlying interbedded sandstone bedrock (Senni Formation) of sedimentary bedrock formed approximately 411 million years ago in the Devonian period (British Geological Survey).

5 Objectives

- 5.1.1 The *definition* of an archaeological Watching Brief as set out by the *Chartered Institute for Archaeologists* (CIfA) is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there

is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

5.1.2 The *purpose* of an archaeological watching brief (as defined ClfA 2014) is:

- to allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works.
- to provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

5.1.3 A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

5.1.4 The objective of a watching brief is to establish and make available information about the archaeological resource existing on a site.

5.1.5 (Chartered Institute for Archaeologists Standard and guidance for an archaeological watching brief (published 2014, revised 2020)

5.1.6 The principal method of survey utilised *measured 3D photogrammetric techniques* implemented in accordance with the standards set out in Historic England's *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (Published 2017).

5.1.7 The main objectives of the photogrammetric survey is to produce metrically accurate rendered photorealistic 3D modelling of the survey area, buildings and general scenes georeferenced with high accuracy. Modelling utilised Structure from Motion (SfM) photogrammetric techniques obtained through camera capable SUA (drone) to produce measurable 3D models of the photographed scene. The term photogrammetry was first coined by a Prussian architect Albrecht Meydenbauer in an 1867 article called 'Die Photometrographie' and Dominique Arago, a French surveyor, was using photographs to create topographic maps as early as 1840. Modern photogrammetric methods used flat lensed cameras to create photogrammetric montages of buildings or other methods such as stereoscopy using multiple aerial images to create the illusion of depth (3D) from 2D images. Present day photogrammetry uses sophisticated algorithms and workflows to digitally stitch each pixel together to create real world measured 3D representations of the photographed scene with outputs including dense point clouds (LAS), triangular meshes (OBJ) and orthophotography (plans and elevations – rasterised JPEG and TIFF). The accuracy or more appropriately the margin of error is calculated using the ground sampling distance (GSD), which is the distance between two adjacent pixel centres normalised to real world dimensions. Centimetre accuracy of photogrammetric outputs is reached by using Real Time Kinematic (RTK) GPS (satellite navigation systems) survey methods of control points within the surveyed area.

5.1.8 A Research Framework for the Archaeology of Wales (<http://www.archaeoleg.org.uk>) was devised in 2003 after extensive consultation and assessment of current

knowledge by leading academics and professionals with a view to providing focus and direction for all studies of the historic environment in Wales both in the academic and professional arenas. In 2009 the research framework underwent a reappraisal to reflect advances in archaeological knowledge and practice. While many themes have undergone further consultation, assessment and revision, it was considered that Neolithic and Earlier Bronze Age Wales 4000 BC to 1500 BC was still 'fit for purpose' as current knowledge has not advanced significantly despite some new work in this area during the intervening years (regional landscape and monument studies and academic and developer led excavations on sites and monument groups).

- 5.1.9 The research foci within this theme are broadly 'transitions, agriculture, settlement, landscape, monuments, and industry'. The framework has identified a dearth of evidence and therefore knowledge relating to the nature of the Neolithic and Bronze Age landscape; significant emphasis is placed on the need for more investigation of funerary, ritual and other monuments and the need to revisit those sites and archives that have been investigated in the past. Some recent studies of monument groups such as the chambered tomb and the ubiquitous round barrow (cairn) have been undertaken (Pan-Wales Prehistoric Funerary and Ritual Project) but physical investigation (geophysics, evaluation, excavation) has been limited, and certainly since 2003, restricted to a small number of academic and developer led (commercial) investigations (around 20 or so sites investigated in 20yrs).
- 5.1.10 The framework has identified the need for more detailed investigation (excavation, survey) to provide a better chronological understanding of monument types and their broader social and topographical context. Particular attention needs to be paid to buried soils and paleoenvironmental evidence. Consideration should be given to identifying disparate landscapes uses; for example, where are the settlements in relation to funerary and ritual monuments, how dense is the population, how did prehistoric populations use the landscape of Wales and what were their concepts/understandings of the landscape, and finally what do our artefact and monument types tell us about Wales's place in the world during the Neolithic and Bronze Age? At a local level this could include an examination of the sacred and economic landscapes in the immediate vicinity of monuments and settlements and could include the identification and examination of field systems. Natural resources such as palaeochannels and peat bogs should not be forgotten as potential sources of important landscape information. At a wider level this could include an examination of the nature of early trade perhaps employing new approaches to how raw materials may have been collected and used.
- 5.1.11 The emphasis then on the Neolithic and Bronze Age themes within the Research Framework for the Archaeology of Wales has been placed on the need for further investigation of archaeological sites and monuments; indeed the supplementary paper for the recent reappraisal of the framework certainly supports this view: *"From the analysis of the issues it emerged that the understanding of Wales as elsewhere in Britain during its earliest periods, from the Palaeolithic to the Early Bronze Age, is inhibited by the lack of both site and climatic evidence for the nature of colonisation, recolonisation and settlement. Put simply, more needs to be known about the extent of the settled landscape and the continuity of the settlement. Indeed, the lack of knowledge is so deep that it prevents the adequate interpretation and understanding*

of the monuments which do survive. The consensus which emerged from discussion is that a key to solving this problem lies in developing more research in both environmental and maritime sectors, while remote survey will undoubtedly continue to discover sites with potential for investigation. Detailed site investigation must be regarded as integral and, as part of this work, carefully targeted excavation is inescapable."

- 5.1.12 The presumption within current planning legislation for sites and monuments to be preserved *in-situ* means that any recommended mitigation for sites of archaeological value will always be assessed accordingly. However, where there is a clear research aim and benefit through the advancement of knowledge, as is indicated in the above framework theme, then the investigation (excavation/survey) of certain sites of archaeological value may prove to have a wider public benefit than simply preserving the site *in-situ*.

6 Legislative Framework

- 6.1.1 Any works affecting an ancient monument and its setting are protected through implementation of the *Ancient Monument and Archaeological Areas Act 1979*. In Wales the 1979 Act has been strengthened by *The Historic Environment (Wales) Act 2016*. The 2016 Act makes important improvements for the protection and management of the Welsh historic environment. It also stands at the centre of an integrated package of secondary legislation (Annexes 1-6), new and updated planning policy and advice, and best-practice guidance on a wide range of topics (*TAN 24 Historic Environment*). Taken together, these support and promote the careful management of change in the historic environment in accordance with current conservation philosophy and practice. The *Ancient Monument and Archaeological Areas Act 1979* and *The Historic Environment (Wales) Act 2016* sets out a presumption in favour of preservation *in-situ* concerning sites and monuments of national importance (scheduled/listed), and there exists in the current *Planning Policy Wales (Chapter 6)* a presumption in favour of preservation *in-situ* of all types of heritage assets.
- 6.1.2 The *Civil Aviation Authority (CAA)* is the airspace controlling body for the United Kingdom (UK). The rules and regulations for the use of SUAs (drones) in UK airspace is set out in the *Air Navigation Order 2016* and its *2018* and *2019* amendments. The CAA publishes the ANO within CAP393 (Civil Aviation Publication). CAP382 details the safety occurrence reporting scheme for aircraft. CAP722 Unmanned Aircraft System Operations in UK Airspace – Guidance and Policy, is compiled by the Civil Aviation Authority's Unmanned Aircraft Systems Unit (UAS Unit). CAP722 is intended to assist those who are involved with the development, manufacture or operation of UAS to identify the route to follow in order that the appropriate operational authorisation(s) may be obtained and to ensure that the required standards and practices are met. Its content is primarily intended for non-recreational UAS operators and guides all commercial UAS activity, resulting in UAS pilots/operators needing to obtain an Operational Authorisation (OA), formerly the Permission for Commercial Operations (PFCO).
- 6.1.3 All UAS flights are operated within the limitations and conditions of the company Operational Authorisation (OA), Operations Manual and the applicable articles of the

ANO (Articles 94, 94A, 94B, 95, 239, 240 and 241). In addition, from November 2019 AN(A)O 2018 Article 7 introduces new articles 94 C-F into ANO 2016 to ensure the correct certificates are held for both the company (The SUA Operator) and each individual remote pilot

- 6.1.4 The European UAS Regulatory Package was implemented on the 31st December 2020. *Air Navigation (Amendment) Order 2020* introduces some changes, with guidance provided in CAP2013. Full details of the UAS Regulatory Package and its implementation are published in CAP722 Edition 8. Three new operational categories have been introduced: Open (geared to hobbyists/some commercial users), Specific (mainly enterprise drone pilots), Certified (very high-risk operations).

