CPAT Report No 1014

Llandinam Pipeline

ARCHAEOLOGICAL WATCHING BRIEF





THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

CPAT Report No 1014

Llandinam Pipeline Archaeological watching brief

N W Jones November 2009

Report for Severn Trent Water

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CPAT Report Record

Report and status

CPAT Report Title	Llandinam Pipeline: Archaeological Watching Brief		
CPAT Project Name	Llandinam Pipeline		
CPAT Project No	1580	CPAT Report No	1014
Confidential (yes/no)	No	draft/final	Final

Internal control

	name	Signature	date
prepared by	N.W. Jones	NOLes	23/11/2009
checked by	R.J. Silvester	2.5.8 -	23/11/2009
approved by	R.J. Silvester	R.A.S. J	23/11/2009

Revisions

no	date	made by	checked by	approved by

Internal memo

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Summary

The watching brief monitored all relevant groundworks along the 22km-long pipeline between Llandinam and Abermule, revealing a number of previously unrecorded archaeological features of Roman and later post-medieval date.

A section of the Roman road between the forts at Caersws and Forden Gaer was identified near Penstrowed, where excavation revealed at least two phases of construction. Further evidence for the possible alignment of the road was revealed to the north-east of Newtown where a stone layer was identified beneath the make-up for the modern A483.

A series of linear ditches and gullies were identified during an excavation adjacent to a possible enclosure which had been revealed by geophysical survey near Caersws. A re-examination of the geophysical survey in the light of the excavation results has suggested two phases of activity with ditches on slightly different alignments. The nature of this activity is uncertain and although a Roman, possibly military, association is possible this is purely speculative.

The remains of two previously unrecorded post-medieval buildings were uncovered during topsoil stripping, one close to the River Severn between Caersws and Llandinam, and the other near Penstrowed. A relatively unusual discovery was made to the south-east of Newtown, where a small brick kiln was revealed. This was of a type known as a 'clamp' kiln, and may have been used to produce bricks for the construction of the now demolished farmhouse at Great Brimmon.

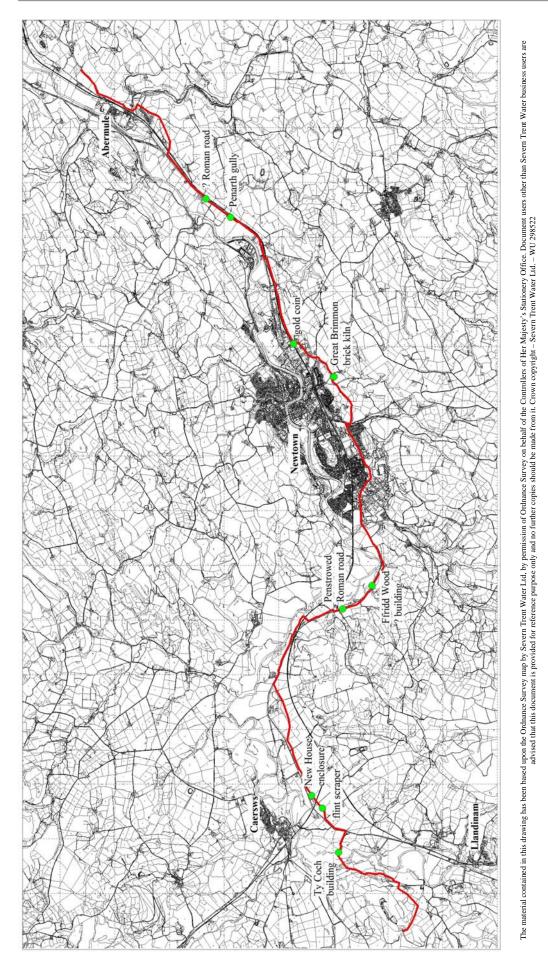
A variety of mostly post-medieval pottery, glass and other finds was recovered from the topsoil, although the distribution did not appear to be of any significance. Two artefacts were of more interest, however: a flint thumbnail scraper of probable Bronze Age date, found near Moat Lane, Caersws; and a gold coin which was provisionally identified as a noble of Henry IV (1399-1413), which was found on the outskirts of Newtown.

