

Archaeology Wales

Old Furnace Cottage, Tintern Monmouthshire

Archaeological Watching Brief



By

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Report No. 1722

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Archaeology Wales

Old Furnace Cottage, Tintern Monmouthshire

Archaeological Watching Brief

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Contents

1. Introduction	3
2. Site Description and Archaeological Background	3
3. Objectives and Methodology	4
4. Watching Brief Results	5
5. Discussions and Conclusions	8
6. Bibliography	9

Appendix 1. Context Register

Appendix 2. Finds Assemblage

Appendix 3. Figures

Appendix 4. Plates

Appendix 5. Written Scheme of Investigation

List of Figures

Figure 1	Location of site within the wider landscape
Figure 2	Location of site marked in red
Figure 3	Details of groundworks

List of Plates

Plate 1	Overview of retaining wall area
Plate 2	SE Facing Section of Stone Wall (006), [007], (008)
Plate 3	SW Facing Section of Retaining Wall Area (001), (002)
Plate 4	NE Facing Section of Footing Trench (021), (023), (025), (026)

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Summary

This report results from work undertaken by Archaeology Wales Ltd (AW) for Mr Steven R Taylor at Old Furnace Cottage, Forge Road, Tintern NP16 6TR (NGR SO5128900374). The report details the results of an archaeological watching brief that took place to ensure the preservation by record of any archaeological remains encountered during groundworks associated with the demolition of an existing extension and replacement with a new single storey extension with new roof, improved insulation and associated landscape improvements and construction of detached single garage. The associated Planning Application No. is DC/2017/00821.

The cottage is in close proximity to a series of walls and terraces that might be associated with the blast furnace at Old Furnace (Scheduled Ancient Monument MM197). Furthermore, documentary and archaeological sources evidence the existence of other iron working sites in the area, some of which may be of Medieval origin. The first cartographic source that documents the cottage dates to mid-1880s. No buildings related to the furnace are documented on this map. The existing building is first documented in the first decades of the 20th century.

The results of the fieldwork indicate a low level of activity in the immediate vicinity of the excavated areas beyond modern services. A stone wall was discovered to the immediate SW of the main house. The function of the wall is uncertain and no finds were discovered for dating purposes. Evidence of glass processing was also discovered in the form of glass slag. However, the context in which it was recovered contained modern material.

All work was undertaken to the Standards and Guidance for an Archaeological Watching Brief as set by the Chartered Institute for Archaeologists (2014).

1. Introduction

Archaeology Wales Ltd (AW) was commissioned by Steven R Taylor to undertake an archaeological watching brief at Old Furnace Cottage, Forge Road, Tintern NP16 6TR (NGR SO5128900374) (Figure 1-2). This work relates to the demolition of an existing extension and replacement with a new single storey extension with new roof, improved insulation and associated landscape improvements and construction of detached single garage. The associated Planning Application No. is DC/2017/00821.

Glamorgan-Gwent Archaeological Trust – Archaeological Planning Service (GGAT-APS), acting as archaeological advisors to the local planning authority, stipulated that the archaeological watching brief be undertaken during all ground works associated with the development.

An approved Written Scheme of Investigation (WSI) was produced by AW in accordance with the *Standard and Guidance for Archaeological Watching Briefs* (CIfA 2014) and was designed to provide an approved methodology of archaeological work to be implemented during the construction works.

The watching brief took place from 11th September to 19th September 2018 under the supervision of Daniel Moore. The project was managed by Dr Irene Garcia Rovira MCIfA.

2. Site Description and Archaeological Background

2.1 Location, Geology and Topography

The development site is defined by the property boundary of Old Furnace Cottage and its associated land. The building is composed of a main structure and an attached extension to the east of the house. An area of lawn is located to the east and west of the cottage. Furthermore, the eastern area contains a garage and a shed. To the north, the development area is flanked by an access track and a forest. The Angiddy River defines the southern boundary of the site. A forest is also located immediately south of the river. The site is at approximately 86m AOD.

The underlying geology is characterised by the Brownstones Formation, composed of sedimentary rock (sandstone) formed during the Devonian period. The British Geological Survey does not record the superficial deposits of the area (BGS 2018).

2.2 Historical and Archaeological Background

Prehistoric and early historic activity

Prehistoric and early historic evidence within and around the development area is sparse. The closest remains to the site dating to Palaeolithic times are found c.25km N of the development, at Symonds Yat (Phillips 2008). Three Bronze Age round barrows are located some 1km to the north-east of the development area (MM191).

Medieval activity

The Medieval landscape in the region is focused on Tintern Abbey situated c.2.5km to the west of the development area, on the valley floor, adjacent to the River Wye. The Cistercian abbey was founded in 1132 and was dissolved in 1536. The abbey sits in a wider medieval landscape that includes the iron working sites found along the valley. A number of these sites appear to have been directly related to Tintern Abbey, and therefore, of possible Medieval origin.

While the evidence documents the significance of the area for iron works in post-medieval times, it is significant to note that Paar and Tucker (1975) state the possible existence of medieval activity in the form of water driven mills. While this claim is not supported by

documentary or archaeological evidence, the possibility of encountering remains of medieval times should not be altogether discarded.

Post-medieval activity

The Abbey Blast Furnace (SAM MM197) is located within 85m SE of the development site². This furnace operated from the 17th century to 1826, and probably was the first charcoal house to be equipped with blowing cylinder and not with bellows. A number of walls and terraces are documented in proximity to the development site, some of which might be related to the Scheduled Monument (Parry, RCAHMW 2011; Phillips 2008).

The cottage: post-medieval to modern activity

The first cartographic source that documents the cottage dates to mid-1880s. No buildings related to the furnace are documented on this map.

Historic mapping shows that the cottage dates from before the 1880's (see OS map 1,2500 1879-80). This map indicated that by the 1880's no buildings associated with the furnace still standing. However, the existing main building is only documented in cartographic sources dating to between the 1901 and 1921 (OS map 1,2500 1901-1921, third edition).

3. Objectives and Methodology

A watching brief complying with the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for Archaeological Watching Briefs* (2014) was undertaken during all intrusive ground work on the site. The objectives of the watching brief were:

- to allow a rapid investigation and recording of any archaeological features uncovered during the proposed groundworks within the application area.
- to provide the 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 was made for which the resources allocated to the watching brief were not sufficient to support the treatment to a satisfactory or proper standard.