7 Methodology

- 7.1.1 The investigations consisted of the recording of excavations for a new access path through the scheduled area of Garn Goch Chambered Tomb (SmBr028) and Llangattock Park. A 3D photogrammetric, contour and multispectral survey was undertaken of Garn Goch Chambered Tomb (SmBr028) and the wider Llangattock Park area.
- 7.1.2 The archaeological recording techniques conformed to the best industry standard. All deposits were recorded using a single continuous context numbering system pro forma (summarised in Appendix III). All contexts were recorded in section and plan at scale. All contexts were photographed in digital using a Canon EOS 2000D DSLR camera with a 24.7mp, 22.3mm x 14.9mm CMOS sensor. The ground investigations were tied into the Ordnance Survey National Grid and Datum using an GNSS/Glonass (GPS) Receiver and data logger with a <20mm tolerance. All trenched areas, spoil tips and areas of archaeological potential were surveyed with a Garrett Ace 400i metal detector with a 28cm x 22cm DD PROformance search coil and Garrett Ace 200i metal detector with a 16.5 x 23cm PROformance search coil. A quantity of metallic items were recovered from the topsoil (001), see Section 8 below.
- 7.1.3 All classes of finds were retained (cleaned and catalogued) and arrangements for final deposition agreed as set out in the requirements of the Chartered Institute for Archaeologists' *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials* (2011) and the Museums and Galleries Commission' *Standards in the Museum Care of Archaeological Collections* (1994). The archive of archaeological records and artefacts has been prepared to the guidelines set out in Historic England's *Management of Archaeological Projects* (1991) Appendix 3. The final archive of records relating to the preparation of the report has been prepared to Historic England's guidelines set out in the *Management of Archaeological Projects* (1991), Appendix 6 and the *National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales 2017*.
- 7.1.4 When substantial quantities of undiagnostic, residual or modern material were recovered, an on-site recording and discard policy for these classes of find was employed. However, sufficient material was retained to understand the nature, date and function of the deposit from which it was recovered. Specialist artefact advice and analysis for finds assemblages was sought and the results by fabric type can be found

- in Section 8. No items were recovered that are subject to *The Treasure Act* 1996 (2003 as amended).
- 7.1.5 The capture, processing and output of 3D models conformed to professional industry standard and best practice guidelines as set out by Historic England's *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (Published 2017). The photogrammetric 3D models of Llangattock Park and Garn Goch Chambered Tomb (SMBR028) can be viewed here:
- 7.1.6 Llangattock Park and Garn Goch Chambered Tomb 3D Survey: <https://cloud.pix4d.com/dataset/1288255/map?shareToken=8971cacb-a8f5-4e3d-b395-8248e31bf267>
- 7.1.7 Garn Goch Chambered Tomb Detailed Survey: <https://cloud.pix4d.com/dataset/1288190/map?shareToken=840f09a7-cc36-4721-87b4-cd02ffdabd2f>
- 7.1.8 The survey was carried out by multiple UAVs (drones), equipped with a 35mm equivalent 20mp, 1" sensor fitted with a mechanical shutter and 4k UHD camera; a 35mm equivalent (24mm) camera with a 12mp 1/2.3" CMOS sensor and a terrestrial Canon EOS 2000D DSLR camera with a 24.7mp, 22.3mm x 14.9mm CMOS sensor. The ground investigations and aerial survey were tied into the Ordnance Survey National Grid and Datum using a GNSS/Glonass (GPS) Receiver and data logger with a <20mm tolerance. The 3D models were produced using proprietary photogrammetry software and aligned using known ground control points (GCPs). A total of 11,881 high resolution images were recovered and successfully calibrated into two 3D models. Dimensional control was then applied to each model and then reprocessed using the new parameters and optimised cameras to create dense point clouds of over 83 million points for the Llangattock Park 3D Survey and 18 million points for the Garn Goch Chambered Tomb Survey. High face count meshes were then created, with a mean RMS error of 9mm for Llangattock Park Survey and 1mm for the Garn Goch Chambered Tomb Survey. Models were then exported to OBJ format. Six GCPs were used with a sub-20mm error margin to OSGB36 (National Grid) and a high-resolution Ground Sampling Distance (GSD) of 1.1cm/pixel for Llangattock Park Survey and 0.46cm/pixel for the Garn Goch Chambered Tomb Survey was achieved. A multispectral vegetation index value (NDVI) on multispectral bands of light was produced in the form of an orthomosaic plan (Figure 7). The plan shows near infrared light, with chlorophyll (good sun reflectance of healthy grass/vegetation) shown in red. Using near infrared light bands, subtle changes in plant (grass) growth can be observed, which may be indicative of underlying (buried ditches etc) archaeological anomalies. All high-resolution orthographic renders (orthoplanes and orthomosaics) were exported and scaled in georeferenced raster (TIFF and JPEG) format (Figures 1-2, 6-9).
- 7.1.9 With the permission of the landowner, the site archive will be deposited with Powys Archives (Crickhowell or Llandrindod Wells) for permanent curation. An accession number will be generated on submission. The report and archive conform to the professional standards as set out in section 3.4 of the Chartered Institute for Archaeologists' *Standard and Guidance for an Archaeological watching Briefs* (published 2014, revised 2020). A copy of the report and digital archive will be supplied to the client and their agents, the regional HER (CPAT) and the Royal

Commission on the Ancient and Historical Monuments of Wales. Submission of photogrammetric images acquired by drone to the RCAHMW will follow *RCAHMW Unmanned Aerial Vehicle (UAV) Policy*. All data has been digitally stored in appropriate formats (SHP, DXF, TIFF, RAW, JPEG, PDF etc) with the archive destination in mind. All data will be submitted to the relevant archives in accordance with the RCAHMW's *Guidelines for Digital Archaeological Archives* (2015) and the regional HER's *Guidance for the Submission of Data to the Welsh Historic Environmental Records (HERs)* (published 2018).

8 Results

- 8.1.1 The investigations consisted of the recording of excavations for a new access path through the scheduled area of Garn Goch Chambered Tomb (SMBr028) and Llangattock Park. A 3D photogrammetric, contour and multispectral survey was undertaken of Garn Goch Chambered Tomb (SMBr028) and the wider Llangattock Park area (Figures 1 and 2).
- 8.1.2 *Watching Brief – Figures 1-5; Plates 1, 4-30*
- 8.1.3 The archaeological watching brief observed the machine excavation for a new path measuring 1.5m wide (average), and 344m long with a total area of 552m². The new path consisted of the removal of a light brown silt-loam topsoil layer measuring 0.05m to 0.2m in depth (001). No subsoils or plough soils were identified. Numerous multi-period finds were recovered from this deposit (see below). The basal deposit (002) encountered was a reddish-brown gritty silt with numerous cobbles (large and small). This deposit is the natural (reddish-brown) superficial till deposit of Devensian sands and gravels, which were derived from seasonal and post glacial meltwater outwash overlying interbedded sandstone bedrock (Senni Formation) of sedimentary bedrock.
- 8.1.4 *Community Outreach Event – Plates 6-8*
- 8.1.5 A community outreach event was provided for all of the KS2 students at Llangattock Church in Wales Primary School to view the investigations in Llangattock Park, and to learn about Garn Goch Chambered Tomb (SMBr028) and the prehistory of the area. A selection of genuine and replica prehistoric stone and other tools dating back half a millennia was provided for the children to handle and learn through kinaesthetic learning. Handouts, reconstruction and cutaway drawings were provided that enabled the children to visualise the chambered tomb how it may have perhaps once looked in the Neolithic.
- 8.1.6 *3D Photogrammetric Survey – Figures 1-2, 6-9; Plates 2-3*
- 8.1.7 The survey was carried out by multiple UAVs (drones) and terrestrial DSLR cameras over the full extent of the recreation ground and focusing in on the area of Garn Goch chambered tomb (SMBr028). A total of 11,881 high resolution images were recovered and successfully calibrated into two 3D models. This created a dense point cloud of over 83 million points for the Llangattock Park 3D Survey and 18 million points for the Garn Goch Chambered Tomb Survey, with a mean RMS error of 9mm for Llangattock Park Survey and 1mm for the Garn Goch Chambered Tomb Survey. Six GCPs were used with a sub-20mm error margin to OSGB36 (National Grid) and a high-resolution

Ground Sampling Distance (GSD) of 1.1cm/pixel for Llangattock Park Survey and 0.46cm/pixel for the Garn Goch Chambered Tomb Survey was achieved.

- 8.1.8 A multispectral vegetation index value (NDVI) on multispectral bands of light was produced in the form of an orthomosaic plan (Figure 7). The plan shows near infrared light, with chlorophyll (good sun reflectance of healthy grass/vegetation) shown in red (ignoring human-made surfaces). The multispectral analysis did not identify any features other than a large 60m long ditch feature running NW/SE across the park to the monument. This feature is almost certainly geological, a large palaeochannel perhaps left during the melting of the ice during the last glaciation episode, and not a cursus or other Neolithic monument leading to the chambered tomb.
- 8.1.9 A detailed 'digital twin' was produced for Garn Goch Chambered Tomb (SMBr028). The vegetation (large tree and shrubs) was removed in the point cloud to gain a clear view of the earthwork monument. The shadow of the huge oak tree remains and that is typical for this type of survey where the vegetation or other upstanding features obscure the 3D scene and is almost impossible to remove. Following the editing in the point cloud, a high resolution textured 'photo realistic' 3D mesh was produced so that the monument can be viewed and is visible and measurable from all directions. Finally, utilising the constrained (to OSGB36) and vegetation free point cloud, a Digital Surface Model (DSM) was produced to enable the generation of a topographic contour plan of the monument. This provides for the first-time accurate 3D height data on the extent of the earthwork and its form. Furthermore, the 'digital twin' provides a benchmark to which future surveys can be undertaken to monitor erosion, damage or further vegetation growth on the earthwork monument.