1 INTRODUCTION

- 1.1 In December 2008 the Field Services Section of the Clwyd-Powys Archaeological Trust (henceforth CPAT) was invited by Dr Glyn Davies of ARCUS to produce a Written Scheme of Investigation (WSI) together with an indicative costing for a programme of archaeological mitigation works in connection with proposals by Severn Trent Water to install a new 22kmlong pipeline from Llandinam reservoir in the west (SO 0132 8980) to a point north-east of Abermule in the east (SO 1680 9567).
- 1.2 An archaeological desk-based assessment and field survey of the route had previously been undertaken by Birmingham Archaeology (Halstead 2007) which identified a number of areas of archaeological potential along the route. A programme of geophysical survey was later undertaken by Archaeological Services, of Durham University, along those sections of the proposed route which were then available, though some areas could not be surveyed as a result of cultivation (Hale 2008)
- 1.3 The results from the two stages of assessment were taken into consideration when determining the final route for the pipeline, so that the majority of the known archaeological sites were avoided. The information was also used by ARCUS to produce a programme of mitigation. This identified a number of areas which were considered to have a high archaeological potential where topsoil stripping should be undertaken in advance of the general pipeline works, together with a watching brief in specific areas and general archaeological monitoring of the whole scheme. In the event, owing to the timetable of the project as a whole, there was insufficient time available to undertake advanced topsoiling, with the exception of a potential enclosure near New House, Caersws, which had been identified as a result of the geophysical survey.
- 1.4 The watching brief was conducted in two phases from 14 January to 16 February 2009 and 27 April to 30 September 2009, with site visits being entirely dependent on the contractor's programme of work.
- 1.5 The watching brief monitored the removal of topsoil along the whole of the route, maintaining a permanent presence in areas where there was considered to be a high archaeological potential, or where the working practice of the contractors dictated that occasional inspections would be ineffective.

2 ARCHAEOLOGICAL BACKGROUND

- 2.1 The original archaeological assessment in 2007 identified a number of known archaeological monuments within the immediate vicinity of the pipeline, including several late prehistoric or Romano-British enclosures and the site of a Bronze Age burial mound. More significantly, the pipeline followed along, or close to the projected course of the Roman road between the forts at Caersws and Forden Gaer (Halstead 2007).
- 2.2 Following the initial assessment five areas of the pipeline route were investigated by a geophysical survey in June 2008. The survey was conducted as a series of transects, mostly 30m in width, with 22 fields where access was available, with other areas being under cultivation. No subsequent geophysical survey was undertaken to investigate areas which were omitted. Half of the fields were found to contain features of possible archaeological potential, typically comprising linear and curvilinear ditches, as well as pits and traces of ridge and furrow. The most significant discovery was a possible rectilinear enclosure which was identified to the east of New House, Caersws (Hale 2008).





3 FORDEN GAER TO CAERSWS ROMAN ROAD

3.1 The Roman road between the forts at Forden Gaer and Caersws was identified during topsoil stripping at Penstrowed, in a field on the eastern side of the A490 (SO 0720 9083; Fig. 2). A small-scale excavation was conducted immediately, between 25-26 August 2009, carefully cleaning and recording an area measuring 6.3 x 7.5m centred on the best preserved section of road. In all 28m of road were identified within the stripped area, following an alignment of 332⁰. To the south of the excavation the road was less well preserved and a machine-excavated sondage some 35m from the excavation failed to identify any surviving road structure.

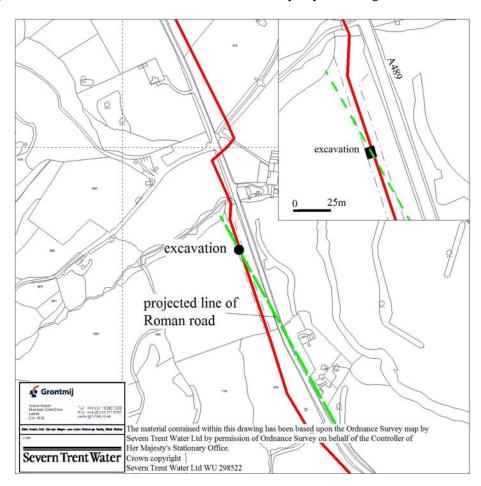


Fig. 2 Location of Penstrowed Roman road

- 3.2 It was evident that the road had been severely truncated, although there was evidence for two phases of road construction. The earliest phase consisted of a deposit of compacted river gravel (6) around 0.1m thick laid directly onto the clay subsoil. This was sealed beneath a deposit of larger river cobbles (7) up to 0.15m across, with both layers forming the base for a road around 4.5m wide with no surviving surface. A shallow roadside ditch (8) was identified along the western side, 0.9m wide and 0.3m deep. A ditch was filled by a stoney clay silt (9) from which a single iron object was recovered and sent for x-ray. This revealed it to be a broken nail with a square cross-section. The corresponding ditch on the eastern side was not identified within the excavated area.
- 3.3 Along the eastern side of the road there was evidence for a second phase of road construction in the form of a thin layer of compacted river gravel (4) which had been largely truncated by ploughing, surviving only where it dipped along the edge of the original road. A layer of silty clay (5) separated the two phases.