This written report has been compiled following the fieldwork. Sufficient desk-top research has been undertaken to ensure that the results of this work are properly understood, interpreted and reported.

An archaeological watching brief was undertaken during intrusive ground works, including:

- All ground works associated with the building of the new single storey extension.
- All groundworks associated with the extension and garage, specifically foundation excavation.
- All groundworks for services associated with the extension and garage.
- All groundwork associated with landscaping.

Groundworks were undertaken by a mechanical excavator fitted with a flat bladed bucket.

The site archaeologist undertaking the watching brief was afforded the required access by the main contractor in order to observe and where necessary to record any archaeological remains revealed. The site archaeologist recorded finds and less significant archaeological deposits and features without significant delay to the work program. Sections and plans of the excavation were photographed using a 12MP digital camera. All the deposits encountered were recorded by means of a continuous context numbering system and recorded on pro-forma context sheets. All features and deposits were described in accordance with ClFA conventions. A register of all contexts and photographs was also made. The watching brief was carried out using a 3 tonne digger with a 0.50m wide toothed bucket and a 0.45m wide toothless bucket.

The work was broken up into two phases. The first phase involved the excavation of an area to the NW of the main house for the creation of a retaining wall. This area measured c. 10m on a NE-SW alignment and c.10m on a SE-NW alignment and had a depth of 2.20m (max). The second phase involved the excavation of a three-sided footing trench that extended to the SE of the main house. The trench comprised two NE-SW aligned trenches that measured 11.65m in length and a NW-SW aligned trench that measured 6.80m. The trench was 0.60m in width and had a depth of 1.50m (max).

4. Watching Brief Results

4.1 Retaining Wall Area

The earliest deposit revealed during groundworks was the natural substrate (002). This was characterized as a firm mid-brown orange clay. The deposit measured in excess of 18m in length, 10m in width and 1m in depth. Deposit (002) was interpreted as being the same as (022), located in the footing trench. Large unworked sub-angular sandstone boulders were located within the deposit and measured on average 1m in length, 0.90m in width and 0.50m in depth. This was overlaid by (001), a firm mid-grey brown silt. The deposit measured in excess of 18m in length, 10m in width and was 0.80m (max) in depth. (001) contained CBM, metal, bone and pottery sherds (see conclusion). The deposit sloped downwards towards the stream to the south and extended over most of the whole retaining wall area. Deposit (001) was cut by linear cut [019]. The cut was on a NE-SW alignment, running from the house to the SW. The cut measured in excess of 8m in length, and was 0.30m in width and 0.40m in depth. Cut [019] was steep sided, flat based and filled by metal waterpipe (018) and fill (020). Waterpipe (018) measured in excess of 8m in length, and was 0.04m in diameter. Fill (020) was characterized as a firm mid grey brown silt and measured in excess 8m in length, 0.30m in width and 0.40m in depth. This was overlaid by deposit (004), an aggregate comprising a loose mid-red orange coarse sand with a plastic ground sheet membrane at the base. (004) measured in excess of 18m in length, 10m in width and was 0.10m in depth. The deposit was

associated with the parking area. This was overlaid by deposit (005), a deposit of topsoil characterized as a firm mid-grey brown silt with overlying grass. (005) measured in excess of 18m in length, 10m in width and was 0.08m in depth.

(002) was also overlaid by deposit (003). This was characterized as a firm mid-black grey silt with a high frequency of fine coal particles and small sub-angular stones that measured 0.06m diameter on average. The deposit measured in excess of 2m in length, 2m in width and was 0.40m in depth. The deposit was located next to the house in the NE corner of the retaining wall area and was associated with stone steps leading to the house. (003) contained the base of a clear glass vessel and lumps of green glass that appear to be slag, the largest of which measured 0.15m by 0.07m by 0.15m. The latter could be associated with glass processing in the immediate area (see conclusion).

4.2 Footing Trench

The basal deposit was (022). This was characterized as a firm mid-brown orange clay. The deposit measured in excess of 8.19m in length, 6.80m in width and 0.50m in depth. Deposit (022) was interpreted as being the same as (002). Deposit (022) was cut by linear cut [007]. The cut was on a NW-SE alignment and located 0.35m to the SW of the house. The cut measured in excess of 1.20m in length, and was 0.90m in width and 0.35m in depth. Cut [007] was moderately steep sided, flat based and filled by stone structure (006) and fill (008). Stone structure (006) was interpreted as a wall and comprised two courses of roughly finished sub-rectangular and squared stones with lime mortar bonding. Individual stones measured on average 0.30m in length, 0.25m in width and 0.09m in depth. In total the structure measured in excess of 1.20m in length, and was 0.90m in width and 0.35m in depth. It was clear that the stones did not extend any further to the NW than the limit of excavation (the NW facing stones had a straight sided finish) while it is unclear if the stones extend to the SE. Fill (008) was characterized as a firm mid-brown grey silt and measured in excess of 1.20m in length, and was 0.90m in width and 0.35m in depth.

Stone structure [006] was truncated by linear cuts [010] and [016]. Cut [010] was on a NW-SW alignment and located to the immediate SW of the house. The cut measured in excess of 0.80m in length, and was 0.50m in width and 0.25m in depth. The cut was steep sided and flat based and filled by ceramic sewage pipe (009) and fill (011). Sewage pipe (009) measured in excess of 0.80m in length and had a diameter of 0.13m. Fill (011) was composed of concrete and stone chippings that measured in excess of 0.80m in length and was 0.50m in width and 0.25 in depth. Cut [016] was on a roughly NE-SW alignment located in the NW facing section of the most southerly trench, running from the house to the SW. The cut measured in excess of 1.30m in length and was 0.30m in width and 0.30m in depth. Cut [016] was steep sided, flat based and filled by black electricity pipe (015) and fill (017). Electricity pipe (015) measured in excess of 1.30m in length and had a diameter of 0.04m. Fill (017) was composed of a mid-brown black silt that measured in excess of 1.30m in length and was 0.30m in width and 0.30m in depth.

