

CPAT WSI 2095-2

Twmbarlwm

ARCHAEOLOGICAL INVESTIGATION

Written Scheme of Investigation



submitted by

Clwyd-Powys Archaeological Trust

on behalf of

Cymdeithas Twmbarlwm Society

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**YMDDIRIEDOLAETH ARCHAEOLEGOL CLWYD-POWYS
CLWYD-POWYS ARCHAEOLOGICAL TRUST**

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The Clwyd-Powys Archaeological Trust is a Registered Organisation
with the Chartered Institute for Archaeologists

Clwyd-Powys Archaeological Trust

The Clwyd-Powys Archaeological Trust (CPAT) works to protect, record and interpret all aspects of the historic environment. We advise developers and local authorities on archaeology and planning, undertake archaeological projects for public- and private-sector clients, and have wide-ranging programmes of community archaeology events and activities.

The CPAT Field Services team is the leading archaeological practice in mid- and north-east Wales, and one of the longest-established commercial archaeology contractors in Europe.

CPAT is one of four archaeological trusts established in Wales in the mid-1970s to provide an archaeological service across the whole of the Principality. It is both a registered charity and a limited company, and its activities are managed by a board of Trustees. It is also Registered Organisation (RO) with the Chartered Institute for Archaeologists (CIfA). Further information regarding the Trust, including summary reports of some of the more significant recent projects can be found on its website at www.cpat.org.uk

Ymddiriedolaeth Archaeolegol Clwyd-Powys

Mae Ymddiriedolaeth Archaeolegol Clwyd-Powys (CPAT) yn gweithio i warchod, cofnodi a dehongli pob agwedd ar yr amgylchedd hanesyddol. Rydym yn cynghori datblygwyr ac awdurdodau lleol ar archaeoleg a chynllunio ac yn ymgymryd â phrosiectau archaeolegol ar ran cleientiaid yn y sectorau cyhoeddus a phreifat, ac mae gennym raglenni eang eu hystod o ddiwyddiadau a gweithgareddau archaeolegol cymunedol.

Tîm Gwasanaethau Maes CPAT yw'r prif bractis archaeolegol yng nghanolbarth a gogledd-ddwyrain Cymru, ac mae'n un o'r contractwyr archaeoleg masnachol mwyaf hirsefydlog yn Ewrop.

Mae CPAT yn un o bedair ymddiriedolaeth archaeolegol a sefydlwyd yng Nghymru yng nghanol y 1970au i ddarparu gwasanaeth archaeolegol ledled Cymru. Mae'r Ymddiriedolaeth yn elusen gofrestrdig a hefyd yn gwmni cyfyngedig, ac mae ei gweithgareddau'n cael eu rheoli gan fwrdd Ymddiriedolwyr. Mae hefyd yn Registered Organisation (RO) gyda'r Chartered Institute for Archaeologists (CIfA). Mae mwy o wybodaeth am yr Ymddiriedolaeth, gan gynnwys adroddiadau cryno ar rai o'r prosiectau diweddar mwyaf arwyddocaol hefyd i'w gweld ar ei gwefan yn www.cpat.org.uk

