GLAMORGAN-GWENT ARCHAEOLOGICAL TRUST

WAUN CIMLA, CEFN CRIBWR: AN ARCHAEOLOGICAL SURVEY

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1. Introduction

Ogwr Borough Council owns a large tract of land in Cwm Ffos which is generally known as Waun Cimla, although this name originally applied to only part of the area. It is the Council's intention to develop this area as an educational resource and for informal recreation. In order to achieve this, the Council is preparing a management plan for the area, in consultation with appropriate outside bodies. Since the area contains a number of features relating to its industrial history, the Council commissioned the Glamorgan-Gwent Archaeological Trust to undertake an archaeological survey of Waun Cimla. The purpose of this was to provide a basis upon which proposals for the protection and interpretation of the area's historical features could be formulated.

The area consists of a valley formed by a small river, the Nant Iorwerth Goch, which flows roughly east-west. To the north the land slopes upwards from the river at a gentle gradient to form gently undulating land. The southern slope of the valley is much steeper. The area is mostly covered by trees, bushes, and dense undergrowth, although there are some areas of open grassland.

The survey involved a surface inspection of the area in order to identify features of historic interest, and, where appropriate, the excavation of trial sections to ascertain the nature and condition of the features.

2. The Scope and Limitations of the Report

This report covers the results of a thorough inspection of the area on the ground and the recording of the features observed. It also reports the results of the trial excavations which were carried out as part of the survey. The various features noted are interpreted with reference to available documentary sources. This is primarily, however, a report on fieldwork rather than on documentary research.

The very dense tree and undergrowth cover made the identification and recording of features very difficult. It is, therefore, possible that, despite thorough searching, some features remain undetected. It is also possible that, despite the use of accurate surveying equipment, including a Zeiss total station, there were minor inaccuracies in the recording of features. Some features were in such dense woodland that their accurate plotting was impossible with the resources available. Where this was the case, it is noted in this report.

3. The Historical Background

No prehistoric sites or finds have been recorded in the immediate vicinity of the study area. There is an enclosure, Pen-y-castell, which is probably of Iron Age date, on the adjacent ridge at Kenfig Hill.

Much of the land around Nant Iorwerth Goch and associated streams has for a long time been poorly drained and marshy. Even in the early 19th century some areas were still described as wasteland, as on the estate map of 1814, and this was probably the general character of most of the land up to the 18th century. No documentary evidence has been found of any medieval activity in the area, with the possible exception of the mill which was to become known as Melin Dai Guto which appears to have been of late medieval date.

The estate map of 1814, the earliest to show actual farmsteads, shows larger and more established farms to the northwest of the area, well away from the Nant Iorwerth Goch. The only farms close to the study area were Ty Du and Heol Fadog both of which appear to have been small in comparison. Their field patterns suggest more recent clearance of the wasteland.

On the first very detailed plan of the area, the Ordnance Survey map of 1875, many of the fields showed boundaries marked not by hedges or fences but by incompletely cleared scrub or woodland. Some of this remains today in the area immediately north of the area in Council ownership, indicating that these farmsteads represented new clearance of the land for farming. The gradual expansion of the cleared fields is well illustrated to the north of the area by the presence of slight trenches, or old cultivated field boundaries, in the fields to the south of Aberbaiden Farm.

The fields adjacent to Ty Du appear to be the earliest cultivated fields close to the northern side of the study area. The foundations of the thatched dwelling that comprised Ty Du still exist. The house was burnt down about 1940. There is no evidence to suggest that this building was erected earlier than the 18th century. Some of the fields on the slope to the south of the study area also appear to have been cleared in the 18th century.

Maps of this area prior to the 1814 Margam Estate map are, at best, sketch maps. Even the 1813 Ordnance Survey map, at 2 inches to the mile, is quite inaccurate in its detail. The available evidence would suggest that the only building in the area prior to the second half of the 18th century was the corn mill known as Melin Dai Guto. It is the only building, other than Ty Du Farm and Thomas William's croft, Glannant, shown on the estate map. Earlier indirect documentary evidence suggests that the mill was operating in the 15th century. It is documented in the Margam Estate records as being leased to the Walters family for several generations. On the 1813 Ordnance

Survey map it is mis-named Melin Du. The road which is now known as Bedford Road was originally called Heol y Felin, indicating that it provided access to the mill.

The mill passed, via the Bedford Estate, to the Brynant family and later to Malins and was demolished about 1835-1840. It seems virtually certain that the leat, waterwheel, and possibly part of the mill's foundations were re-used in the operations of the Cefn Brickworks. The site of this part of the brickworks lies beneath an access road in the present coal processing plant.