Deposit (022) was also overlaid by (028) and (026). Deposit (028) was characterized as a firm mid-brown black silt. The deposit measured in excess of 2m in length, 0.60m in width and was 0.11m in depth. Deposit (028) was cut by linear cut [013]. The cut was on a NE-SW alignment and located in the most southerly trench. The cut measured in excess of 2m in length and was 0.09m in width and 0.11m in depth. Cut [013] was steep sided, flat based and filled by metal pipe (012) and fill (014). Metal pipe (012) measured in excess of 2m in length and had a diameter 0.09m. Fill (014) was composed of a mid-black brown silt that measured in excess of 2m in length and was 0.09m in width and 0.11m in depth.

Deposit (026) was characterized as a firm light brown grey clay. The deposit measured in excess of 3m in length, 3m in width and 0.10m. The deposit was identified only in the NW-SE aligned trench (parallel to the stream) and extended beyond the limit of excavation to the NW. It contained a broken base of a brown glass bottle. This was overlaid by deposit (025). Deposit (025) was characterized as a firm mid-brown grey clay and measured in excess of 3m in length, 3m in width and 0.40m in depth. The deposit was identified at the corner of the NW-SE aligned and trench (parallel to the stream) and extended beyond the limit of excavation to the NW. This was overlaid by deposit (024). This deposit was characterized as a hard-light brown orange sand. The deposit measured in excess of 3m in length, 2m in width and was 0.05m in depth. (024) extended beyond the limit of excavation to the NW and gradually terminated to the SE. (024) was overlaid by (023). This comprised a hard-light white yellow sand that measured in excess of 3m in length, 0.60m in width and was 0.05m in depth. The deposit extended beyond the limit of excavation to the NW and gradually terminated to the SE.

(025) was also overlaid by deposit (027). This comprised a loose grey yellow silt sand that measured in excess of 3m in length, 0.60m in width and was 0.30m in depth (max). The deposit was located in the NE trench only and extended beyond the limit of excavation to the NW and gradually disappeared to the NE. (027) contained a plastic drainpipe offcut.

(011), (017), (014), (023) and (027) were overlaid by (021). This was characterized as a firm mid brown black silt. The top of the deposit included grass, stone chippings and rubble from the demolished building. The deposit measured in excess of 8.19m in length, 6.80m in width and was 0.50m in depth (max). (021) contained a small sheep pelvis with small cut marks, and modern pottery sherds (see conclusion).

5. Discussions and Conclusions

5.1 Finds

No finds of archaeological significance were discovered other than several large lumps of green glass in context (003) (see below). All other finds were of modern date. Context (001) contained the ribs and unfused vertebrae of a young sheep. (001) also contained six small sherds of modern pottery and several pieces of metal, one of which belonged to a rake.

Context (003) contained several large lumps of green glass, the largest of which measured 0.15m by 0.07m by 0.15m. They appear to be slag and indicate potential glass making activity within the near vicinity. (003) also contained a heavy base to a modern clear glass vessel with a 0.06m diameter.

Context (021) contained a small sheep pelvis with small cut marks and five small modern pottery sherds. Context (025) contained several pottery sherds from three possible forms. Two course fabric sherds with a brown glaze on both sides may belong to the single rim of a large open form with a late post medieval/early modern date. Four thin ridged course fabric sherds with a minimal curve and a brown glaze on both sides may be late post medieval/early modern in date. It is uncertain if it had an open or closed form. A single course fabric sherd with a similar brown glaze on one side was undiagnostic. It measured 0.11m in length, 0.07m in width and 0.02m in thickness and had a very minimal curve. Context (026) contained the base of a late 19th /early 20th century green bottle with a 0.08m diameter.

Two unstratified cow rib fragments were recovered from the retaining wall area. Two near identical unstratified brown bottles with a 0.05m diameter and with a potential 1920's date were also recovered from this area.

5.2 Features

No features of archaeological significance were discovered other than stone structure (006). This was discovered to the immediate SW of the main house in the most southerly footing trench and interpreted as a stone wall. The function of the wall is uncertain and no finds were discovered for dating purposes. The wall comprised two courses of roughly finished sub-rectangular and squared stones with lime mortar bonding. It was clear that the stones did not extend any further to the NW than the limit of excavation (the NW facing stones had a straight sided finish) while it is unclear if the stones extend to the SE. All other features were interpreted as modern services, including water pipes.

6. Bibliography

Chartered Institute for Archaeologists, 2014. *Standards and Guidance for the collection, compilation, transfer and deposition of archaeological archives.*

Chartered Institute for Archaeologists, 2014. *Standards and Guidance for the collection, documentation, conservation and research of archaeological materials.*

CIfA. (2015) *Standard and Guidance for Archaeological Watching Briefs* (Unpublished Guidance accessible at www.archaeologists.net)

NERC. (2016) British Geological Survey Maps (accessed at www.bgs.ac.uk)

Appendix 1. Context Register

<i>No.</i>	<i>Type</i>	<i>Description</i>	<i>Relationship</i>
001	Deposit	Mid grey brown silt	Above (004)
002	Deposit	Mid brown orange clay sand.	Below(001) (003)
003	Deposit	Mid black grey silt with coal	Below (005)
004	Deposit	Mid red orange coarse sand (aggregate)	Below (005)
005	Deposit	Mid grey brown silt (topsoil)	Above (004)
006	STR	Stone wall within [007]	Below (008)
007	Cut	Linear cut for stone wall	Cuts (022)
008	Fill	Fill of cut [007]. Mid brown grey silt	Above (006)
009	STR	Ceramic sewage pipe	Below (011)
010	Cut	Linear cut for ceramic sewage pipe	Cuts (008)
011	Fill	Fill of cut [010]. Chippings and concrete	Above (009)
012	STR	Metal pipe within cut [013]	Below (014)
013	Cut	Linear cut of metal pipe	Cuts (028)
014	Fill	Fill of cut [013]. Mid brown black silt	Above (012)
015	STR	Electricity pipe within cut [016]	Below (017)
016	Cut	Linear cut for electricity pipe	Cuts (008)
017	Fill	Fill of cut [016]. Mid brown black silt	Above (015)
018	STR	Plastic water pipe within cut [019]	Below (020)
019	Cut	Linear cut for plastic water pipe	Cuts (001)
020	Fill	Fill of cut [019]. Mid grey brown silt	Above (018)
021	Deposit	Mid brown black silt	Above(011) (017)(014) (023)(027)
022	Deposit	Mid brown orange clay and sand	Below(028) (026), (006)
023	Deposit	Light white yellow fine sand	Below (021)
024	Deposit	Light brown orange fine sand	Below (023)
025	Deposit	Mid brown grey clay	Above (026)
026	Deposit	Light brown grey clay	Below (025)
027	Deposit	Mid grey yellow silt sand	Below (021)
028	Deposit	Mid brown black silt	Above (022)