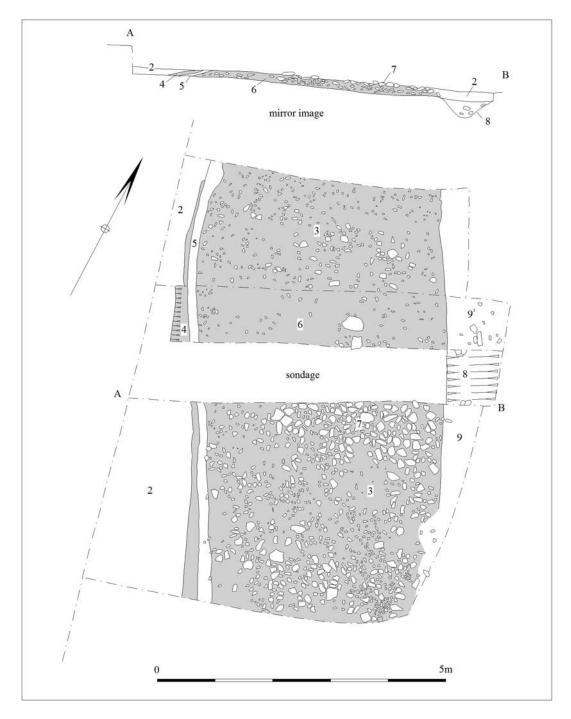


Fig. 3 Plan and section of the Roman road at Penstrowed



Fig. 4 The Roman road near Penstrowed viewed from the north

- 3.4 To the north-east of Newtown the watching brief may have identified further evidence for the course of the same Roman road at a point where the pipe trench crossed the A483 near Cil-Gwrgan (SO 1470 9333). A layer of stone beneath the base of the modern road appeared to have been laid on top of a deposit of imported clay.
- 3.5 A watching brief in 1996 had located a similar layer of probable road make-up around 350m to the north-east, again beneath the modern road. This consisted of two or three layers of gravel totalling up to 0.4m thick sealing a layer of clay (PRN 34754; SO 1492 9359).

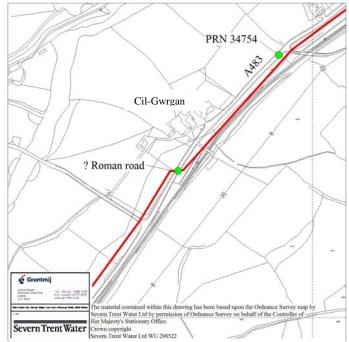


Fig. 5 Location of possible Roman road near Cil-Gwrgan



Fig. 6 Possible Roman road near Cil-Gwrgan

Discussion

- 3.6 The Roman road is part of the main line of communication between the Roman forts at Forden Gaer and Caersws, dating to the 1st century AD. Portions of the Roman road (Margary no. RR64) are very well-evidenced in the Severn Valley, with several sections still surviving as an upstanding agger. A considerable length of the road was revealed during excavations in advance of a new development along Pool Road in Newtown during the summer of 2009. Over 200m of the road were uncovered, with excavations confirming three phases of construction. The earliest phase was founded on a bed of imported clay and constructed from deposits of compacted river gravel (Grant and Jones 2009). This appears to be of a similar nature to the deposits identified beneath the modern road near Cil-Gwrgan.
- 3.7 The newly discovered section of road near Penstrowed has added significantly to the overall understanding of the route between Caersws and Newtown. Earlier work by Roman road specialists had identified two possible lines for the road near Penstrowed. In the 1950s, Professor Barri Jones claimed that field boundaries and old tracks constituted its course, but in the 1960s both the Ordnance Survey field investigators and the late Bill Putnam thought the Jones' thesis too complicated and suggested the more simple solution that the Roman road lay beneath the modern one. The fortuitous discovery of the road in the pipe trench proves that neither view was correct and that the road in fact followed a line that lay between these two hypothetical courses.
- 3.8 To the north-west, towards Caersws, the Roman road is visible as an upstanding agger near New House (SO 0521 9217), 3.3km away from the excavation. It is then assumed to more or less follow the modern A490 to Penstrowed, although it is now clear that at least for part of this section it actually lies to the west of the A490. Around 1.2km to the east the Roman road has been identified as parchmarks and slight earthworks in the grounds of Glanhafren Hall (SJ 0817 9022).