The mill house was demolished about 1950, but the foundations possibly remain, along with the remnants of the brickworks, within the coal processing plant. The leat and old access to the mill remain accessible beneath dense undergrowth, the water having been diverted from the leat and other feeder streams directly into the Nant Iorwerth Goch at Pont Rhyd y Maen in the 1960s. The mill pond/brickworks pond and sluice were filled in along with adjacent old mineworkings and now form one of the stockyards for coal processing.

The only other evidence of human habitation in the area before 1814 was the croft known as Glannant which lay adjacent to Bedford Road and to the stream sometimes referred to as Ffos Brook or Nant Waun Daffydd. On the 1799 plan by Yates, (a poor one of very small scale), a 'Forge' is shown in the area but it is likely that this did not refer to Glannant. Phillip Riden has suggested that it applied to the building which was to become the Plough public house. If this was the forge, it was doubtless served by the Ffos Brook.

Most of the land immediately adjacent to the Nant Iorwerth Goch appears to have been waste until its industrialisation towards the end of the 18th century. Although several entrepreneurs were involved in the industrialisation of the area, three figures played a particularly significant part in the process. The earliest of these was John Bedford, who was followed, in the early 19th century, by William Bryant and his family. William Malins, and his partner Rawlinson, built and operated several works in the area throughout the middle of the 19th century.

The most significant of the surviving industrial remains in the area is the Bedford Ironworks, (also known as the Cefn Cribwr Ironworks). These works, built by John Bedford in the 1780s, appear to have operated intermittently until the 1830s. The surviving remains include a blast furnace with, to its south, walls which would have supported a charging ramp. Lying to the north of the furnace are the remains of a casting house, and to the east, a blowing engine house. A short distance to the south of the site of the charging ramp are the remains of a structure which housed what are thought to have been calcining kilns.

Recent research by Phillip Riden and others has shown that parts, if not all, of the ironworks were rebuilt at intervals during

their history. Mr Riden's preliminary assessment of the available cartographic evidence suggested that one phase of this rebuilding may have involved a major change in the layout and alignment of the works. He argued that the map evidence strongly suggests that when 'new' furnaces were erected on the site in 1811 and 1824 they were in the same position as the one built about 1786-90 by John Bedford.

Documentary evidence suggests that the works' blowing engine was water-powered at least as late as 1798. Mr Riden has observed that one interpretation of the map evidence might be that the waterwheel was located in a wheel-pit immediately west of the present remains of the charging house. It would then be likely that the blowing engine house would have been located to the south of the furnace, below the charging ramp. If this were the case, and if the wheel were driving bellows, the original casting house might be expected to lie at right angles to the line of the blowing house, probably to the east of the furnace. This arrangement would seem to explain the apparent east-west alignment of the works on early maps. If, however, the furnace was blown by blowing cylinders rather than by bellows, or if the waterwheel was located elsewhere, the layout of the works may have been somewhat different. If the latter was the case, it is possible that the casting house, the remains of which survive today, is the original one built by Bedford. If the former hypothesis is correct, the alignment would probably have been changed to the present north-south line when the waterwheel was replaced by a steam engine.

Although many of John Bedford's papers still survive, his original drawings of the ironworks, unfortunately, do not.

To the north of the ironworks, on the opposite side of the Nant Iorwerth Goch, there is a row of beehive coke ovens which probably served the Cwsc Ironworks.

Following the opening of John Bedford's Ironworks, other industries were established in the area. These included brickworks, coal and iron ore mining, and other furnaces and forges. A brickworks, which operated until after the First World War, stood on the site of the present carpark. Parts of its remains are still visible adjacent to the carpark.

Most of the industrial complexes in the area appear to have been subjected to periodic change and rebuilding until finally abandoned and generally demolished. These various industrial works would have been served by a variety of trackways, tramways, and leats.

Of the various tramway routes which once crossed the area, very little recorded evidence remains. The earliest would be that of Malins and Rawlinson, linking their Cefn Ironworks, Cefn Brickworks and colliery to the Duffryn to Porthcawl tramroad of 1828. A stone abutment on the east side of Bedford Road and

north of the site of Glannant Cottage remains as evidence of this. Next to it are the abutments of a later bridge which carried Talbot's tramroad from the Cwsc to Bryndu, and was widened to carry the Port Talbot Railway from 1868. The bridge of the original tramway crossing the Nant Iorwerth Goch is reputed to exist, allowing the stream to flow beneath the very deep tipping and the later access road to the coal processing plant.