1 Introduction

- 1.1. The Clwyd-Powys Archaeological Trust (CPAT) has been invited by Cymdeithas Twmbarlwm Society to undertake a further programme of volunteer-based archaeological investigation at Twmbarlwm, Risca (NGR ST2422092615). The concept of carrying out some investigative work at Twmbarlwm was born in 2018, when a large fire resulted in the loss of surface vegetation and degradation of the topsoil, and in the process exposed a number of previously unseen features. It was readily appreciated that there was a need for archaeological investigations to be carried out to determine the degree of impact on the monument from the fire and accordingly Cymdeithas Twmbarlwm Society, in association with Cadw, drew up a programme of works to achieve this object. These were also intended to examine the site in order to inform proposals for restoration and revegetation, as well as to improve understanding and interpretation.
- 1.2. Twmbarlwm is a prominent hill and the scheduled monument (MM044) occupies a dominant position at the southern end and high point of the Mynydd Maen ridge. The monument comprises a univallate enclosure occupying approximately 4.14 ha, and a substantial mound, some 20m across and 8m high. The enclosure has conventionally been understood to be an Iron Age hillfort, with the mound interpreted as a medieval motte. The programme suggested in this Written Scheme of Investigation (WSI) is designed to complement the programme of investigations that were undertaken in the period up to 2021, and which are described below.
- 1.3. The initial work comprised the creation of a 3D UAV photogrammetric data model and was produced by SkyWest Surveys in 2018. This was then utilised and suitably adjusted to produce a conventional hachure plan of the earthworks and associated features which was ‘ground-truthed’ in the following year using conventional survey techniques. The final output was an annotated, interpretive plan of the monument showing all the earthworks and features present and incorporating those that became apparent after the fire.
- 1.4. Geophysical survey formed another part of the investigations; this was carried out by Archaeological Survey West (ASW) Limited, and was undertaken in accordance with the Chartered Institute for Archaeologists’ (CifA) *Standard and Guidance for Geophysical Survey*. The resulting report (Matthews 2021) concluded that although features of potential archaeological interest had been identified across the site, the effects of the fire had significantly reduced the clarity of the data, especially on the south facing side of the enclosure, where the burning seemed to be more severe. It was suggested that some of the potential archaeological features might merit further investigation by means of excavation.
- 1.5. Palaeoenvironmental sampling (Grant 2020) also formed part of the investigations. It had been proposed that this would be focussed on the pond in the centre of the site, but the deposit there was very shallow and contained anthropogenic indicators throughout. Two other samples were taken in the surrounding area and of these the most significant was taken where a small, spring-fed mire was identified on a shelf downslope to the east of the monument at NGR ST 24597 192669. This revealed a sufficiently deep deposit to have the potential to provide evidence of the vegetational history of the area in general over a significant time period. It was suggested that further work could be carried out on this core, and more particularly that radiocarbon dating would allow its chronology to be understood in comparison to the monument.
- 1.6. It had been intended that excavations would be carried out in support of the preceding works but this was delayed by a combination of bad weather and the intervention of the Covid-19 pandemic. Accordingly, it was not until the second half of 2021 that this element of the work could be carried out. A number of possible targets were identified, including sections of the enclosure bank and ditch; a possible cairn within the enclosure near the motte; and one of a series of sub-circular stone features thought to potentially identify the sites of structures within the enclosure. The method adopted was to use the technique commonly known as *evaluation*, where the level of intervention (trenching) is minimised while still satisfying the overall aims of the work, to ensure the survival of as much of the deposits *in-situ* as possible.
- 1.7. The excavation of Trench 1 showed that the earthworks of the enclosure, at least in part, appeared to be discontinuous and therefore possibly incomplete. Radiocarbon dates from the ditch fills identified in Trench 3 provided dates in the late Iron Age and Neolithic; the former presumably denoting the already suspected use of the site as a hillfort and the latter possibly anomalous though potentially hinting at the possibility of an early phase as a causewayed enclosure.

- 1.8. This WSI sets out the scope of archaeological works proposed for later in 2022, which will be almost exclusively community-based work with local volunteers under the supervision of CPAT staff. These investigations are intended to further investigate and elucidate the nature of the monument and the impact on it resulting from the fire in 2018.



Fig. 1: Ministry of Works plaque commemorating conservation work undertaken by the Manpower Services Commission at Twmbarlwm in 1984. The plaque is located at the foot of the motte and describes the enclosure as being 'thought to be an iron age hill fort but perhaps of medieval construction'

2 Aims and Objectives

- 2.1. The primary aim of the work in this season is to inform Cadw of the nature of the monument and the degree to which it has been impacted by the fire in 2018. The previous work has gone some way to understanding this impact but there are areas of the monument, particularly to the south, where information is lacking.
- 2.2. The objectives of the investigation are:
- to reveal by means of field excavation the nature, condition, significance and, where possible, the chronology of the cultural heritage within the areas described below;
 - to prepare a report outlining the results of the excavations;
 - to prepare a final publication of the results in an appropriate regional or national journal, depending on the nature and significance of any archaeology.
- 2.3. Assessment of the results of the previous work has identified the following priorities for additional excavation:
- Another section across the enclosure earthworks is needed to provide comparative evidence regarding the potential for the enclosure to belong to two separate phases
 - The excavation of a further sub-circular feature to compare with the one excavated in 2021
 - Excavation of a section across the presumed cairn to determine its origin and dating, if that is possible.