9 Small Finds

- 9.1.1 Artefactual evidence was identified from a single context (001) and consisted primarily of metallic finds and ceramics recovered during the course of the topsoil stripping for the new path. All trench areas and spoil tips were surveyed with a Garrett Ace 400i metal detector with a 28cm x 22cm DD PROformance search coil and a Garrett Ace 200i metal detector with a 16.5 x 23cm PROformance search coil. All small finds examined macroscopically under x30 magnification.
- 9.1.2 The only prehistoric find was that of a small flint chip and this shows very little if any evidence of working (Plate 9). A single brick/tile fragment (Plate 10) recovered may be Roman, possibly a small piece of tegula (roof tile). Medieval material is restricted to two small red earthen ware sherds with green glaze (Plate 11). Otherwise, the remaining finds were of a Post-medieval and Modern date and included 19th and 20th century ceramics, glass and metalwork. Four coins were recovered, a corroded cupro-nickel King George VI Sixpence, a King George V 1920 One Penny, a Queen Elizabeth II 1988 One Penny and a 2001 Ten Pence piece. A British Army flare cap (Plate 18) and two .303 blank rounds (Plate 22) were recovered, one live and one spent. These are likely related to the WWII use of Llangattock Park House and the former parkland by the army. Two copper alloy pin badges were found (Plate 21), one belonging to St Andrews Golf Course in Scotland. Two modern golf balls and a tee were also recovered (Plate 30). The assemblage wouldn't be complete without the recovery of two aluminium ring pulls from drinks cans and a Dupli-Color Inc, Cheshire, paint tube (Plate

17). Finally, a gold alloy chain was found consisting of a total of four long links held by three sets of three small links.

9.1.3 The most significant find was that of a very corroded silver-plated 18th to 19th century iron spur, with only the neck, heel and sides surviving (Plate 28). The rowel and terminals were missing. The neck has a suggestion of a rowel box, but this is very corroded so it is a little unclear. The missing rowel would have been a rotating wheel with points (spikes) attached to the boot spur and used to 'encourage' the horse forward. The silver-plated copper alloy buckle (Plate 20) may have come from horse tack due to its small size. Together with the lead pistol musket ball (Plate 16) and the fine silver or pewter button (Plate 19), these finds may hint at the use of the former parkland by the Duke of Beaufort, his retinue and staff.

Context	Type	Weight g	Description/Detail	Period	Plate No.
001	Flint	1	Small (13mm x 14.7mm x 2.5mm flint chip with post-deposition break revealing light grey interior and almost totally covered in cortex. The only prehistoric find recovered from the investigations.	Prehistoric	9
001	Ceramic	47	Handmade brick/tile. Two flat surfaces survive, one with a ridge. Infrequent large grog inclusions. Possibly Roman tegula fragment.	Roman	10
001	Ceramic	6	Two sherds of red earthenware, probably from the same vessel, a small bowl(?). Mottled green glaze on interior surface and frequent mica grog inclusions.	Medieval	11
001	Ceramic	103	Seven sherds of glazed red earthenware. One rim and six body sherds. All 19 th century.	Post-medieval	12
001	Ceramic	138	Two body sherds from two salt glaze vessels dating to late 19 th to early 20 th centuries.	Post-medieval/Modern	13
001	Ceramic	26	Eight white earthenware sherds, six blue transfer-printed with vegetive designs.	Post-medieval/Modern	14
001	Ceramic	2	Two small clay pipe stem fragments.	Post-medieval	15
001	Lead	25	Three lead items. A pistol 'musket' ball (diameter 10.6mm) showing hammer/cut marks for rounding. Lead smelting residue/droplet (19.3mm x 15.2mm x 8.1mm). Folded lead item (32.2mm x 20mm x 2.6mm) with holes for a wire(?), possibly electrical seal?	Post-medieval	16
001	Aluminium	3	Two ring pulls and a Dupli-Color Inc, Cheshire, paint tube.	Modern	17
001	Copper Alloy	161	British Army flare cap (50mm x 26mm) and curtain rail bracket.	Modern	18
001	Copper Alloy		A fine silver or Pewter button (diameter 27mm x 1.1mm). Button has an eroded clasp on reverse and scratches on face, probably post-deposition.	Post-medieval	19

Context	Type	Weight g	Description/Detail	Period	Plate No.
001	Copper Alloy	12	Copper alloy buckle (horse tack?) with silver plate/enamel and iron pin.	Post-medieval	20
001	Copper Alloy	10	Two copper alloy badges. One in the shape of a shield (28.2mm x 16.4mm x 3mm) with double plate for clasp, of which only two stumps remain. Second is a St Andrews golf pin badge with "Extracts St Andrews" written on face around a logo showing a putting green flag crossed with two golf clubs surrounded by laurel leaves (diameter 18mm x 1.9mm).	Post-medieval/Modern	21
001	Copper Alloy	21	Two British Army .303 blank rounds. One live, one spent. Likely WWI – WWII training rounds.	Post-medieval/Modern	22
001	Nickel Plated Steel & Copper Alloy	19	Three coins, two decimal. Pre-decimal King George V 1920 One Penny. Post-decimal Queen Elizabeth II 1988 One Penny and 2001 Ten Pence.	Modern	23
001	Gold Alloy	19	Gold alloy chain consisting of long links (31mm x 6.8mm) held by a set of three small links (10.8mm x 7.8mm). Total four long links and eleven small links. Uncertain date.	Post-medieval/Modern	24
001	Cupro-Nickel	2	Corroded King George VI Sixpence.	Modern	25
001	Iron	80	Miscellaneous wrought iron fragments. One possible window came (150mm x 7.7mm), one semi-circular boot heel (56mm x 32mm x 5.5mm) and four nail fragments. Two nail heads could be hobnails.	Post-medieval/Modern	26
001	Iron	538	Two iron items recovered from watching brief area adjacent to tennis courts. T-shaped ground marker and the end of a stake. Probably derived from the construction of the tennis courts.	Modern	27
001	Iron with silver plating	25	Very corroded iron spur with evidence of silver plating (neck 24mm long, heel and sides 80mm diameter x 14.2mm wide x 5mm thick). Only neck, heel and sides survive. Neck has a suggestion of a rowel box but this is very corroded. Rowel and terminals missing. Spurs from the 18 th to 19 th centuries often are very similar in form to 17 th century types. This spur likely dates to the 18 th to 19 th century.	Post-medieval	28
001	Glass	146	Four glass items. Two clear bottle bases, one with SAXON in relief. One clear bottle top with screw cap in place with Rhymney brewery logo. One thick green beer bottle body sherd.	Post-medieval/Modern	29

Context	Type	Weight g	Description/Detail	Period	Plate No.
001	Rubber and plastic	94	Two golf balls and one tee. One marked with Medalist 2 and the other Oakdale Golf Driving Range.	Modern	30
Total		1485			

10 Conclusions

- 10.1.1 The investigations consisted of the recording of excavations for a new access path through the scheduled area of Garn Goch Chambered Tomb (SmBr028) and Llangattock Park. A community outreach event was provided for all of the KS2 students at Llangattock Church in Wales Primary School to view the investigations and learn about the Prehistory of the area. A 3D photogrammetric, contour and multispectral survey was undertaken of Garn Goch Chambered Tomb (SmBr028) and the wider Llangattock Park area.
- 10.1.2 No archaeological features or deposits were identified in the excavated areas for the new path. The absence of plough soil across the whole excavated area is remarkable given cartographic evidence for field systems dating back to the 16th century, its low-lying position (80mOD) and the proximity to the River Usk (Figure 4-5; Plate 1). The Park of Cillellan is known from 1538 and may have had origins as a medieval deer park. Later in 1838 the Duke of Beaufort had Llangattock Park House, Park and Gardens built as his summer and hunting residence. It maybe that the fields that the recreation ground covers were landscaped in the past as a pleasure and hunting park and then never subsequently ploughed. This may also explain why the wider area around Garn Goch (SMBR028) is sterile of prehistoric material or deposits, having been removed in the past. Alternately, the recreation ground could have been landscaped when gifted by the Duke of Beaufort to those in the community that fought in WWI and WWII but this would not explain the presence of the 19th century and earlier finds.
- 10.1.3 Unsurprisingly, all of the finds were recovered from the topsoil, which varied in depth but wasn't deeper than 0.2m. The only prehistoric find was that of a small flint chip (Plate 9), which may not be related to the chambered tomb at all. The small piece of Roman tegula (Pate 10) would need further analysis to be sure of its provenance but nevertheless is an interesting discovery with so few Roman sites nearby. The medieval red earthen ware sherds with green glaze (Plate 11) could have come from Llangattock or Crickhowell and probably arrived in the field through night soiling. The remaining finds were of a Post-medieval and Modern date and included 19th and 20th century ceramics, glass and metalwork. Again, probably arriving from night soiling. The recovery of four coins (cupro-nickel King George VI Sixpence, King George V 1920 One Penny, Queen Elizabeth II 1988 One Penny and 2001 Ten Pence piece) from the 20th century almost certainly were deposited after the land was gifted for the recreation ground. A British Army flare cap (Plate 18) and two .303 blank rounds (Plate 22) likely relate to the WWII use of Llangattock Park House and the former parkland by the army. A golf theme (two golf balls and a tee) with some of the finds is not surprising given the nature of the recreation ground but the copper alloy pin badges were an interesting find (Plate 21), especially the one belonging to the home of golf, the St

Andrews Golf Course in Scotland. With a nod to the Detectorists TV programme, no assemblage would be complete without the recovery of two aluminium ring pulls!