A mile-long loop of tramway, which was built by Malins to link the Cwsc and Mill works to the Porthcawl tramroad, ran from Cefn Junction, crossed the Nant Iorwerth Goch twice, and rejoined the main tramway near Bryndu. The western end of this loop can still be traced on the ground on the line of the footpath through the western end of the area in Council ownership. The wide bridge which Malins built to carry it across the river also survives.

A tramway in use from around 1890 to the early 1900s carried coal from Rees Levels, near Ty-Talwyn farmhouse, some distance to the north of the area, to the stocking area near the Porthcawl Tramroad/Port Talbot Railway. This route crossed the fields to the west of Aberbaiden Farm before passing under the smaller arch of the Heol Fadog Bridge and past Ty Du. Traces of this line can still be seen as a series of slight cuttings and embankments.

Another tramway to the north of the area, of which only slight traces survive, was built in 1898, initially to be horse drawn but later converted to steam power. It connected Ton Phillip and Ty-Talwyn with the coal stockyards which had developed over the Melin Dai Guto/ Cefn Brickworks land.

An additional, now dismantled, railway line was the direct incline from Aberbaiden which passed under the larger arch of the Heol Fadog Bridge to a coal-stocking area next to the Porthcawl Tramway/Port Talbot Railway.

The southern edge of the area of land owned by Ogwr Borough Council is parallel to the line of the Duffryn Llynfi Porthcawl Railway. This line ran between Maesteg and Porthcawl, initially as a horse-drawn tramway, and later as a broad gauge steam powered railway. Originally opened in 1830, it was converted to steam in 1860. In 1873 the line was purchased by the Great Western Railway, and renamed the Ogwr Porthcawl Branch.

No dwellings exist within the boundaries of the Council-owned land. There is, however, some evidence of pre-1900 workers' housing adjacent to it. William Malins erected two cottages close to the Nant Iorwerth Goch, on the edge of the present coal processing plant, in about 1840. They became known as Mill Cottages. They were demolished around 1970 although their foundations remain visible.

Malins also built numbers 29 and 30 Bedford Road. These stone-built cottages lie adjacent to the Port Talbot Railway bridge

abutments. To the south of the bridge abutments, and on the opposite side of Bedford Road from Glannant, is a house which was formerly a public house called The Plough. Mr Riden has suggested, on the basis of early map evidence, that this building, or a building on its site, was originally a forge. He suggests that the forge was in use by 1779 and was probably still in use in 1799. However, it probably became a public house at a fairly early date and continued as one until around the First World War.

A small building, lying to the south of the Bedford Ironworks, is shown on the tithe map of 1849. This house, named as Ty'n-y-Coed, also appears on subsequent maps until the early 20th century.

Minerals have been extracted in the area since 1799 or earlier. Fieldwork undertaken for British Coal in 1989 revealed evidence of apparently very early small-scale coal diggings in field 8156 (Ordnance Survey field number), to the north of the Port Talbot Railway line. Evidence of the remains of the Cefn Cribwr Colliery were also found, to the north-east of the Bedford Ironworks.

4. Results of the Field Survey

The field survey included the inspection of known historical features in the area as well as a search for previously unrecorded features. Several features outside the area of land in Council ownership were visited.

The site of the mill known as Melin Dai Guto lies within the boundaries of the, now closed, PD coal processing plant. Its leat could still be traced beneath very dense bushes and undergrowth. The foundations, and some demolition rubble, of the nearby Mill Cottages were still visible.

The former farmstead of Ty Du, which appears to be of 18th century date, was marked by slight ruins and the vegetation characteristic of a cottage garden. The similar ruin of the cottage known as Glannant, beside Bedford Road, showed signs of the damage it suffered during prospecting operations by the British Coal Corporation in the late 1980s. The nearby cottages, numbers 29 and 30 Bedford Road, which were built by Malins, were found to be in a very poor state of repair.

The former Plough Inn, which Mr Riden has suggested might originally have housed a forge, is still occupied as a bungalow, its first floor having been removed.

Close to the cottages on Bedford Road, the eastern abutment of the Malins and Rawlinson tramway, and both of the later abutments which were extended to carry the Port Talbot Railway across Bedford Road, still survive in good condition. The latter abutments still support the bridge which carries the present British Rail goods line. On top of the surviving abutment of the Malins and Rawlinson bridge there is a rectangular block of slag which appears to have cooled and hardened in its tramway wagon and been dumped at the end of the bridge.

The bridge which was built by Malins to carry a tramway loop over the Nant Iorwerth Goch, was found to be in need of some repairs to its arch and outer faces.

Much of the route of the tramway between the Rees Levels and the Porthcawl/Port Talbot Railway can still be traced, as can the line from Aberbaiden.