- Targeted augering and excavation of the perimeter of the motte with a view to revealing information regarding its structure and to provide an opportunity for its dating.
 - Assessment of the impact of the fire at each of the above to form a broader picture.
- 2.4. The investigation is also intended to involve, as much as possible, volunteers from the surrounding local communities. Cymdeithas Twmbarlwm Society will be the primary source of these volunteers, through their own membership and local networks and contacts. Some opportunities may also be offered for CPAT volunteers to join the fieldwork as appropriate.

3 Methodology

Dating

- 3.1. In addition to any material revealed by the proposed excavations which could be suitable for radiocarbon dating, it is proposed that dates be obtained for the palaeoenvironmental deposit that was identified in 2020. This should allow the vegetational history of the area to be compared to the monument now that dates for the latter have been obtained.
- 3.2. If suitable deposits are revealed by work on the cairn and the motte (see below), then it is proposed that samples be taken which can be subjected to either Optically Stimulated Luminescence (OSL) or radiocarbon dating. This will hopefully resolve current uncertainties over the origin of these parts of the monument.

Excavations

- 3.3. The excavations will be conducted according to the Chartered Institute for Archaeologists' (CIfA) *Standard and Guidance for an Archaeological Excavation* (2014).
- 3.4. All of the proposals listed below will be subject to final approval on their placement from Will Davies, Cadw's Regional Inspector of Ancient Monuments, the locations given on the following plan (Fig. 6) are indicative. All have the potential to reveal material that can be dated and therefore be used to further understand the nature and phasing of the monument.

Enclosure

- 3.5. Excavation is proposed at two localities, both on the south side of the monument. The first of these (see Fig. 2) is to the east of Trench 1 from 2021 and will comprise a 3m-wide trench across the line of the bank and ditch in an area where there is less likely to have been disturbance from the believed modification of the posited Neolithic enclosure to form a hillfort. This seems to be the best place to assess the veracity of the early enclosure.



Fig. 2: The relatively undisturbed section of the enclosure looking east from near Trench 1

- 3.6. The second location is about half way along the south side of the enclosure, where another sub-circular feature has been identified on the line of the bank, similar to that investigated in Trench 2 in 2021. The excavation of a trench here would have two aims: to assess the impact of burning in an area where the fire is thought to have reached its highest temperature; and to determine whether the nature of the feature corroborates the suggestion from the previous excavation that these features may owe their appearance to the robbing of a dump of stone produced by the excavation of the ditch, rather than identify evidence of settlement.



Fig. 3: The sub-circular feature on the south side of the enclosure, from north-east

Cairn

- 3.7. The nature of this feature is currently uncertain and of all the various parts of the monument as a whole, this is probably the one which is most susceptible to visitor erosion and disturbance. A trench

across the earthwork will provide a better understanding of these aspects and also of the impact of the fire. It should also be used to assess how the earthwork relates to the adjacent cultivation ridges.



Fig. 4: The cairn (or possible bridge abutment) located on the western lip of the rock-cut ditch of the motte. This view is looking west from the summit of the motte. The cultivation ridges can be seen clearly in the background.

Motte

- 3.8. Work here will commence with a programme of augering to assess the accessible deposits and explore the possibility that there might be a buried ground surface beneath the earthwork. There is no need to auger the uppermost parts of the motte as all that is required is to find significant evidence beneath the motte itself which could subsequently be reached by the excavation of a trench into its perimeter. If this evidence is found then it can be investigated by the trench, which can target material suitable for dating, either radiocarbon if charcoal is revealed, or by taking samples for OSL dating.



Fig. 5: The motte and adjoining ditch on their west side, from the north. The augering and excavation will concentrate on the slope of the motte to the left of the image.

- 3.9. All trenches will be entirely excavated by hand. The excavation of archaeological features or deposits will be undertaken by hand using the conventional techniques for archaeological excavation.
- 3.10. Where features of archaeological interest are identified they will be systematically investigated by hand with sufficient work being undertaken to determine their date, character and function, using the conventional techniques for archaeological excavation and in accordance with CIfA *Standard and Guidance*.
- All features will be located as accurately as possible on an overall plan of the development at an appropriate scale, showing boundaries depicted on Ordnance Survey mapping. Trenches will be located by survey grade GPS. Photogrammetry will be used to accurately and rapidly plan stone spreads/structures and other features.
 - Contexts will be recorded on individual record forms, using a continuous numbering system, and be drawn and photographed as appropriate.
 - Stratigraphic units will be assigned a record number and entered along with a description on an individual record form or trench recording sheet as appropriate.
 - Plans will be drawn using suitably located and scaled photogrammetry, or on permatrace at a scale of 1:10, 1:20 or 1:50, as appropriate.
 - All photography will be taken using a digital SLR camera with a minimum resolution of 12 megapixels, including a metric scale in each view, with views logged in a photographic register.
 - If human burials are discovered the Ministry of Justice will be informed. The remains will initially be left in situ, and if removal is required, a MoJ licence will be applied for.
 - In the event of finding any artefacts covered by the provisions of the Treasure Act 1996, the appropriate procedures under this legislation will be followed.