4 POSSIBLE ENCLOSURE NEAR NEW HOUSE

4.1 As part of the initial archaeological assessment for the pipeline route a programme of geophysical survey was undertaken by Archaeology Services, of University of Durham. This revealed what appeared to be a rectangular enclosure immediately east of New House, Caersws (SO 0380 9140). As part of the overall mitigation for the pipeline a programme of excavation was proposed for that part of the enclosure likely to be affected by the construction process. Following discussions between CPAT and Enterprise it was determined that the pipeline route could be modified slightly to avoid the enclosure, although an excavation would still be conducted in the area adjacent to the enclosure.

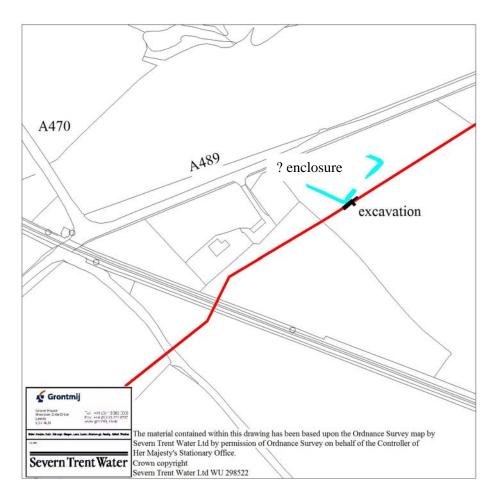
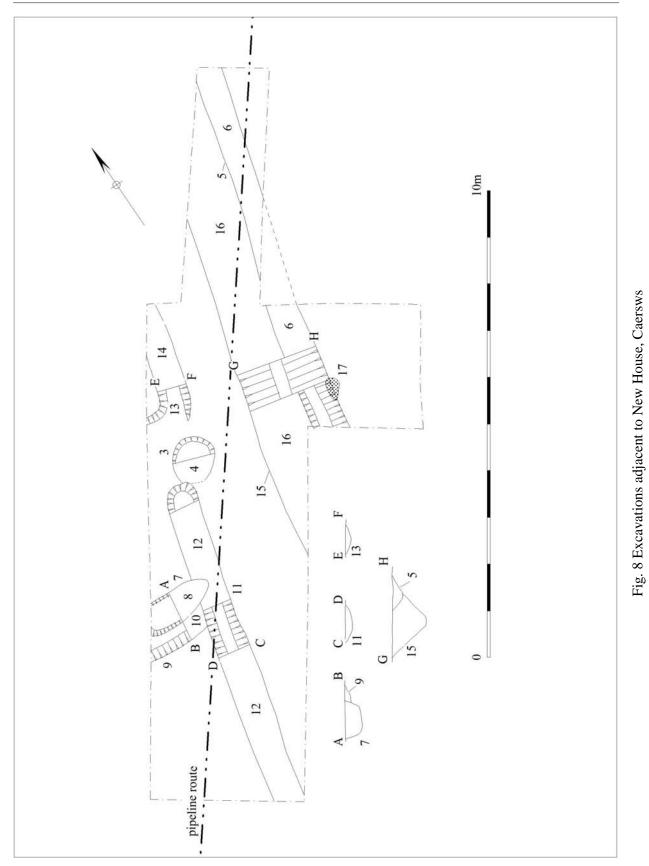


Fig. 7 Location of the possible enclosure and excavation at New House

4.2 The excavation was conducted on 14-15 May 2009, using a mechanical excavator to remove the ploughsoil and up to 0.2m of alluvium onto the surface of the natural subsoil, a stiff silty clay. This revealed a series of linear ditches and gullies, as well as several small pits. Unfortunately, no dating evidence was recovered from any of the features.