- 10.1.4 Arguably the most significant find was that of a very corroded silver-plated 18th to 19th century iron spur (Plate 28). The rowel and terminals were missing but the neck had a suggestion of a rowel box. Comparable examples have been discovered in Hampshire (Maslin 2020) and Wiltshire (Crace 2015) dating to 18th/19th century. The silver-plated copper alloy buckle (Plate 20) may have come from horse tack due to its small size. Together with the lead pistol musket ball (Plate 16) and the fine silver or pewter button (Plate 19), these finds and their loss (deposition) may hint at the use of the former parkland by the Duke of Beaufort, his retinue and staff.
- 10.1.5 The detailed 'digital twin' produced for Garn Goch Chambered Tomb (SMBr028) provides for the first-time accurate 3D height data on the extent of the earthwork and its form. Furthermore, the 'digital twin' provides a benchmark to which future surveys can be undertaken to monitor erosion, damage or further vegetation growth on the earthwork monument. The multispectral analysis was an interesting process but did not identify any features in the recreation ground other than the large 60m long ditch feature running NW/SE across the park to the monument. This feature is almost certainly geological, a large palaeochannel perhaps left during the melting of the ice during the last glaciation episode, and not a cursus or other Neolithic monument leading to the chambered tomb.

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12 Appendix I – Figures

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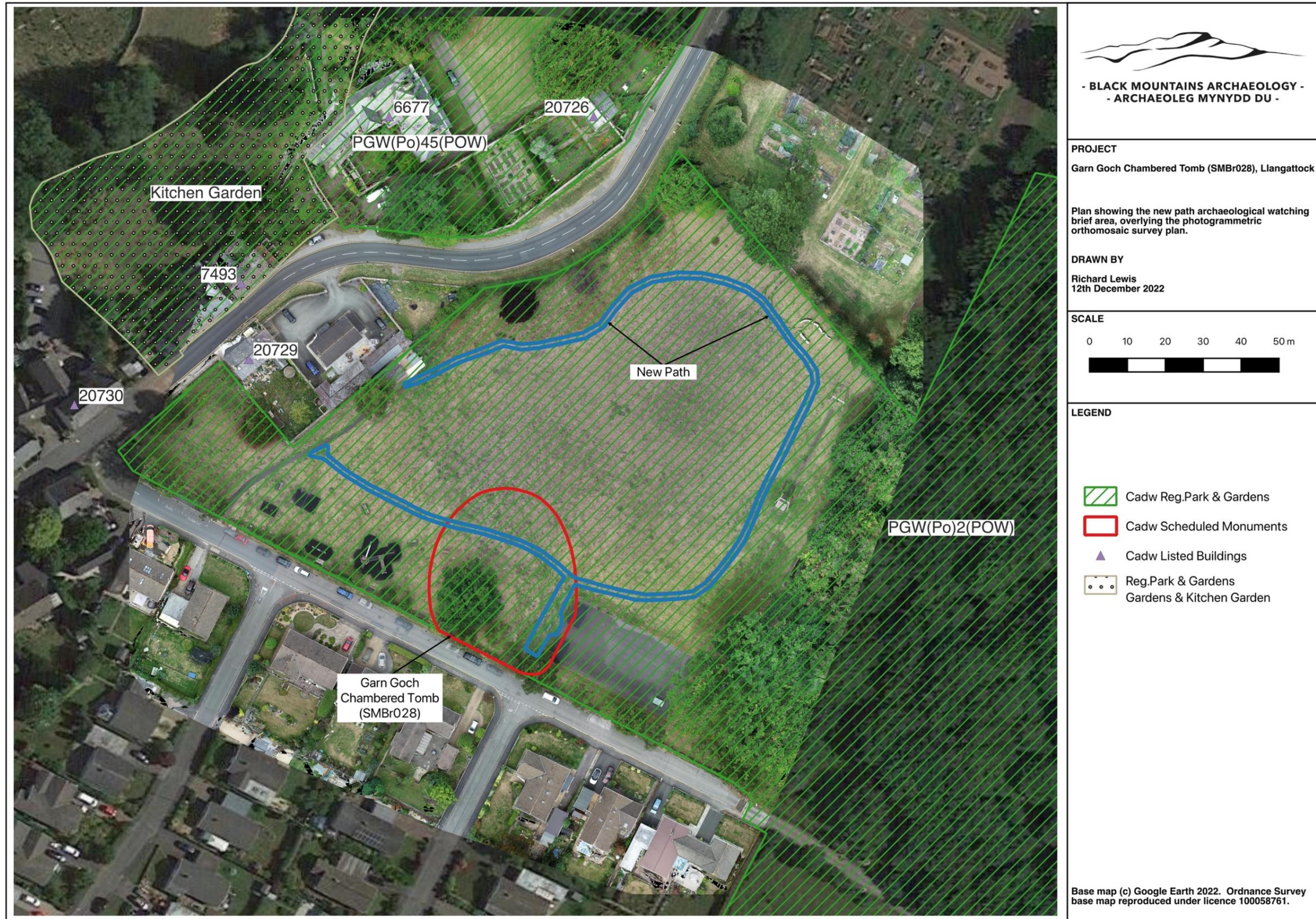


Figure 1. Location plan showing location of the archaeological watching brief (blue) and Scheduled Ancient Monument areas (red). Base map © Google Earth 2022.

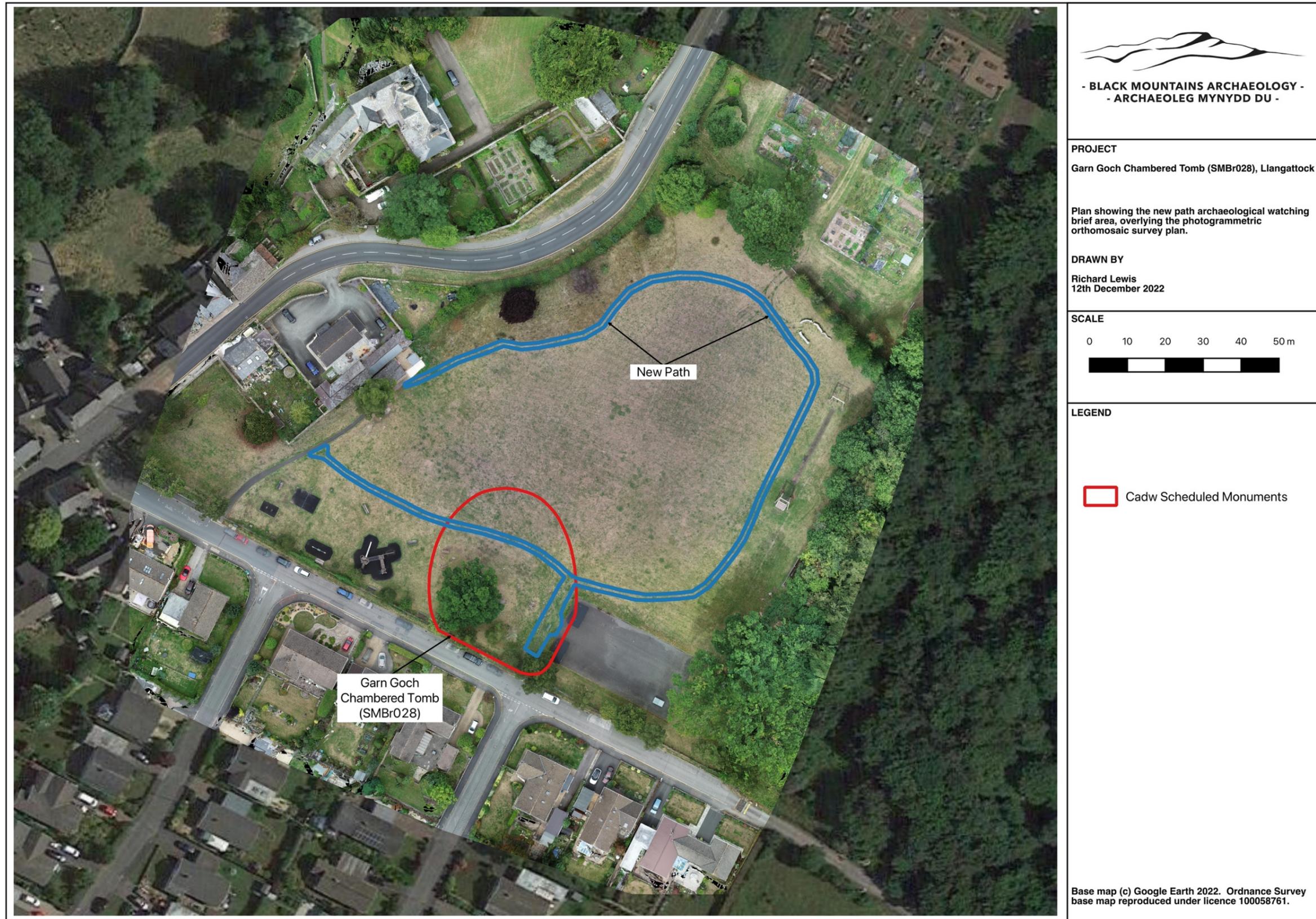


Figure 2. Plan showing the new path archaeological watching brief area (blue), overlying the photogrammetric orthomosaic survey plan. Base map © Google Earth 2022.