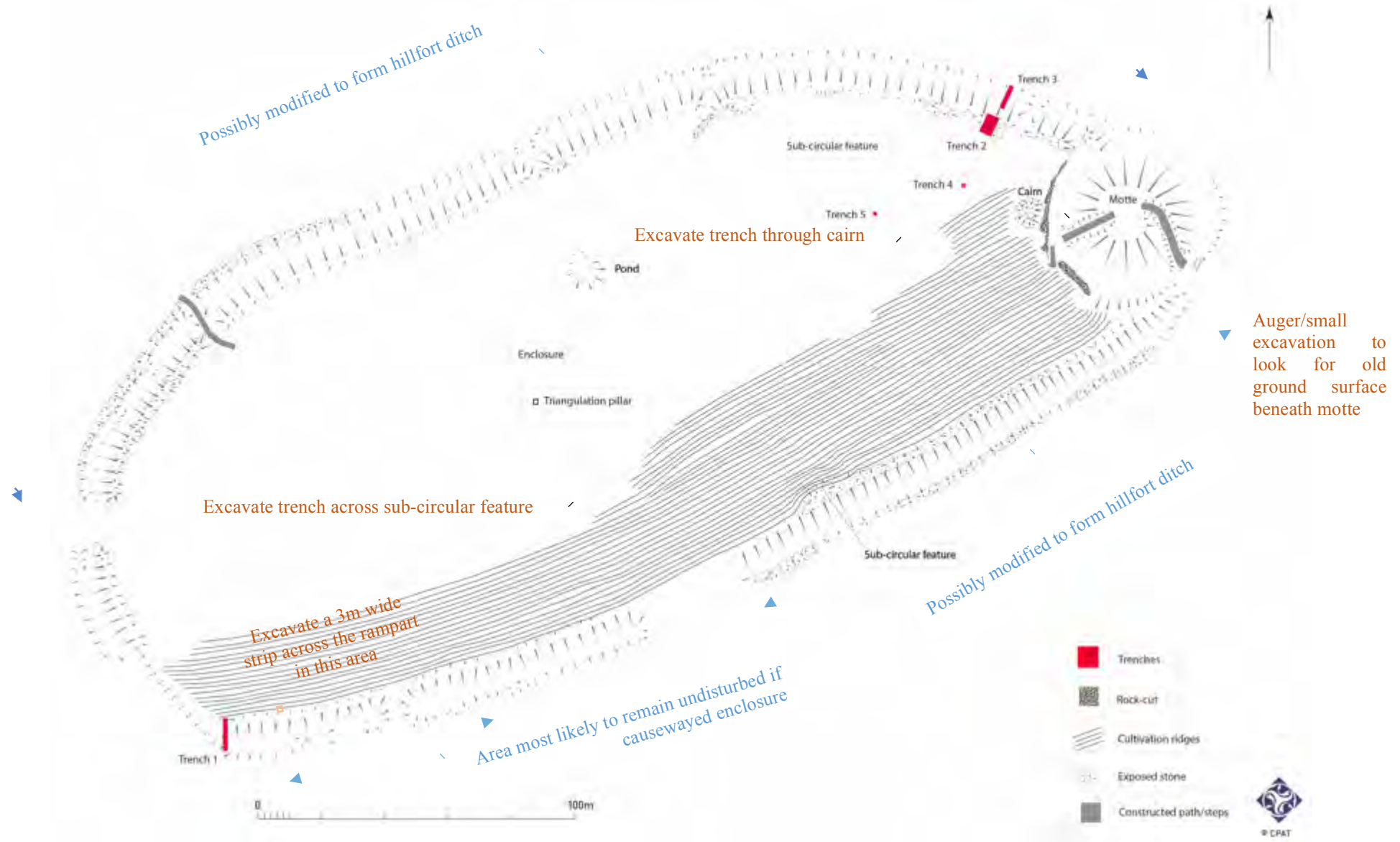


Fig. 6: Hachured plan of the monument showing trenches excavated in 2021 and areas for investigation in 2022