Appendix 2. Finds Assemblage

Location	Context No.	Finds Type	No of fragments	Description	Date
Retaining Wall Area	(001)	Ceramic	6	Glazed sherds	Modern
Retaining Wall Area	(001)	Metal	3	Fragments from 2 metal bars, and rake	Modern
Retaining Wall area	(001)	Bone	27	Sheep. Fragments of ribs and unfused vertebrae	Modern
Retaining Wall Area	(003)	Slag	5	Lumps of green glass	Uncertain
Retaining Wall Area	(003)	Glass	1	Heavy base of clear glass vessel	Modern
Retaining Wall Area	Unstratified	Glass	2	Complete near identical brown bottles	Modern
Retaining Wall Area	Unstratified	Bone	2	Cow. Fragments of ribs.	Modern
Footing Trench	(021)	Ceramic	5	Glazed sherds	Modern
Footing Trench	(021)	Bone	1	Sheep. Fragment of pelvis with cut marks	Modern
Footing Trench	(025)	Ceramic	16	Glazed sherds. From 3 possible forms	Late Post Medieval/Early Modern

Footing Trench	(026)	Glass	1	Base of green glass bottle	Late 19 th Century/ Early 20 th Century
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Figure 1.
Location of site
within wider
landscape.

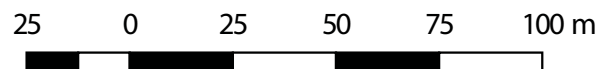
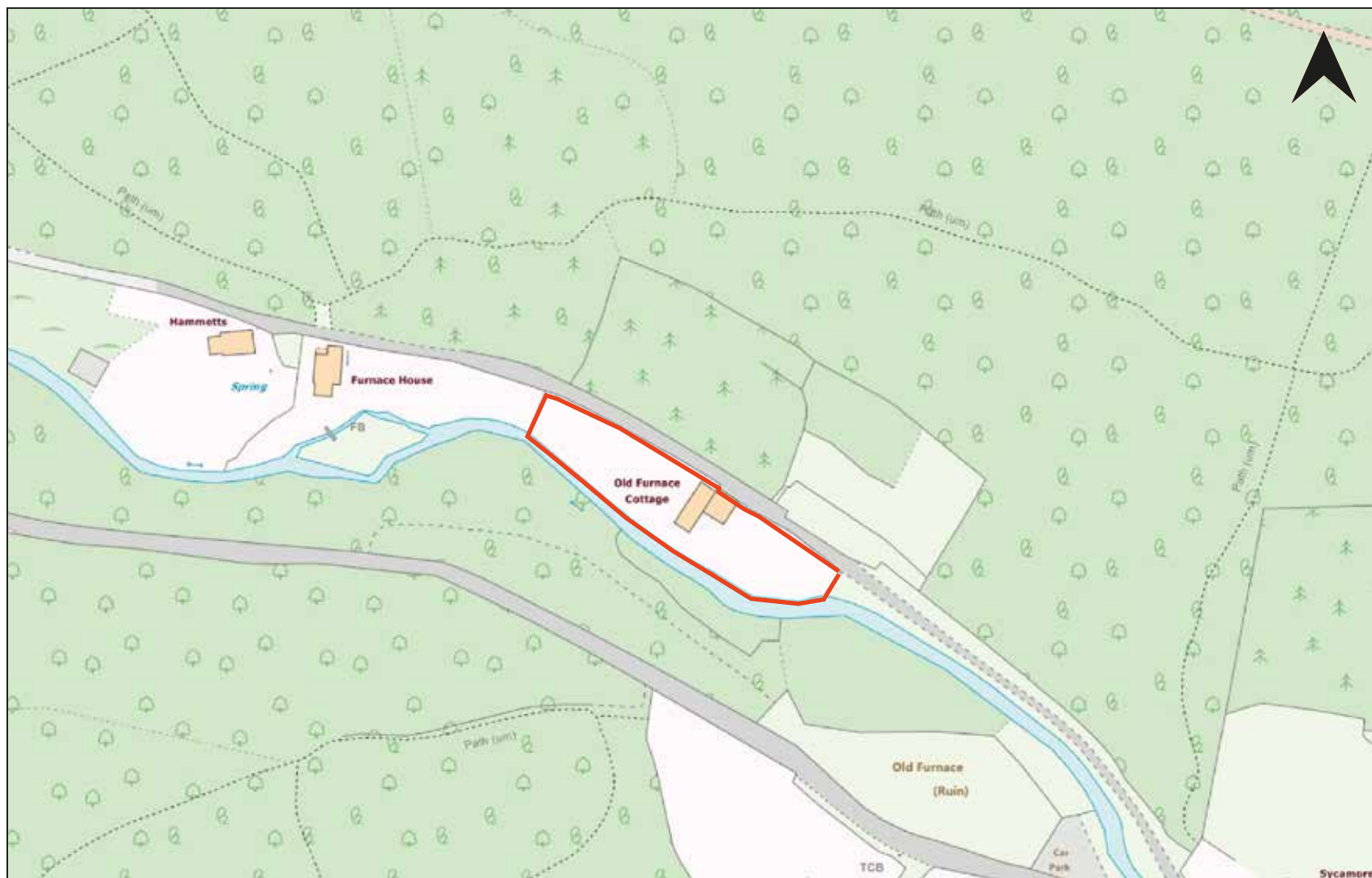


Figure 2.
Location of site
marked in red.