Of the Cefn Brickworks, which lay on the site of the now closed coal processing plant, no trace could be found. The Cefn Ironworks were opened by Malins and Rawlinson in 1845 and continued in operation under the management of a succession of different companies until they finally closed in 1900. The Cefn Ironworks and the Cefn Slip Colliery, which was also opened by Malins and Rawlinson, lay within the area of tipping in the British Coal opencast mine. No trace of either could be found.

The site of Ty'n-y-coed was covered by rough grazing and bushes, but there were traces of stone rubble visible where the ground had been disturbed by animals.

The Bedford Ironworks was undergoing major preservation works at the time of the survey. This site has been described extensively in other reports and is not, therefore, described here.

The row of beehive coke ovens survived in remarkably good condition. They were, however, showing signs of suffering increasingly serious damage from the action of the roots of overlying vegetation and from a degree of vandalism.

Immediately to the south of the coke ovens, and running parallel to them, were traces of a disused tramway (Figure 3). This appeared to be the remains of a tramway which is shown on the 1888 Ordnance Survey map. This ran from an engine house in the Cefn Ironworks, south-westwards, over Bedford Road, and under the Port Talbot Railway line. It then skirted around the southern side of the Cefn Cribwr Colliery, and turned westwards, over the Nant Iorwerth Goch, to join the Port Talbot Railway to the west of the coke ovens. The stone-built abutments of the bridge which carried the tramway over the Nant Iorwerth Goch still survive in fairly good condition although they are in need of some repair (Plate 3). To the west of the coke ovens a number of lengths of good quality stonework, revetting the southern face of the embankment which carries the tramway, were recorded. Eastwards from the river, the line of the tramway became increasingly difficult to trace. To the south of the Cefn Cribwr Colliery it formed a low, flat-topped bank, but further to the east it was almost impossible to identify its line.

The site of late 19th century Cefn Cribwr Colliery lay between the Nant Iorwerth Goch and the present footpath through the middle of the Council-owned area, to the east of the footbridge over the river. The site had been noted during a survey conducted in 1989. It was subsequently inspected by staff of the Trust in 1990, when dramatic subsidence had revealed the presence of two shafts. One of these (S1 in Figure 3), was square and brick lined. The second (S2 in Figure 3), had a dressed face on its eastern side, but the nature of any facing that might have existed on the other sides could not be seen. The first shaft was open to a depth of approximately 1.5 metres, and the second to a depth on excess of 5 metres. The hazardous nature of these features made detailed recording impossible.

To the south of the two shafts there was evidence of a possible third shaft (S3 in Figure 3, and Plate 1). A tree had subsided into a roughly circular depression approximately 2 metres in diameter. It had subsided to about 0.5m below the surrounding ground level. The subsidence had exposed a length of tram-rail which lay across the hollow. It is likely that the subsidence was caused by the presence of a shaft, or some other void, beneath this area.

The area around the shafts appeared to have been subjected to extensive tipping of industrial waste. While, apart from the shafts, there was no evidence of any structures visible on the surface, it was clearly possible that there might be some evidence of structures surviving beneath the tipping. In order to test this theory, two small trial excavations were carried out (T1 and T2 in Figure 3).

The trial trenches had to be positioned and excavated with some care because of the potential risk of encountering further subterranean voids. Trench 1 was located between Shaft 1 and the river. It was 3m long and 1m wide, and was excavated to a depth of 1.2m. The stratigraphy consisted of 0.10m of topsoil overlying coal-dust, fragments of shale and patches of clay. This may be interpreted as colliery waste. No other features of archaeological interest, or artefacts, were found.

The second trial trench was excavated at the southern edge of what was presumed to have been the extent of the colliery. The trench was 4m long and it ran north-south across a bank which appeared to have been either the edge of the colliery waste tipping, or the edge of the tramway described above. The excavation showed that the stratigraphy consisted of four layers (Figure 2). The uppermost, context 6, was a thin layer of topsoil. This overlay context 7, which averaged 200mm in thickness, and consisted of clayey, humic soil mixed with coal-dust and small shale fragments. This overlay up to 800mm of pale yellowish brown clay mixed with coal-dust, and shale fragments (context 8). This overlay pale greyish yellow clay, context 9, which appeared to be natural. Towards the southern end of the trench, below the steepest part of the slope, there was a concentration of large stones (context 10). This appeared to be the collapsed, or disturbed, remains of a possible stone revetment of the slope. Given the character and layout of the material revealed during the excavation of this trial trench, it appears most likely that this was the edge of the tramway. The embankment for this had incorporated some coal dust, and had had a stone revetting along its southern side.