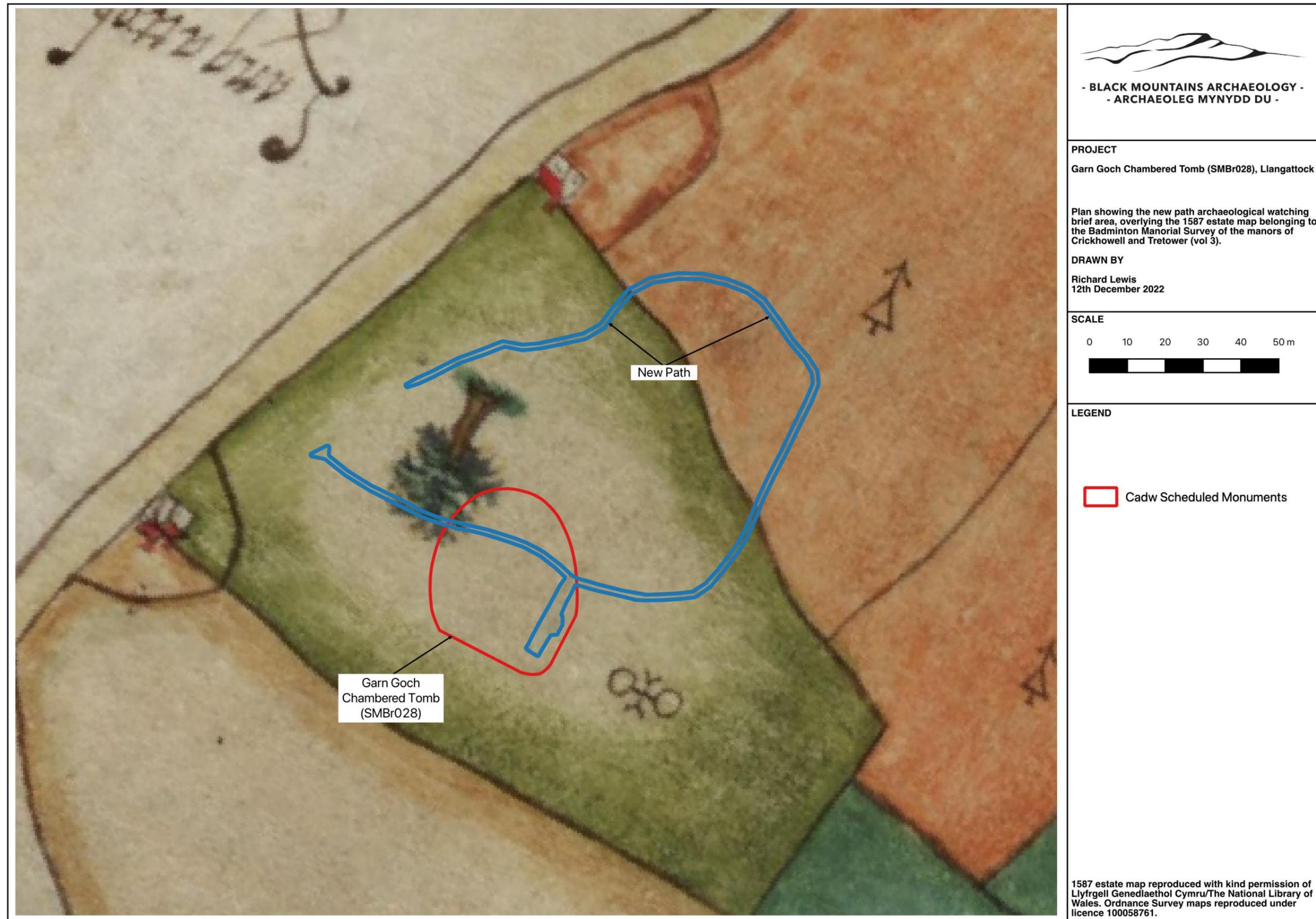


Figure 3. Map belonging to the Badminton Manorial Survey of the manors of Crickhowell and Tretower (vol 3) dated to 1587. Reproduced with kind permission of Llyfrgell Genedlaethol Cymru/The National Library of Wales.

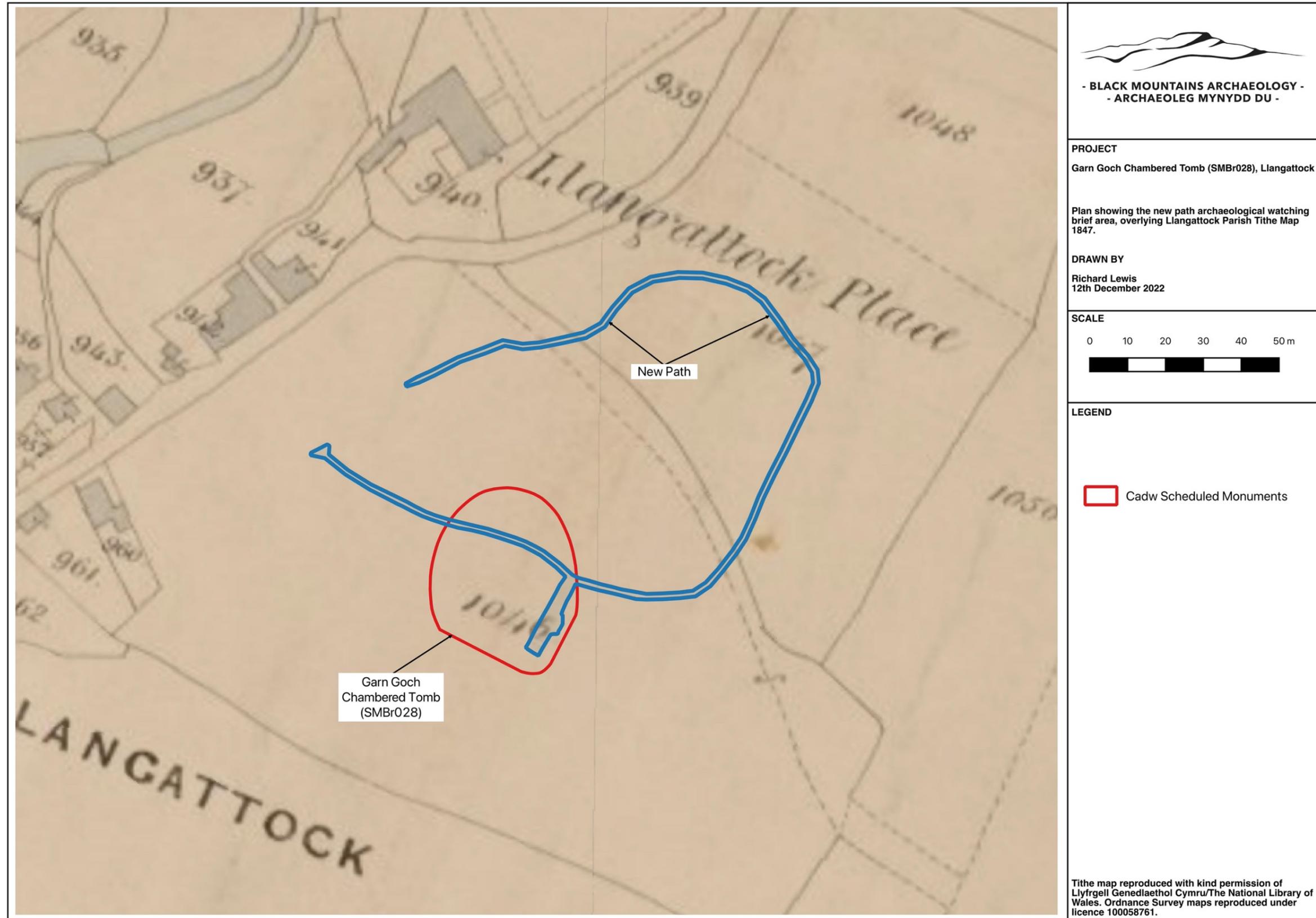


Figure 4. Plan showing the new path archaeological watching brief area (blue), overlying the Llangattock Parish Tithe Map of 1847. Reproduced with kind permission of Llyfrgell Genedlaethol Cymru/The National Library of Wales.