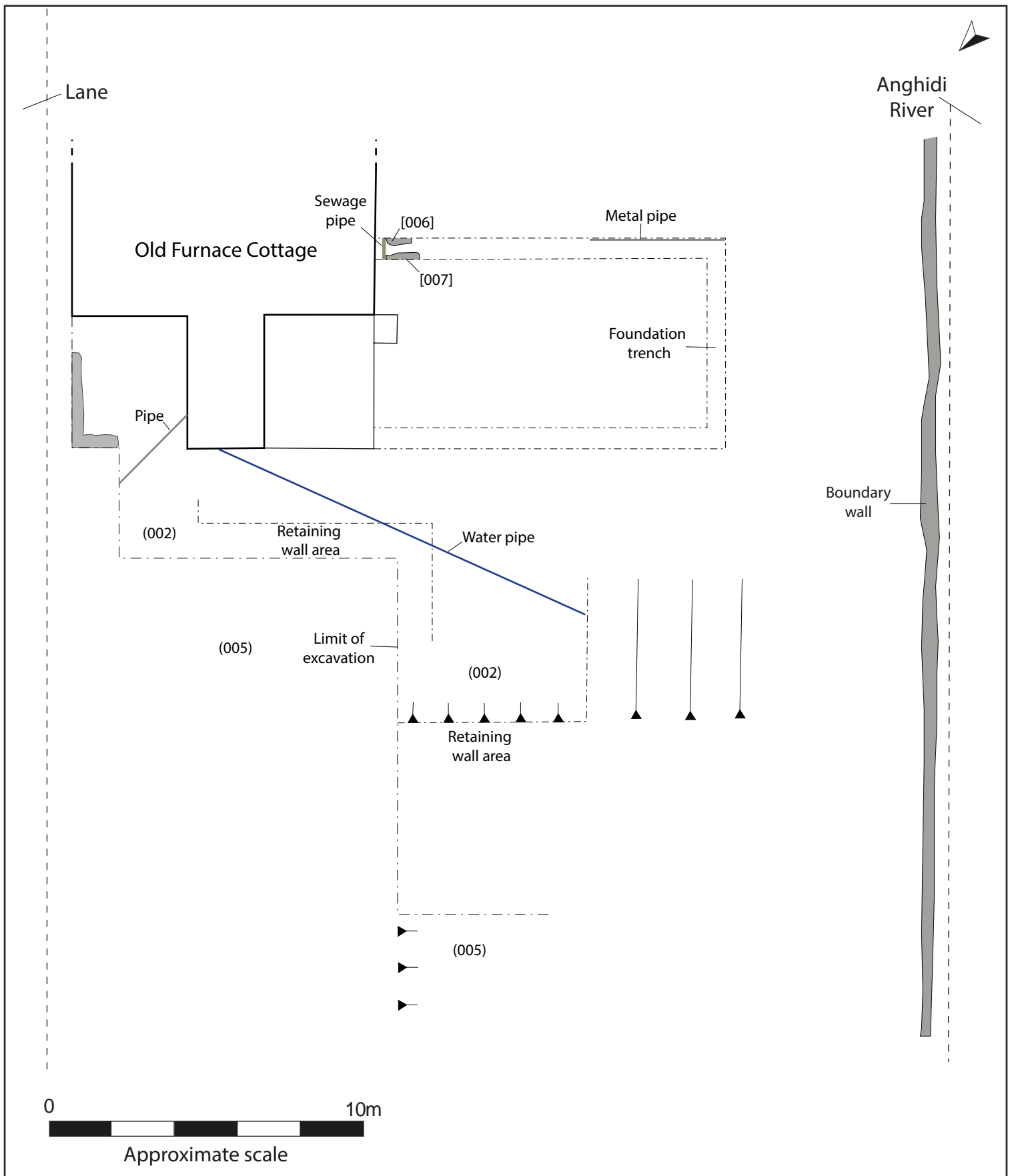


Figure 3
Sketch drawing



Plate 1. Overview of Retaining Wall Area.



Plate 2. SE facing section of Stone Wall (006), [007], (008). Scale 1m



Plate 3. SW facing section of Retaining Wall Area (001), (002). Scale 1m



Plate 4. NE facing section of Footing Trench (021), (023), (025), (026). Scale 1m

WRITTEN SCHEME OF INVESTIGATION

FOR AN ARCHAEOLOGICAL

WATCHING BRIEF

AT OLD FURNACE COTTAGE, FORGE ROAD, TINTERN
(MONMOUTHSHIRE)

Prepared for:

Mr Stephen R Taylor

Planning Application Number: DC/2017/00821

Project No: 2557

September 2017



Contents	Page
Summary	3
1. Introduction and planning background.....	3
2. Site Description.....	4
3. Archaeological background	5
4. Objectives	6
4.1. Site Specific Research Aims	6
5. Timetable of works	7
5.1. Fieldwork	7
5.2. Report delivery	7
6. Fieldwork.....	7
6.1. Detail.....	7
6.2. Recording	8
6.3. Finds.....	8
6.4. Environmental sampling strategy.....	9
6.5. Human remains	9
6.6. Specialist advisers	9
7. Monitoring.....	10
8. Post-fieldwork programme.....	10
8.1. Archive assessment.....	10
8.2. Reports and archive deposition.....	11
9. Staff.....	12
Additional Considerations.....	12
10. Health and Safety	12
10.1. Risk assessment.....	12
10.2. Other guidelines.....	13
11. Community Engagement and Outreach	13
12. Insurance.....	13
13. Quality Control.....	13
13.1. Professional standards	13
13.2. Project tracking	13
14. Arbitration	14
15. References.....	14

Figure 1. Site location

Figure 2. Detailed plan of the site

Figure 3. Existing surfaces plan

Figure 4. Proposed surfaces plan

Figure 5. Proposed floor plan

Appendix 1:

Architect drawings

Summary

This Written Scheme of Investigation (WSI) details the methodology for a watching brief to be undertaken by Archaeology Wales at the request of Mr Stephen R Taylor.

The watching brief will be undertaken during ground works associated with the proposed development at Old Furnace Cottage, Forge Road, Tintern NP16 6TR (NGR SO5128900374). This includes the demolition of an existing extension and replacement with a new single storey extension with new roof, improved insulation and associated landscape improvements and construction of detached single garage. The associated Planning Application No. is DC/2017/00821.

The cottage is in close proximity to a series of walls and terraces probably associated with the blast furnace at Old Furnace (Scheduled Ancient Monument MM197). Furthermore, documentary and archaeological sources evidence the existence of other iron working sites in the area, some of which may be of Medieval origin. The first cartographic source that documents the cottage dates to mid-1880s. No buildings related to the furnace are documented on this map. The existing building is first documented in the first decades of the 20th century.