The limited excavation undertaken on the site did not reveal any structures other than possible traces of the tramway. However, given the extent of waste tipping on the site, and the occurrence of shafts containing masonry, there remains a possibility that other structural evidence still survives.

Immediately to the north of the colliery site, the river flows through, and, to some extent, around, an iron chute (Plate 2). This is made up of two lengths each of which is built from rectangular plates rivetted together. It appears that it may have been made by cutting a round tube in half lengthways to form the two parts. The function of this channel was presumably to contain the water in the channel and reduce seepage into the adjacent mine-workings.

Immediately to the west of the Bedford Ironworks, a small gully was recorded which appeared to follow the approximate line of a field boundary or ditch shown on the 1899 Ordnance Survey map. It is shown on that map as running from the present line of a stream which flows from close to the Ty'n-y-coed, under the line of the Duffryn Llynfi Porthcawl Railway, and then northwards for a short distance. The present stream drains into a pond. The one shown in 1899, however, curved east and then north to meet the Nant Iorwerth Goch close to the north-west corner of the ironworks. The gully found during the survey appeared to be this, now abandoned, watercourse.

In order to assess the nature of this gully, a small trial section was excavated across it (T3 in Figures 2 & 3, and Plate 4). The trial trench was 3m long and 1m wide. It showed that the gully was approximately 1.1m wide and 42mm deep, with sides which sloped at around 45 degrees, and an almost flat bottom. It was cut into pale greyish yellow clay, and was filled with up to 23mm depth of humic brown silt (context 2). This was overlain by up to 6mm of topsoil. The only artefact to be found during the excavation of this feature was an undiagnostic fragment of a clay tobacco pipe in context 2. The excavation showed that this was a small ditch which, from the nature of its fill, had probably carried water.

All of the area in the ownership of Ogwr Borough Council was visited in the course of the survey. It was found that the land belonging to the Council had been subjected to extensive refuse tipping (Figure 1). This was considerably more extensive than that shown on the relevant Ordnance Survey maps. This tipping will clearly have masked any features which lie beneath it. While some of these features had been recorded on maps prior to the tipping, there may have been other features which were not. Some features were found in the areas on which tipping had not occurred.

Between the footpath and the river, a small linear hollow between two banks was found (6 in Figure 1). It measured approximately 11m in length, and slight subsidence was evident on the slope above its inner end. It appeared to be the remains of a small drift mine.

Further evidence of mining activity was found towards the extreme north-western corner of the area in Council ownership. This consisted of three groups of pits surrounded by spoil-tips clustered on the slope above the south bank of the Nant Iorwerth Goch (Figure 4 and Plate 5). The westernmost of the groups lies between the pond, which is recorded on Ordnance Survey maps, and the river. The similar group to the east is divided from it by a ditch and a wide stretch of land which had clearly been subject to recent disturbance. It is therefore possible that these were originally all part of the same, rather larger, group of features, some of which were destroyed by the recent disturbance. A third group was found a little further to the east. It was not

possible, however, to record these in any detail because of the very dense undergrowth and woodland which covered them. It appeared that the refuse tipping had almost certainly covered additional features.

Many of these pits were filled with water, and it was not considered practicable, with the resources available, to excavate any of them. These features were almost certainly bell-pits. These are small-scale mines, probably, in this case, for coal, which would have been worked for a short period and with a minimum of capital or technological input.

The pond to the south of the western group of bell pits appeared to be artificial. It was probably dug either as a clay pit or as a small opencast coal mine. It appears also, perhaps subsequently, to have been used as part of a water-management scheme. It is connected to the ditch to its east by a gully, now dry (Plate 6).

To the north of the Nant Iorwerth Goch a long straight gully, some 3-4m wide, was found running east west (Figure 4). It was joined to a small pond to its north by a smaller gully. The function of these gullies, other than possibly for drainage, was not clear.

Towards its eastern end, the northern side of the gully was cut by a deep pit which appeared to have been the result of subsidence caused by the collapse of a subterranean structure. The pit was approximately 4m in diameter at its top, and over 3.5m deep. At the bottom of the pit a void, which appeared to be the top of an arch or vaulting, could be seen. The sound of running water was noted. Safety considerations prevented more thorough investigation, but it appears likely that the pit was the result of the collapse of part of a culvert or some similar feature. The date or possible purpose of this feature has still to be determined.

Plate 1: Cefn Cribwr Colliery: Top of possible shaft with tram-rail

Plate 2: Iron water channel

Plate 3: Abutment of tramway bridge

Plate 4: West-facing section of Trial Trench 3

Plate 5: Bell pit

Plate 6: Gully leading to pond