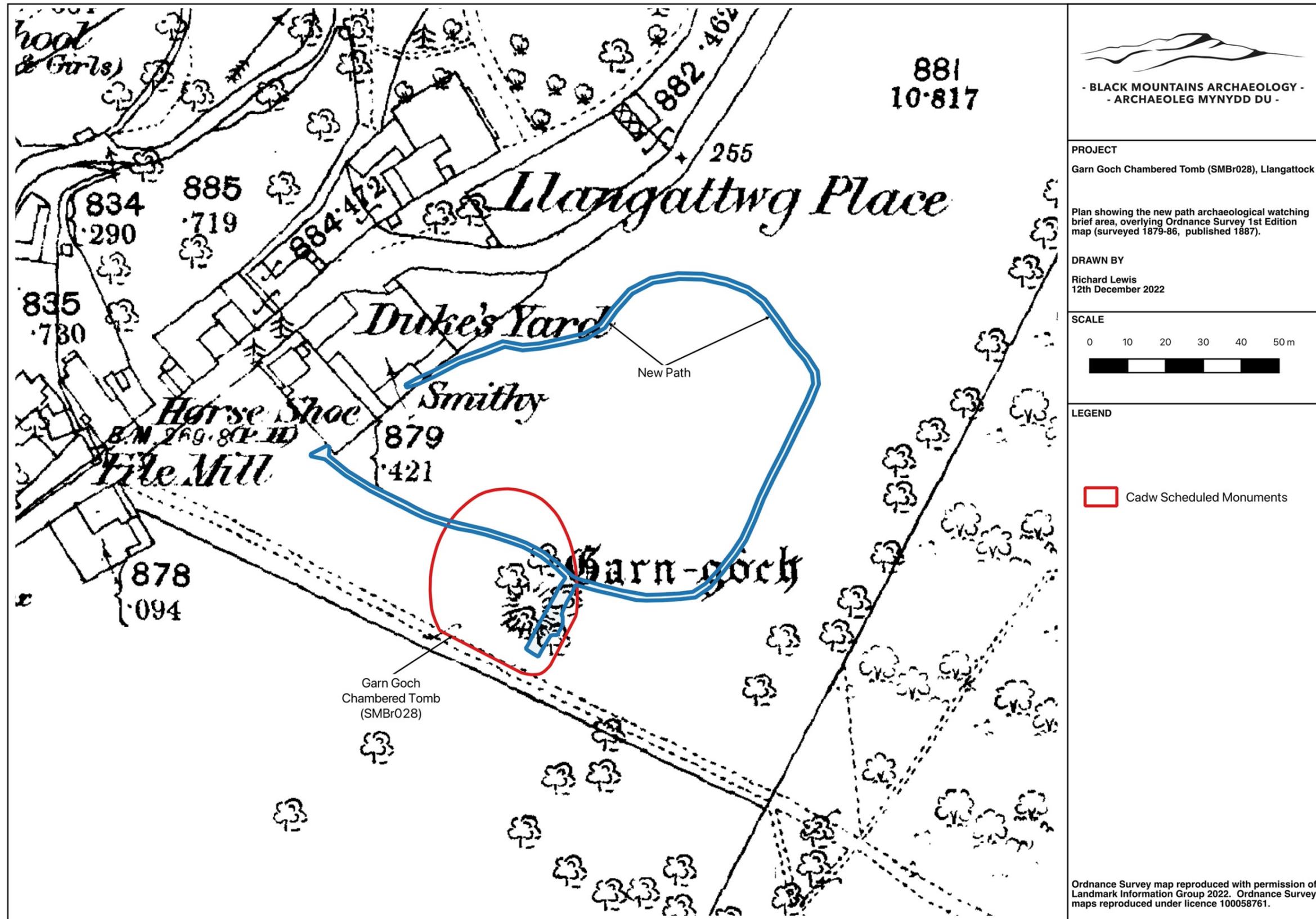


Figure 5. Plan showing the new path archaeological watching brief area (blue), overlying the Ordnance Survey 1st Edition map (1887). Reproduced with permission of Landmark Information Group 2022.

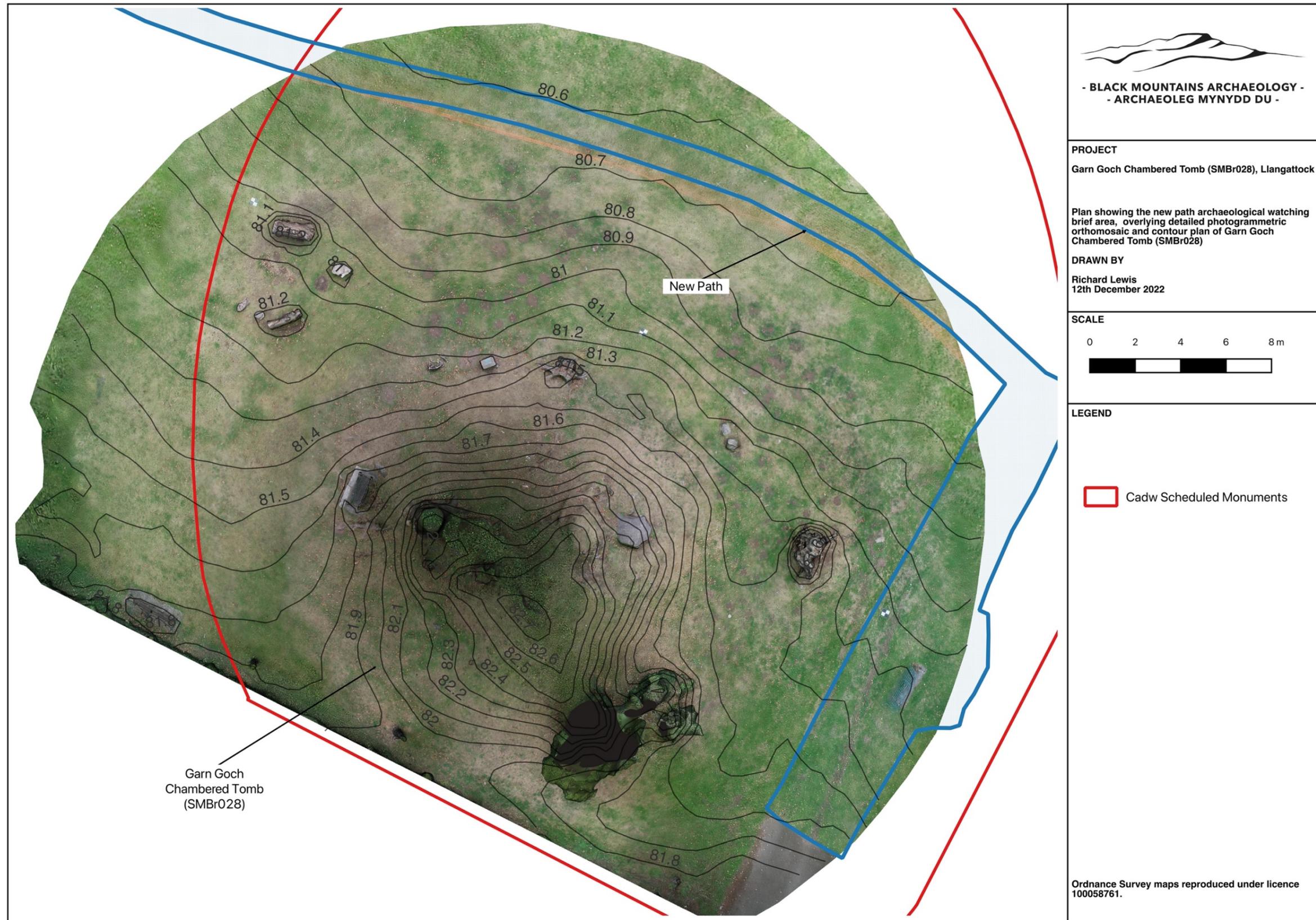


Figure 6. Plan showing the new path archaeological watching brief area (blue), overlying the detailed photogrammetric orthomosaic and contour survey plan. Contour height shown in metres Ordnance Datum (Newlyn).