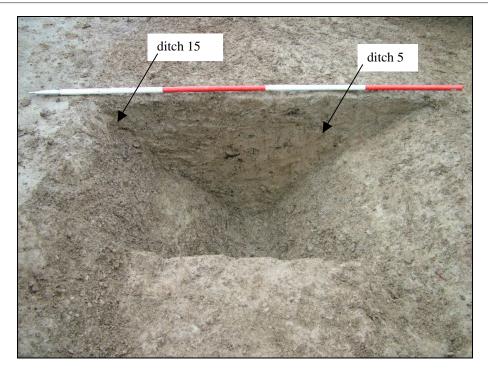


Fig. 9 Ditches 15 and 5 viewed from the south

- 4.3 The linear features were all aligned north-north-east/south-south-west, the most prominent of which was a ditch (15) with a V-shaped profile, measuring 1.8m in width and 0.7m deep. The single fill (16), a brown, firm, silty loam, had been cut by a small ditch (6), 0.8m wide and 0.45m deep, which followed the same alignment along the eastern side of the earlier ditch.
- 4.4 A shallow linear gully (11) was identified 1.75m to the west of ditch 15. This was 0.75m wide and up to 0.18m deep, with a butt-end at its northern extremity. The gully cut an earlier, shallow pit (9), which extended beyond the limits of excavation. Both the pit and the gully had been cut by a later pit (7), which was at least 1.5m long, 0.75m wide and 0.35m deep.

Fig. 10 gully 11 viewed from the north





Fig. 11 Gully 11 and pits 7 and 9 viewed from the west

- 4.5 A second gully (13) was identified just to the north of the terminal of gully 11, measuring 0.65m wide and only 0.1m deep. The feature may have been turning to the west at its southern end, although at this point it was very slight and difficult to identify.
- 4.6 The only other feature was a small pit (3) containing a relatively recent animal burial.

Discussion

- 4.7 The results from the excavation demonstrated the presence of a series of ditches, gullies and pits within the area which, in conjunction with the results from the geophysical survey, suggest potentially significant activity (Fig. 12). Although no dating evidence was recovered, the V-shaped profile of one ditch, together with the rectilinear nature of features indicated by the geophysical survey, could suggest a Romano-British date.
- 4.8 The nature of the activity is rather uncertain as the geophysical survey results are open to various interpretations. Although had been assumed that the survey had identified a sub-rectangular enclosure, a re-examination in the light of the excavation results suggests that there may be two phases of activity represented on the geophysics plot. A right-angled ditch can be clearly seen to the east, although the corresponding corner to the west is far from certain as a result of considerable magnetic disturbance. However, there do appear to be a number of linear features which are on a slightly different alignment to the right-angled ditch, one of which corresponds to the larger ditch (15) identified in the excavation.

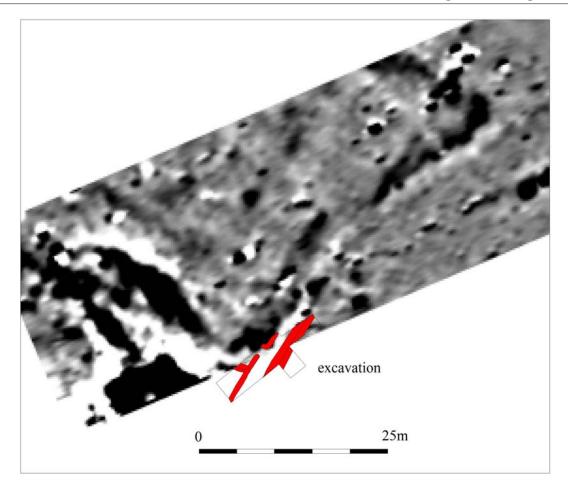


Fig. 12 Results from the magnetometer survey and excavation adjacent to New House, Caersws (based on survey data by Archaeology Services, University of Durham)

5 GREAT BRIMMON BRICK KILN

- 5.1 The remains of a small brick kiln were identified on 23 June 2009 during the removal of topsoil in a pasture field on the south side of Newtown (SO 1144 9100). The stripped area was then cleaned by hand and a programme of rapid excavation and recording took place over a four-day period.
- 5.2 The kiln occupied an area of around 8.5m north-east/south-west by 5.75m north-west/south-east and was readily identified by the intense burning which had taken place within the kiln. The remains were difficult to interpret and it seems likely that two phases are represented, with flues on slightly differing alignments. Each phase may have had up to eight linear flues spaced at regular intervals, around 1.0m apart and measuring *c*. 0.5m across and up to 0.2m deep, all of them filled with a mixture of coke and charcoal beneath a deposit of brick fragments.