Artefacts

- 3.11. All artefacts and environmental samples will be treated in a manner appropriate to their composition and a sampling strategy will be developed as appropriate:
- All stratified finds will be collected by context, or where appropriate, individually recorded in three dimensions. Unstratified finds will only be collected where they contribute significantly to the project objectives or are of particular intrinsic interest.
 - All finds and samples will be collected, processed, sorted, quantified, recorded, labelled, packed, stored, marked, assessed, analysed and conserved in a manner appropriate to their composition and in line with appropriate guidance.
 - Arrangements will be made to assess and study any artefacts, assemblages and environmental samples.
 - Any artefacts recovered during the recording process will be deposited with the nearest regional or county Museum, subject to the permission of the owner. The artefacts will be deposited along with a copy of the site report including a detailed list of all artefacts recovered.

Site archive

- 3.12. The overall archive will conform to guidelines described in *Management of Research Projects in the Historic Environment* (MoRPHE), Historic England 2015, the CIfA (2014) *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* and *The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales* (NPAAW, 2017) and *Guidance for the Submission of Data to the Welsh Historic Environment Records* (HERs) V1 (July 2018).
- 3.13. The paper and digital archive will be deposited with the National Monuments Record (NMR), RCAHMW, including a copy of the final report. This archive will include all written, drawn, survey and photographic records relating directly to the investigations undertaken. NMR Digital archives will follow the standard required by the RCAHMW (RCAHMW 2015). A copy of the digital archive only will also be lodged with the Historic Environment Record, Glamorgan-Gwent Archaeological Trust.

Report

- 3.14. Following the on-site work an illustrated report will be prepared containing conventional sections to include:
- Non-technical summary
 - Introduction
 - Site location
 - Archaeological Background
 - Excavation
 - Conclusions
 - References
 - Appropriate appendices on archives and finds
- 3.15. The report summary will be provided in English and Welsh, in accordance with the Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) V1 (July 2018).

4 Resources and programming

- 4.1. The assessment will be undertaken by a team of skilled archaeologists under the overall supervision of Tim Malim, a senior member of CPAT's staff who is also a Member of the Chartered Institute for Archaeologists (MCIfA). Fieldwork will be directed by senior members of CPAT's Field Services team, with up to three members of staff present at any one time dependant on availability. Detailed CVs of all staff members are available on request.
- 4.2. In addition to the CPAT team, Cadw historic environment branch staff have agreed to be involved.
- 4.3. A period of three consecutive weeks has been allocated to the completion of the excavations. It is proposed that an opportunity will also be made available for volunteers to participate in the work over

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- one weekend, while the excavations are ongoing; the reason being that some members of the Cymdeithas Twmbarlwm Society are not available during normal working hours. This public archaeology element is something that CPAT has considerable experience of developing and delivering as CPAT is an educational charity whose sole object is the ‘education of the public in archaeology’, and has provided numerous outreach and engagement projects on behalf of Cadw and other funders in the past. It is envisaged that Cymdeithas Twmbarlwm Society will provide an initial contact point for the recruitment of volunteers.
- 4.4. CPAT is also a CIfA Registered Organisation and as such agrees to abide by their *Code of Conduct* (2014) and the *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (2014).
 - 4.5. All report preparation will be completed by or with the assistance of the same field archaeologist(s) who conducted the fieldwork.
 - 4.6. The Society is advised that should significant archaeological remains or artefacts be revealed, additional services may be required for which a contingency should be allowed. The need for such contingencies, and their scope and potential cost, would be subject to discussions between CPAT, Cymdeithas Twmbarlwm Society and Cadw once the fieldwork has been completed. Grants for scientific dating will be requested by CPAT from the Monmouthshire Antiquarian Association.
 - 4.7. Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.
 - 4.8. CPAT is covered by appropriate Public and Employer's Liability insurance, as well as Professional Indemnity insurance. Details are available on request.

5 Sources

Grant, F. R., 2020. *A pollen analytic assessment of sub-samples from three cores from Twmbarlwm, Risca, South Wales*. Unpublished report 01/20.

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Matthews, C., 2021. *Twmbarlwm: Geophysical Investigations 2019 and 2021*, Unpublished ASW report.

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27 June 2022