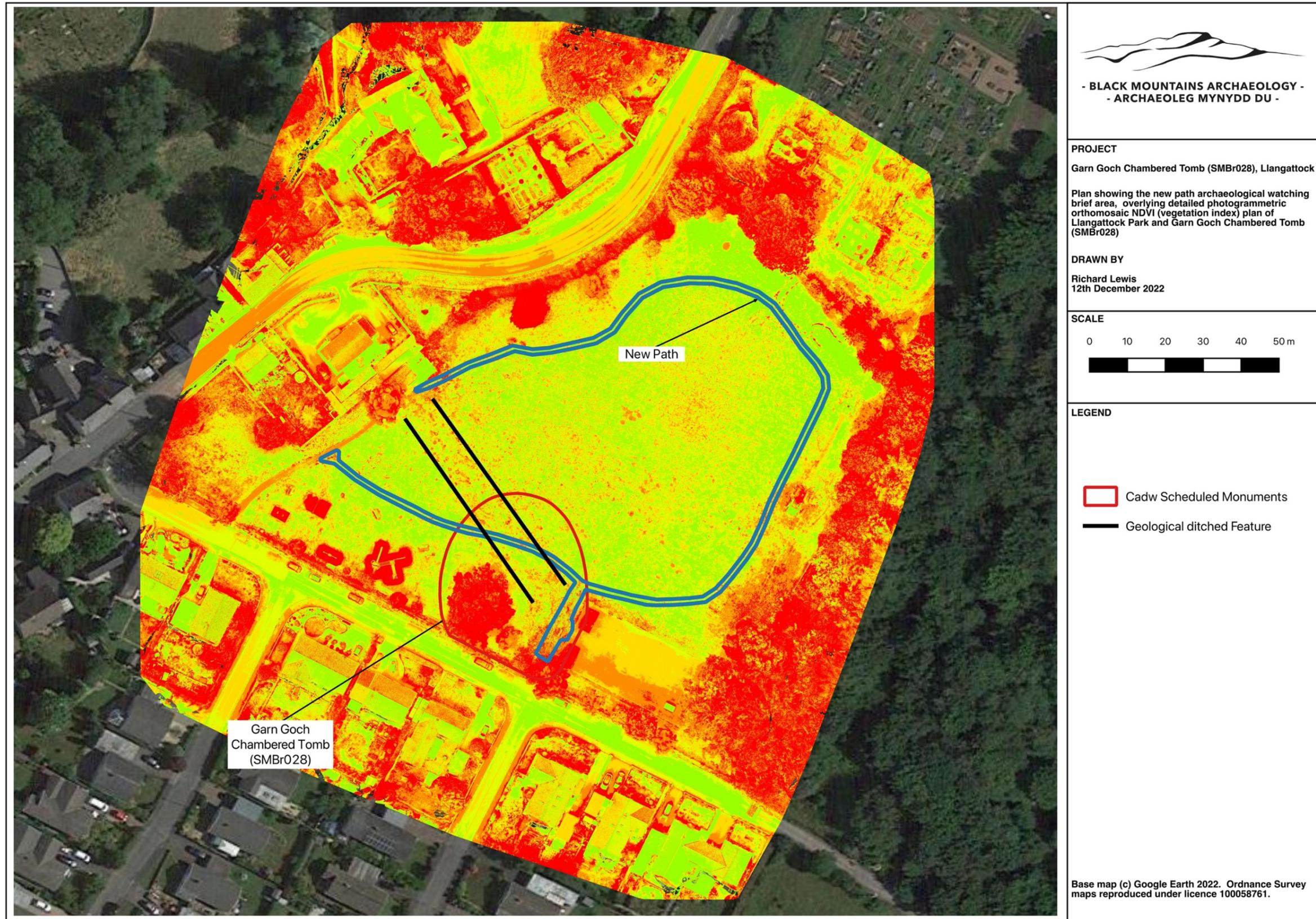


Figure 7. Plan showing the new path archaeological watching brief area, overlying detailed multispectral photogrammetric NDVI (vegetation index) plan of Llangattock Park and Garn Goch Chambered Tomb (SMBR028).



Figure 8. Oblique orthographic view of the photogrammetric 3D model of Llangattock Park and Garn Goch Chambered Tomb (SMBR028).

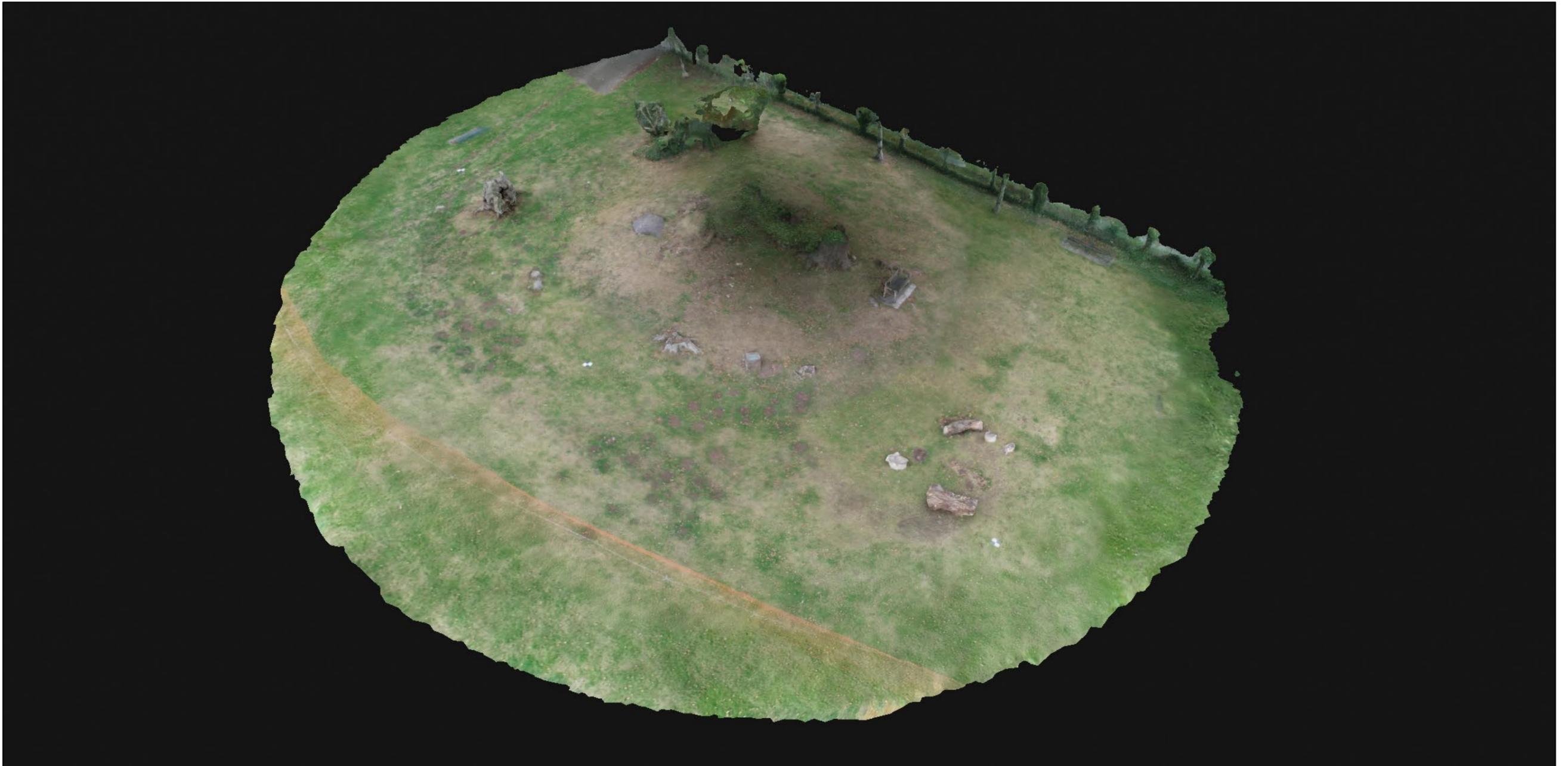


Figure 9. Oblique orthographic view with trees and vegetation removed of the detailed photogrammetric 3D model of Garn Goch Chambered Tomb (SMBR028).

13 Appendix II – Plates

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Plate 1. Map belonging to the Badminton Manorial Survey of the manors of Crickhowell and Tretower (vol 3) dated to 1587. Reproduced with kind permission of Llyfrgell Genedlaethol Cymru/The National Library of Wales.



Plate 2. Garn Goch Chambered Tomb (SMBR028) prior to archaeological investigation (view to SW).



Plate 3. Garn Goch Chambered Tomb (SMBR028) during 3D photogrammetric survey (view to SW).



Plate 4. Excavations for new path (view to W).



Plate 5. Excavations for new path (view to E).



Plate 6. Brecon & Radnor Express article on community event for Llangattock Church in Wales Primary School.



Plate 7. Community event for Llangattock Church in Wales Primary School.



Plate 8. 500,000 years of prehistory laid out for the Llangattock Church in Wales Primary School community event (kinaesthetic learning).