Glamorgan Gwent Archaeological Trust – Planning Division (GGAT-PD) has recommended that an archaeological watching brief is carried out during the demolition and ground breaking phases of the proposed works in order to mitigate the impact of the proposed development on the archaeological resource.

All work will be undertaken in accordance with the standards and guidelines of the Chartered Institute for Archaeologists (2014).

1. Introduction and planning background

This WSI details the methodology for watching brief to be undertaken in association with the proposed development which includes the demolition of an existing extension and replacement with a new single storey extension with new roof, improved insulation and associated landscape improvements and construction of detached single garage at Old Furnace Cottage, Forge Road, Tintern NP16 6TR (NGR SO5128900374) (Figure 1-4). The associated Planning Application No. is DC/2017/00821.

A desk based assessment carried out in the area (Phillips 2008) indicated that the cottage is in close proximity to a series of walls and terraces probably associated with the blast furnace at Old Furnace (SAM MM197). Furthermore, documentary and archaeological sources evidence the existence of other iron working sites in the area, some of which may be of Medieval origin. The first cartographic source that documents the cottage dates to mid-1880s. No buildings related to the furnace are documented on this map. GGAT-PD has recommended that an archaeological watching brief is carried out during the demolition and ground breaking phases of

the proposed works in order to mitigate the possibility of revealing the remains of medieval structures during groundworks associated to the extension and the garage. This recommendation is laid out in condition 3 of the planning decision and states:

'No development shall take place until the applicant, or their agents or successors in title, has secured agreement for a written scheme of historic environment mitigation which has been submitted by the applicant and approved by the local planning authority. Thereafter, the programme of work will be fully carried out in accordance with the requirements and standards of the written scheme.'

The reason stated is:

'To identify and record any features of archaeological interest discovered during the works, in order to mitigate the impact of the works on the **archaeological resource**.'

This WSI has been prepared by Dr Irene Garcia Rovira, Project Manager, Archaeology Wales Ltd (henceforth - AW) at the request of Mr Stephen R Tylor.

The methodology set out in this WSI has been agreed with GGAT-PD in its capacity as archaeological advisors to Monmouthshire County Council.

The recommendations made by GGAT-PD are set out in a letter to Monmouthshire County Council dated to the 7th of August 2017.

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists (2014). AW is a Registered Organisation with the CIfA.

2. Site Description

The proposed development site is defined by the property boundary of Old Furnace Cottage and its associated land. The building is composed of a main structure and an attached extension to the east of the house. An area of lawn is located to the east and west of the cottage. Furthermore, the eastern area contains a garage and a shed. To the north, the development area is flanked by an access track and a forest. The Angiddy River defines the southern boundary of the site. A forest is also located immediately south of the river. The site is at approximately 86m AOD.

The underlying geology is characterised by the Brownstones Formation, composed of sedimentary rock (sandstone) formed during the Devonian period. The British Geological Survey does not record the superficial deposits of the area (BGS 2017).

3. Archaeological background

Prehistoric and early historic activity

Prehistoric and early historic evidence within and around the development area is sparse. The closest remains to the site dating to Palaeolithic times are found c.25km N of the development, at Symonds Yat (Phillips 2008). Three Bronze Age round barrows are located some 1km to the north-east of the development area (MM191).

Medieval activity

The Medieval landscape in the region is focussed on Tintern Abbey situated c.2.5km to the west of the development area, on the valley floor, adjacent to the River Wye. The Cistercian abbey was founded in 1132 and was dissolved in 1536. The abbey sits in a wider medieval landscape that includes the iron working sites found along the valley. A number of these sites appear to have been directly related to Tintern Abbey, and therefore, of possible Medieval origin¹.

While the evidence documents the significance of the area for iron works in post-medieval times, it is significant to note that Paar and Tucker (1975) state the possible existence of medieval activity in the form of water driven mills. While this claim is not supported by documentary or archaeological evidence, the possibility of encountering remains of medieval times should not be altogether discarded.

Post-medieval activity

The Abbey Blast Furnace (SAM MM197) is located within 85m SE of the development site². This furnace operated from the 17th century to 1826, and probably was the first charcoal house to be equipped with blowing cylinder and not with bellows. A number of walls and terraces are documented in proximity to the development site, some of which might be related to the Scheduled Monument (Parry, RCAHMW 2011; Phillips 2008).

The cottage: post-medieval to modern activity

The first cartographic source that documents the cottage dates to mid-1880s. No buildings related to the furnace are documented on this map. GGAT has recommended that an archaeological watching brief is carried out during the demolition and ground breaking phases of the proposed works in order to mitigate

¹ See GGAT archaeological planning letter to Monmouthshire County Council dating to the 7th of August 2017.

² Cadw is currently extending the scheduled area to include a section of the leat which provided water to the furnace. This leat is only 18m away from the development site.

the possibility of revealing the remains of medieval structures during groundworks associated to the extension and the garage.

Historic mapping shows that the cottage dates from before the 1880's (see OS map 1,2500 1879-80). This map indicated that by the 1880's no buildings associated with the furnace still standing. However, the existing main building is only documented in cartographic sources dating to between the 1901 and 1921 (OS map 1,2500 1901-1921, third edition).

4. Objectives

This WSI sets out a program of works to ensure that the watching brief will meet the standard required by The Chartered **Institute for Archaeologist's** *Standard and Guidance for Archaeological Watching Briefs (2014)*.

The objective of the watching brief will be:

- to allow a rapid investigation and recording of any archaeological features that are uncovered during the proposed groundworks within the application area.
- to provide the 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 are not sufficient to support the treatment to a satisfactory or proper standard.

A written report will be compiled following the fieldwork. Sufficient desk-top research will be undertaken to ensure that the results of this work are properly understood, interpreted and reported.

The report will include a comprehensive assessment of the historic context within which the archaeological evidence rests and will aim to highlight any relevant research issues within regional, national and, if relevant, international research frameworks.

4.1. Site Specific Research Aims

It is important to recognize that whilst primarily designed to mitigate impacts, developer-led archaeology is also regarded as research activity with an academic basis, the aim of which is to add to the sum of human knowledge. Curators recognize the desirability of incorporating agreed research priorities as a means of enhancing the credibility of the development control process, ensuring cost-effectiveness and legitimately maximizing intellectual return.