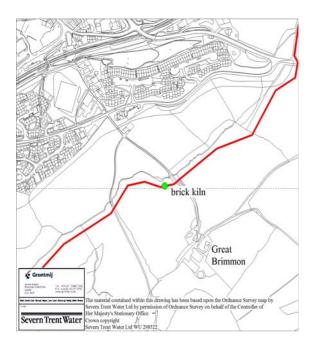


Fig. 13 Location of brick kiln

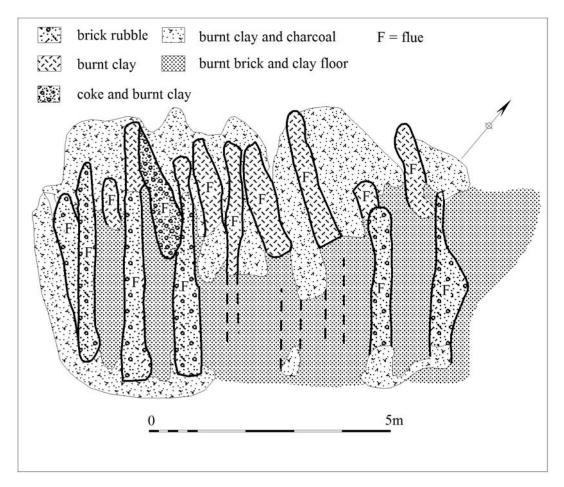


Fig. 14 Plan of Great Brimmon Brick Kiln



Fig. 15 Great Brimmon brick kiln from the south-west

5.3 The flues had been cut through a deposit of crushed and compacted fired bricks which formed the platform on which the kiln had been constructed.



Fig. 16 Great Brimmon brick kiln showing position of flues

5.4 Two samples of fired but deformed bricks were recovered from the kiln, each measuring around 230 x 108 x 65mm (9" x 4¹/4" x 2¹/2"). These were of a type known as 'place' bricks, which lack the indentation, or 'frog', typical of later, particularly industrial-scale manufacture. Pottery

found in the immediate area suggests that the kiln may date from the late 18th or early 19th century.

Discussion

- 5.5 The brick kiln is of a type known as a clamp kiln, and is likely to have been a temporary structure, being used for a specific building project and subsequently dismantled, leaving no obvious surface trace. A similar kiln was discovered in June 2009 near Caersws (Dodd 2009). Although clamp kilns generally appear to have employed similar construction methods, the techniques of operation may have varied, so that no two kilns were exactly alike. The general principal involved the excavation of a number of channels, forming a series of parallel flues which extended across the full width of the clamp. Layers of unfired, or under-fired bricks were then placed between the flues to form platforms on which the raw bricks would be stacked for firing. The fuel, in this case a mixture of coke and wood, would then be placed in the flues and the whole clamp sealed before the fuel was ignited. The duration of the firing would depend on the size of the kiln, although it could last for several weeks. The resulting bricks would vary in colour, texture and hardness depending on their position within the kiln (Proctor *et al.* 2000).
- 5.6 The field containing the kiln is known locally as 'brick field', and information provided by the landowner suggests that the kiln may have been constructed to fire the bricks which were used to build Great Brimmon farmhouse, around 150m to the south-east, although this has now been replaced by a modern building. Unfortunately, it is not known when the farmhouse was constructed.
- 5.7 It is likely that this type of kiln was a relatively common feature of rural mid Wales during the pre-industrial era, although it is rare for any evidence to come to light. The fact that two such kilns have recently been discovered in the Newtown area is therefore unusual and gives them a certain significance.
- 5.8 The remains of the Great Brimmon brick kiln were ultimately avoided by the pipe trenching as the route was modified slightly following the discovery.

6 TY COCH BUILDING

6.1 The remains of a probable 18th-century building were revealed during topsoil stripping between the A470 and the River Severn (SO 0275 9090). Rapid hand cleaning revealed the partial plan of the building, for which there were no earthworks or other surface evidence.



Fig. 17 Location of Ty Coch building

- 6.2 The building, which was around 8.7m in length, had a brick wall along the southern side, with end walls possibly built in stone, and cobbled flooring, only part of which survived. There was no evidence for the northern side of the building, and most of the cobbled flooring has already been lost. However, there was evidence for two internal partitions, dividing the building into three roughly equal bays. The bricks used in the southern wall measured 200 x 100 x 60mm and were of poor quality, probably of local manufacture, possibly in a clamp kiln such as that discovered at Great Brimmon. Interestingly, the Llandinam Tithe Survey of 1845 records the field as 'Cae Bricks', suggesting that there may have been a brick kiln nearby.
- 6.3 Finds associated with the building included a clay pipe bowl, sherds of late 18th or early 19th-century pottery and, unusually, a late 18th-century token. This type of token is known as a Middlesex Halfpenny, and has a Masonic design on one side consisting of a triangle surrounding an image of cupid (Seaby and Bussell 1970, 89).