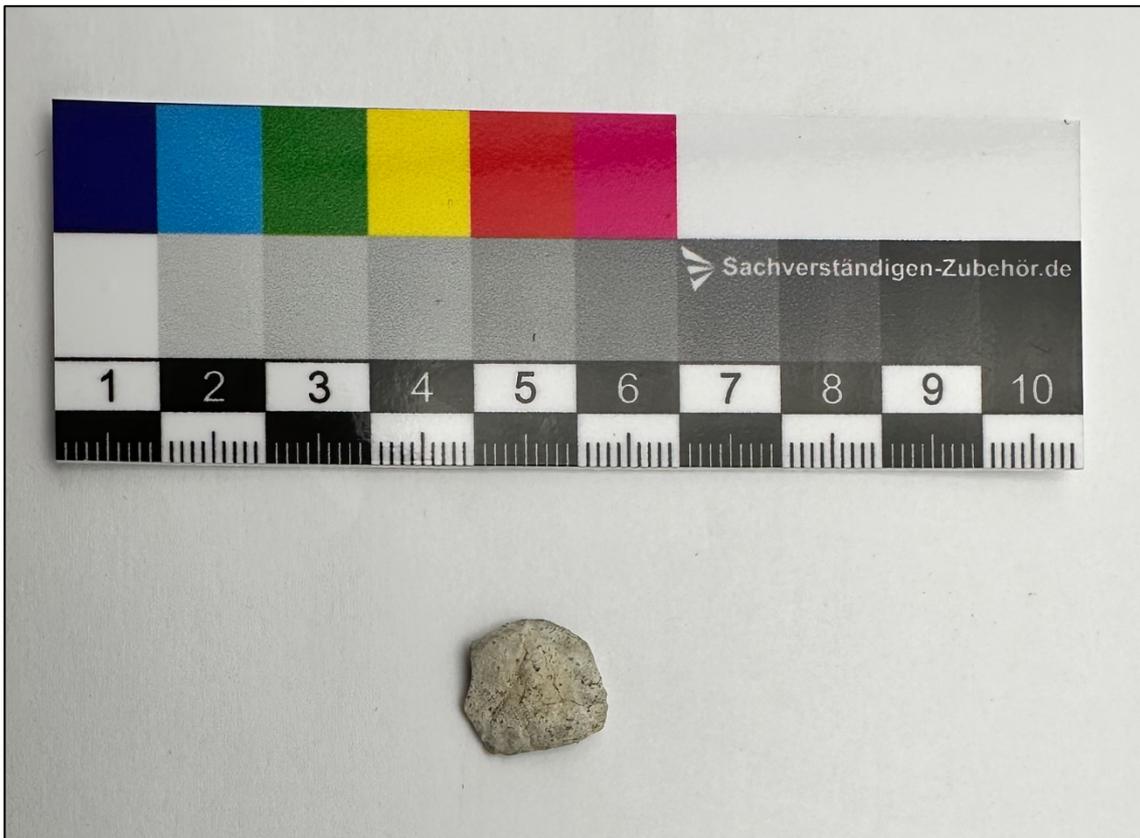


Plate 9. Prehistoric cortex covered flint chip.



Plate 10. Handmade brick or tile, possibly a fragment of Roman tegula.



Plate 11. Two medieval red earthen ware body sherds with green glaze, probably from the same vessel.



Plate 12. Seven sherds of glazed red earthenware. One rim and six body sherds.



Plate 13 Two body sherds from two salt glaze vessels dating to late 19th to early 20th centuries.



Plate 14. Eight white earthenware sherds, six blue transfer-printed with vegetive designs.



Plate 15. Two small clay pipe stem fragments.



Plate 16. A lead pistol 'musket' ball (left). Lead smelting residue/droplet (bottom). Folded lead electrical(?) seal (top).



Plate 17. Two ring pulls and a Dupli-Color Inc, Cheshire, paint tube.



Plate 18. Copper alloy British Army flare cap (50mm x 26mm) and curtain rail bracket.

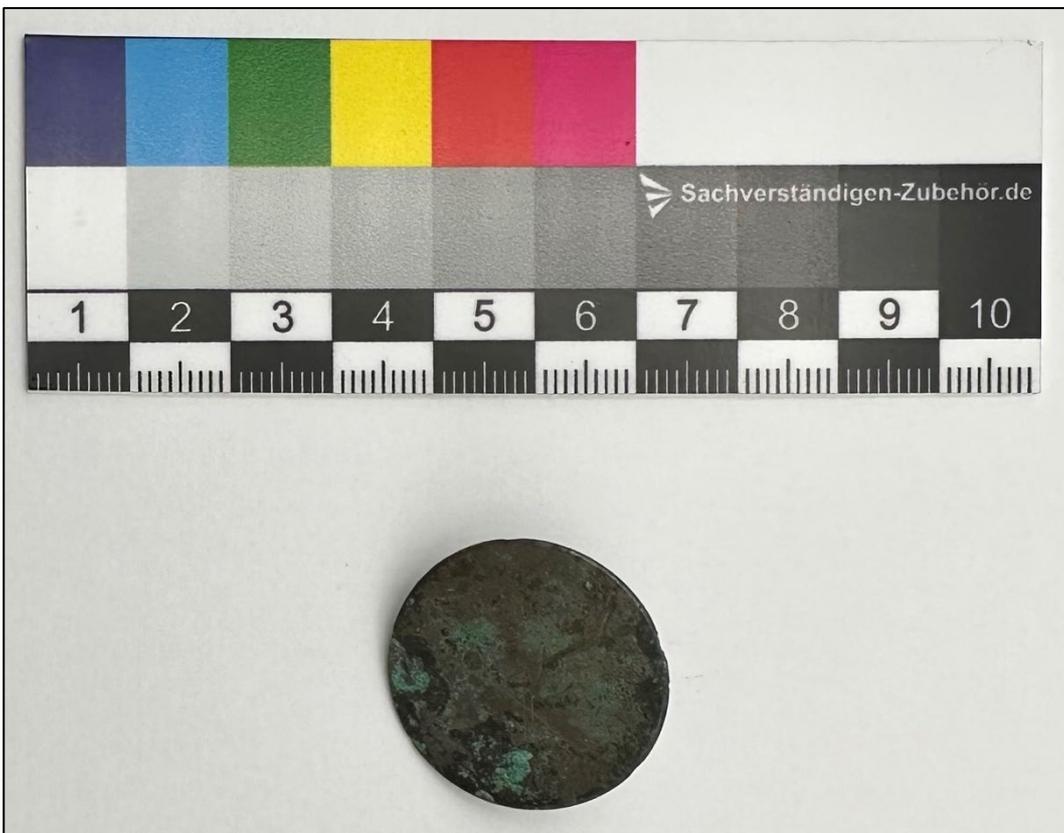


Plate 19. A fine silver or Pewter button with an eroded clasp on reverse and scratches on face, probably post-deposition.



Plate 20. Copper alloy buckle (horse tack?) with silver enamel and iron pin.



Plate 21. Two copper alloy badges. One in the shape of a shield (right) with double plate for clasp. Second is a St Andrews golf pin badge with "Extracts St Andrews" written on face around a logo (left).



Plate 22. Two British Army .303 blank rounds. One live, one spent. Likely WWI – WWII training rounds.



Plate 23. Three coins, two decimal. Pre-decimal King George V 1920 One Penny. Post-decimal Queen Elizabeth II 1988 One Penny and 2001 Ten Pence.



Plate 24. Gold alloy chain consisting of long links held by a set of three small links.



Plate 25. Corroded Cupro-Nickel King George VI Sixpence.



Plate 26. Miscellaneous wrought iron fragments. One possible window came, one boot heel and four nail fragments. Two of the nail heads could be hobnails.



Plate 27. T-shaped ground marker and the end of a stake recovered from the area adjacent to tennis courts. Probably derived from the construction of the tennis courts.



Plate 28. Very corroded 18th/19th century iron spur with evidence of silver plating. Rowel and terminals missing.



Plate 29. Two clear bottle bases, one with SAXON in relief. One clear bottle top with screw cap in place with Rhymney brewery logo. One thick green beer bottle body sherd.



Plate 30. Two golf balls and one tee. One marked with Medalist 2 and the other Oakdale Golf Driving Range.

14 Appendix III – Context Inventory

14.1.1 The investigations consisted of the recording of excavations for a new access path through the scheduled area of Garn Goch Chambered Tomb (SmBr028) and Llangattock Park. A 3D photogrammetric, contour and multispectral survey was undertaken of Garn Goch Chambered Tomb (SmBr028) and the wider Llangattock Park area.

14.1.2 The investigations were tied into the Ordnance Survey National Grid and Datum using Ground Control Points (GCPs) surveyed with an RTK GNSS GPS receiver.

Context	Type	Dimensions	Description	Period
001	Deposit	0m – 0.2m	Light brown silt-loam topsoil layer 0.05m to 0.2m in depth. Numerous Post-medieval and Modern finds recovered from this deposit.	Post-medieval/Modern
002	Deposit	0.2m n.b	Reddish-brown coloured superficial till deposits of Devensian sands and gravels from seasonal and post glacial meltwater outwash overlying interbedded sandstone bedrock (Senni Formation) of sedimentary bedrock.	Natural

All depths below present ground level unless otherwise stated. N.b = not bottomed.



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Yn rhan o'n hawydd i wella ansawdd ein gwasanaeth, rydym yn croesawu unrhyw adborth y gallwch ei ddarparu.

As part of our desire to improve our quality of service we welcome any feedback you are able to provide.

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