A research framework for the archaeology of Wales has been produced (2011-2014) and currently in the process of review. This document highlights that industrial archaeology sites are often affected by development proposals, and that in these schemes adequate resources for investigation are often lacking.

This watching brief has the capacity to identify areas where subsequent mitigation may contribute to the create better understandings of industrial archaeology within the region.

The results obtained during the watching brief can also be significant for a better understanding of the extent, nature, economy and character of settlement and landscape use of the area.

5. Timetable of works

5.1. Fieldwork

The watching brief will be undertaken prior to the ground works associated with the proposed development. GGAT-PD will be advised of the start date in advance of the works commencing on site.

5.2. Report delivery

The report will be submitted to Mr Stephen R Taylor and to GGAT-PD within three months of the completion of the fieldwork. A copy of the report will also be sent to the regional HER.

6. Fieldwork

6.1. Detail

The work will be undertaken to meet the standard required by The Chartered Institute for Archaeologist's *Standard and Guidance for Watching Briefs* (2014).

An archaeological watching brief will be undertaken during all intrusive ground works. This will include, but not be limited to:

- The demolition of the existing extension and all ground works associated with the building of the new single storey extension. This will include a photographic account of the exterior of the building prior to demolition, during demolition and after demolition. It will detail any structural and architectural detail or feature revealed during demolition.
- All groundworks associated with the extension and garage, specifically foundation excavation.
- All groundworks for services associated with the extension and garage.
- All groundwork associated with landscaping.
- Any other ground work.

If the ground work is undertaken by a mechanical excavator then this should be fitted with a flat bladed bucket.

The site archaeologist undertaking the watching brief will be afforded the required access by the main contractor in order to observe and where necessary to record any archaeological remains revealed. Groundwork will not be undertaken without the presence of the site archaeologist. The site archaeologist will record finds and less significant archaeological deposits and features without significant delay to the work program.

Where significant or complex archaeological deposits or features are encountered there will be a requirement for those areas to be fenced off and highlighted to all contractors employed on the site. Machines or contractors shall not enter this area until archaeological recording has been completed. If significant archaeological features are revealed during the work a meeting between Mr Stephen R Taylor and GGAT-PD and AW will be called at the earliest convenience.

To comply with professional guidelines, a contingency for additional access to each area of archaeological significance and for a team additional archaeologists to be employed should be provided. Contingency costs will be agreed in advance before any extension to the programme commences and will follow a site meeting between Archaeology Wales, Mr Stephen R Taylor and GGAT-PD.

6.2. Recording

Recording will be carried out using AW recording systems (pro-forma context sheets etc) using a continuous number sequence for all contexts.

Plans and sections will be drawn to a scale of 1:50, 1:20 and 1:10 as required and related to Ordnance Survey datum and published boundaries where appropriate.

All features identified will be tied in to the OS survey grid and fixed to local topographical boundaries.

Photographs will be taken in digital format with an appropriate scale, using a 12MP camera with photographs stored in Tiff format.

The archaeologist undertaking the watching brief will have access to the AW metal detector and be trained in its use.

6.3. Finds

The professional standards set in the Chartered Institute for **Archaeologists' Standard and guidance for the collection, documentation, conservation and research of archaeological (2014)** will form the basis of finds collection, processing and recording.

All manner of finds regardless of category and date will be retained.

Finds recovered that are regarded as Treasure under *The Treasure Act 1996* will be reported to HM Coroner for the local area.

Any finds which are considered to be in need of immediate conservation will be referred to a UKIC qualified conservator (normally Phil Parkes at Cardiff University).

6.4. Environmental sampling strategy

Deposits with a significant potential for the preservation of palaeoenvironmental material will be sampled, by means of the most appropriate method (bulk, column etc). Where sampling will provide a significant contribution to the understanding of the site AW will draw up a site-specific sampling strategy alongside a specialist environmental archaeologist. All environmental sampling and recording and will **follow English Heritage's *Guidelines for Environmental Archaeology* (2002)**.

6.5. Human remains

In the event that human remains are encountered, their nature and extent will be established and the coroner informed. All human remains will be left *in situ* and protected during backfilling. Where preservation *in situ* is not possible the human remains will be fully recorded and removed under conditions that comply with all current legislation and include acquisition of licenses and provision for reburial following all analytical work. Human remains will be excavated in accordance with the Chartered **Institute for Archaeologist's *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains: Technical Paper Number 13* (1993)**.

A meeting with GGAT - PD, Mr Stephen R Taylor and AW will be called if the human remains uncovered are of such complexity or significance that the contingency arrangement (6.1 above) would not be of sufficient scope.

6.6. Specialist advisers

In the event of certain finds, features or sites being discovered, AW will seek specialist opinion and advice. A list of specialists is given in the table below although this list is not exhaustive.

Artefact type	Specialist
Flint	Kate Pitt (Archaeology Wales)
Animal bone	Richard Madgwick (Cardiff University)
CBM, heat affected clay, Daub etc.	Rachael Hall (APS)
Clay pipe	Hilary Major (Freelance)
Glass	Rowena Hart (Archaeology Wales)
Cremated and non-cremated human bone	Malin Holst (University of York)/Richard Madgwick (Cardiff University)

Metalwork	Kevin Leahy (University of Leicester)/ Quita Mold (Freelance)
Metal work and metallurgical residues	Dr Tim Young (GeoArch)
Neo/BA pottery	Dr Alex Gibson (Bradford University)
IA/Roman pottery	Jane Timby (Freelance)
Roman Pottery	Rowena Hart (Archaeology Wales)/ Peter Webster (Freelance)
Post Roman pottery	Stephen Clarke (Monmouthshire Archaeology)
Charcoal (wood ID)	John Carrot (Freelance)
Waterlogged wood	Nigel Nayling (University of Wales – Lampeter)
Molluscs and pollen	Dr James Rackham
Charred and waterlogged plant remains	Wendy Carruthers (Freelance)

6.6.1. Specialist reports

Specialist finds and palaeoenvironmental reports will be written by AW specialists, or sub-contracted to external specialists when required.

7. Monitoring

GGAT-PD will be contacted approximately five days prior to the commencement of archaeological site works, and subsequently once the work is underway.