Fig. 18 Ty Coch building viewed from the south-east

6.4 The building is depicted on the Ordnance Survey Surveyors' Drawing (No. 321) of 1822, and the Tithe Survey for Llandinam Parish of 1845, although there is no indication of the building's function.

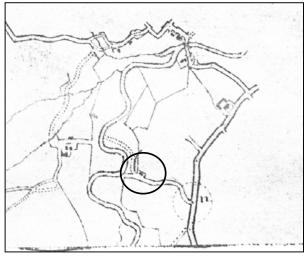


Fig. 19 Extract from the Ordnance Survey Surveyors' Drawing of 1822

7 FFRIDD WOOD BUILDING

- 7.1 Topsoiling operations between Penstrowed and Newtown revealed evidence for a possible building (SO 0763 9029). Three rows of edge-set bricks were identified, set on a bed of what appeared to be crushed brick, sealing a deposit of peat 50mm thick. The bricks had been laid in two directions, with a single row aligned east/west and a double row at right angles. The bricks appeared to be edging a deposit of crushed brick, which may have been laid as a floor. It was not possible to determine the full extent of the floor and no other structural features were identified.
- 7.2 The bricks, which measured 230 x 120 x 58mm, were hand-made and of poor quality, probably having been fired in a clamp kiln such as that at Great Brimmon. They had evidently been poorly fired as many had already weathered, breaking down to form to form a gritty clay.

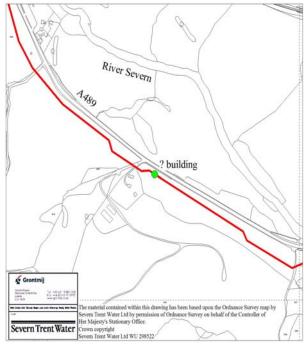


Fig. 20 Location of Ffridd Wood possible building



Fig. 21 The remains of the brick floor of a possible building near Ffridd Wood

8 PENARTH GULLY

- 8.1 A shallow, curving gully was identified 600m north-east of Penarth, on the north-western side of the A483 (S0 1436 9288). Around 22m of the feature were uncovered within the stripped area of the easement and two sections were excavated in an attempt to determine the likely date and function.
- 8.2 The gully was around 1.0m wide and up to 0.22m deep, with a primary fill of grey-brown clay silt and a secondary fill of yellow-brown clay silt. No dating evidence was recovered from either section.

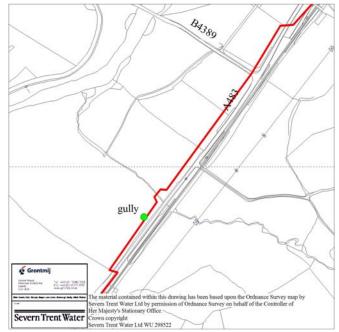


Fig. 22 Location of Penarth gully

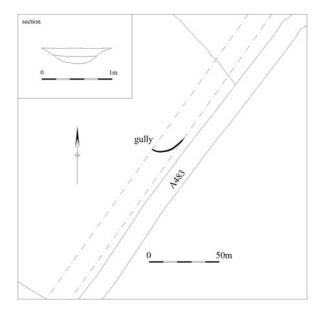


Fig. 23 Plan and section of Penarth gully

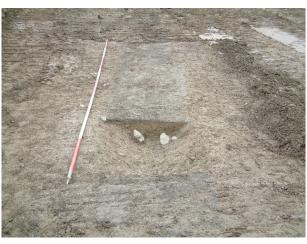


Fig. 24 view of Penarth gully from the southwest

9 FINDS

9.1 A range of post-medieval pottery, glass and clay pipe fragments were recovered from the topsoil during stripping operations, although these were only retained where they were thought to relate to a particular archaeological site. Among the topsoil finds was a fragment of perforated floor tile from a malting kiln, which was found around SO 04599174. There were also two significant finds which are worthy of particular attention.

Thumbnail scrapper (identified by George Smith)

9.2 A small convex scraper on a thick flake with steep, noninvasive edge trimming. There is crushing on the edge, perhaps from shaping or from use-wear. The flint is light brown to light grey in colour and is probably a fluvioglacial pebble rather than a quarried flint. The thumbnail type scraper is typical of, but not confined to, the Beaker Recovered period. during topsoiling at SO 03559 91201.



Fig. 25 Thumbnail scraper recovered from SO 0355991201

Gold noble

- 9.3 A single gold coin was recovered by a workman during trenching operations along one of the access roads on the Vastre Industrial Estate in Newtown (SO 1205 9173). The find was brought to the attention of CPAT who were monitoring groundworks in adjacent fields at the time of the discovery.
- 9.4 The coin has been provisionally identified as a Noble, dating from the reign of Henry IV (1399-1413). It is in excellent condition and displays very little sign of having been in general circulation.

Fig. 26 Gold noble of Henry IV (1399-1413)



10 CONCLUSIONS

- 10.1 The watching brief monitored all relevant groundworks along the 22km-long pipeline between Llandinam and Abermule, revealing a number of previously unrecorded archaeological features of Roman and later post-medieval date. Small-scale excavations were undertaken to investigate a number of sites, while other, less significant features, were investigated and recorded as part of the watching brief.
- 10.2 The pipeline route followed closely, though coincidentally, the projected line of the Roman road between the forts at Caersws and Forden Gaer and there was considerable potential for the road to be revealed at some point. A significant section of the Roman road was indeed identified near Penstrowed, where excavation revealed at least two phases of construction. However, it was clear that the road had been severely truncated, probably as a result of ploughing, with only the base of the road surviving in a reasonable condition. The road was around 4.5m wide with a single roadside ditch being present within the excavated section. Further evidence for the possible line of the road was revealed to the north-east of Newtown where a stone layer was identified beneath the make-up for the modern A483.
- 10.3 A series of linear ditches and gullies was identified during an excavation adjacent to a possible enclosure which had been revealed by geophysical survey near Caersws. Although no dating evidence was recovered, the V-shaped profile of one ditch, and the proximity of the Roman fort and settlement at Caersws, might suggest a Romano-British date for the features. A re-examination of the geophysical survey in the light of the excavation results has thrown some doubt on the interpretation of the possible enclosure, suggesting instead two phases of activity with ditches on slightly different alignments. The nature of this activity is uncertain and although a Roman, possibly military, association is possible this is purely speculative.
- 10.4 The remains of two previously unrecorded buildings were uncovered during topsoil stripping, one close to the River Severn between Caersws and Llandinam, and the other near Penstrowed. The former had foundations for a brick wall and was divided into three bays, each with cobbled flooring. Associated finds suggest a late 18th-century date. The other structure was only identified by the presence of a probable brick floor, with no obvious indication of the structure itself.
- 10.5 A relatively unusual discovery was made to the south-east of Newtown, where a small brick kiln was revealed. This was of a type known as a 'clamp' kiln, and excavation revealed two phases of firing, which local information suggests was for the production of bricks used in the construction of the now demolished farmhouse at Great Brimmon.
- 10.6 A variety of mostly post-medieval pottery, glass and other finds were recovered from the topsoil, although the distribution did not appear to be of any significance. Two artefacts were of more interest, however: a flint thumbnail scraper of probable Bronze Age date, found near Moat Lane, Caersws; and a gold coin which was provisionally identified as a noble of Richard II, was found on the outskirts of Newtown.
- 10.7 Post-excavation analysis has been completed on the site archive for the watching brief and excavations and following an assessment of the archive's potential no further post-excavation work is proposed. Each of the discoveries will be reported on in *Archaeology in Wales* 2009, which is considered to represent an appropriate level of publication. With the exception of the gold coin, artefacts will be deposited with the Powysland Museum in Welshpool in due course and the site archive will be deposited with the regional Historic Environment Record maintained by CPAT in Welshpool.

11 ACKNOWLEDGEMENTS

11.1 The writer would like to thank the following for the cooperation and assistance during the project: Ian Grant, Richard Hankinson, Ian Davies, Roddy Mattinson, and Rob Blackburn, CPAT; Dr Glyn Davies, ARCUS; Johnathan Burns, Grontmij; and Noel Hill and the staff of Enterprise. Thanks are also due to George Smith, GAT, for identifying the flint and to Rod Trevaskus for photographing the finds.

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