Any changes to the WSI that AW may wish to make after approval will be communicated to GGAT-PD for approval on behalf of Planning Authority.

8. Post-fieldwork programme

8.1. Archive assessment

8.1.1. Site archive

An ordered and integrated site archive will be prepared in accordance with: Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2006) upon completion of the project.

The site archive (including artefacts and samples) will be prepared in accordance with the National Monuments Record (Wales) agreed structure and

deposited with an appropriate receiving organisation, in compliance with ClfA Guidelines (*Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, 2014). The legal landowners consent will be gained for deposition of finds.

8.1.2. Analysis

Following a rapid review of the potential of the site archive, a programme of analysis and reporting will be undertaken. This will result in the following inclusions in the final report:

- Non-technical summary
- Location plan showing the area/s covered by the watching brief, all artefacts, structures and features found
- Plan and section drawings (if features are encountered) with ground level, ordnance datum and vertical and horizontal scales.
- Written description and interpretation of all deposits identified, including their character, function, potential dating and relationship to adjacent features. Specialist descriptions and illustrations of all artefacts and soil samples will be included as appropriate.
- An indication of the potential of archaeological deposits which have not been disturbed by the development
- A discussion of the local, regional and national context of the remains by means of reviewing published reports, unpublished reports, historical maps, documents from local archives and the regional HER as appropriate.
- A detailed archive list at the rear listing all contexts recorded, all samples finds and find types, drawings and photographs taken. This will include a statement of the intent to deposit, and location of deposition, of the archive.

8.2. Reports and archive deposition

8.2.1. Report to client

Copies of all reports associated with watching brief, together with inclusion of supporting evidence in appendices as appropriate, including photographs and illustrations, will be submitted to Mr Stephen R Taylor and GGAT-PD upon completion.

8.2.2. Additional reports

After an appropriate period has elapsed, copies of all reports will be deposited with the relevant county Historical Environment Record, the National Monuments Record and, if appropriate, Cadw.

8.2.3. Summary reports for publication

Short archaeological reports will be submitted for publication in relevant journals; as a minimum, a report will be submitted to the annual publication of the regional CBA group or equivalent journal.

8.2.4. Notification of important remains

Where it is considered that remains have been revealed that may satisfy the criteria for statutory protection, AW will submit preliminary notification of the remains to Cadw.

8.2.5. Archive deposition

The final archive (site and research) will, whenever appropriate, be deposited with a suitable receiving institution, usually the relevant Local Authority museums service. Arrangements will be made with the receiving institution before work starts.

Although there may be a period during which client confidentiality will need to be maintained, copies of all reports and the final archive will be deposited no later than six months after completion of the work.

Copies of all reports, the digital archive and an archive index will be deposited with the *National Monuments Record*, RCAHMW, Aberystwyth.

Wherever the archive is deposited, this information will be relayed to the HER. A summary of the contents of the archive will be supplied to GGAT-PD.

8.2.6. Finds deposition

The finds, including artefacts and ecofacts, excepting those which may be subject to the Treasure Act, will be deposited with the same institution, subject to the agreement of the legal land owners.

9. Staff

The project will be managed by Irene Garcia Rovira (AW Project Manager) and the fieldwork undertaken by Dan Moore (Archaeology Wales). Any alteration to staffing before or during the work will be brought to the attention of GGAT-PD and Mr Stephen R Taylor.

Additional Considerations

10. Health and Safety

10.1. Risk assessment

Prior to the commencement of work AW will carry out a site visit and produce a formal Health and Safety Risk Assessment in accordance with *The Management of Health and Safety Regulations 1992*. A copy of the risk assessment will be kept on site and be available for inspection on request. A copy will be sent to the client (or their agent as necessary) for their information. All members of AW staff on site will sign and will adhere to the content of this document.

10.2. Other guidelines

AW will adhere to best practice with regard to Health and Safety in Archaeology as set out in the FAME (Federation of Archaeological Managers and Employers) health and safety manual *Health and Safety in Field Archaeology (2002)*.

11. Community Engagement and Outreach

Wherever possible, AW will ensure suitable measures are in place to inform the local community and any interested parties of the results of the site investigation work. This may occur during the site investigation work or following completion of the work. The form of any potential outreach activities may include lectures and talks to local groups, interested parties and persons, information boards, flyers and other forms of communication (social media and websites), and press releases to local and national media.

The form of any outreach will respect client confidentiality or contractual agreements. Any form of outreach will be agreed in advance with the client. As a rule, outreach will be proportional to the size of the project.

Where outreach activities have a cost implication these will need to be negotiated in advance and in accordance with the nature of the desired response and learning outcomes.

12. Insurance

AW is fully insured for this type of work, and holds Insurance with Aviva Insurance Ltd and Hiscox Insurance Company Limited through Towergate Insurance. Full details of these and other relevant policies can be supplied on request.

13. Quality Control

13.1. Professional standards

AW works to the standards and guidance provided by the *Chartered Institute for Archaeologists*. AW fully recognise and endorse the Chartered Institute for **Archaeologists' Code of Conduct**, *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* and the *Standard and Guidance for archaeological watching briefs* currently in force. All employees of AW, whether corporate members of the Chartered Institute for Archaeologists or not, are expected to adhere to these Codes and Standards during their employment.

13.2. Project tracking

The designated AW manager will monitor all projects in order to ensure that agreed targets are met without reduction in quality of service.

14. Arbitration

Disputes or differences arising in relation to this work shall be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Institute for Archaeologists* applying at the date of the agreement.

15. References

Chartered Institute for Archaeologists, 2014. Standards and guidance for the collection, compilation, transfer and deposition of archaeological archives.

Chartered Institute for Archaeologists, 2014. Standards and guidance for the collection, documentation, conservation and research of archaeological materials.

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McKinley, J., Roberts C., 1993, Excavation and post-excavation treatment of cremated and inhumed human remains, Technical Paper 13.

Paar HW, Tucker DG. 1975. The old wireworks and ironworks of the Angidy Valley at Tintern, Monmouthshire.

Phillips, N. 2008. Proposed Hydro-electric project. Angudy River, Tintern DBA. APAC. DBA/TAB/08.

British Geological Survey: Geology of Britain viewer:

www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

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