



Association for Industrial Archaeology : South East Wales Conference 2003

These notes have been produced by members of the AIA and Oxford House Industrial History Society to accompany the visits arranged as part of the AIA 2003 Conference. The visits and their leaders are:

Saturday 6 September:

A	Rhondda	Michael Messenger
B	Newport	Barry Mawson
C	Merthyr Tydfil	Terry Evans, Stephen Rowson

Sunday 7 September:

D	Blaenavon	John Evans
E	Melingriffith, Nantgarw	Peter Wakelin, Robin Williams
F	Barry	Michael Messenger

Monday 8 September:

G	Cefn Cribwr & Tondu	Roger Sellick
Ga	Flat Holm	
H	Blaenavon	John Evans

Tuesday 9 September:

J	Cardiff Bay	Michael Messenger
K	Coastal Gwent	Robin Williams

Wednesday 10 September:

L	Upper Taff Valley	Terry Evans
M	Eastern Valleys	Robin Williams, Tony Jukes

Thursday 11 September:

N	Rhymney Valley	Tony Jukes
P	Rhondda	Terry Evans

Neither these tour notes nor the tours themselves would have been possible without the help of many people, not least those listed above. A great deal of personal time has been given freely and generously to prepare this year's programme. As with the gazetteer, we are grateful also to Cadw: Welsh Historic Monuments and to Stephen Hughes and Brian Malaws at the Royal Commission on the Ancient and Historical Monuments of Wales, Aberystwyth, for information from their records.

A Rhondda Heritage Park & Hetty Pit

Saturday 6 September 2003

RHONDDA HERITAGE PARK

Formerly Lewis Merthyr Colliery, sunk in the 1870s by W. T. Lewis, later Lord Merthyr, and closed in 1983. The main element in this historic site are the two winding-houses, with their large steam-engines, and their adjoining headgear. The structures include the two oldest headframes remaining in Wales, the two winding-houses, with an electric and a steam winder, complete pitheads, a lamproom and two fan houses. Situated between the two shafts are the Lamproom and Fanroom.

Built of pennant sandstone, both winding-houses have secondary brick-infilling on the north gables, facing the shafts, which replaced the original timber-framing, and cladding, of these gables. Trefor Shaft (Winding House dated 1878) ceased production in 1958 and Bertie Shaft (Winding and Compressor House dated 1890) ceased production in 1960.

Situated between the two shafts is the Lamproom and Fanroom, also of rubble pennant sandstone and probably late nineteenth-century with, like many colliery structures, a corrugated-iron roof.

Prominent is the tall tapering yellow-brick chimney, on a square rusticated masonry plinth. Local pressure ensured the site was retained by the local authority as a Heritage Centre and it re-opened in its new guise in 1989. It concentrates on the social aspect of Rhondda's coal mining heritage and receives some 55,000 visitors each year.

HETTY PIT WINDING ENGINE

John Calvert first started sinking what became Tymawr Colliery in 1848. The Hetty Shaft was sunk by the Great Western Colliery Company in 1875. The colliery was set on a narrow terrace between river, road, railway and the steep northern valley scarp so that the diagonal legs for the headframes rose from the engine houses at a very steep angle. The winding-cables rose from small openings in the engine house roofs near their north gables, rather than from the gable-walls themselves.

The most prominent surviving feature of the Great Western Colliery is the engine and fan house with its attached steel headframe. In situ is the 1875 horizontal winding engine by Barker

and Cope of Kidsgrove, Staffordshire with. It has 36-inch cylinders and was heavily rebuilt in 1906, at which time it was alleged to be converted from flat rope. The 16-foot diameter winding drum wound from the 392 yard deep shaft. Work is in hand restoring the engine. The colliery closed 1983 and the site is now part of Rhondda Heritage Park, although not normally accessible yet.

En-route through Pontypridd note:

PONTYPRIDD VIADUCTS

Brunel's 110 feet skew single-span stone arch of 1841 is the first crossing of the Rhondda by the single track Taff Vale Railway. Doubling took place from 1857 but with two-spans and a river pier immediately alongside. A second 7-arch double-track crossing was built in 1861-2 to replace a very sharp left curve into the Rhondda valley.

PONTYPRIDD RAILWAY STATION

1906-07 rebuild for Taff Vale Railway. A massive red-brick and glazed-tile island platform with bays, with heavy steel and wrought-iron details. In 1906 up to 200 trains per day passed through here. It was longest platform on the former Western Region of British Railways.

MJM

B Newport

Saturday 6 September 2003

NEWPORT

Newport, the 'Novo Burgo' of Giraldus Cambensis was developed as a Norman settlement around the lowest bridging point of the Usk, two miles downstream from the Roman bridge at their garrison town of Isca Silurum. (Caerleon).

It had obtained Borough status by 1120, and, with its substantial castle, was for centuries an important trading port, with wharfage on the riverbank from the town bridge almost to the mouth of the Usk.

This has been demonstrated by the discovery in 2002 of a well-preserved trading boat of the period 1465-66. This 80 foot hull has been removed for conservation, and there is evidence that it traded with Spain and Portugal.

The town was described in 1801 by Coxe as a 'long, narrow and straggling town', and indeed this description fits the riverside areas to this day. Newport's industrial significance was established in 1799 with the opening of the Monmouthshire Canal, linking it in two arms with Crumlin and Pontypool. In 1812 an end-on link was established at Pontypool with the Brecon and Abergavenny Canal, providing a through route to Brecon.

The opening of the Rumney Tramroad in 1826 completed the transport infrastructure, and Newport became the almost exclusive outlet for coal and iron products from the Ebbw and Afon Llwyd (Pontypool) valleys. It also shipped a substantial tonnage from the Rhymney Valley. Although eventually overtaken by Cardiff and Barry, the tonnage exported through Newport was the highest in South Wales for much of the 19th century.

A major problem with shipping through Newport is its tidal range, at 46 feet average, rising to 52 feet on the springs, the second highest in the world.

It was obvious that enclosed docks were needed, and the Town Dock, 1 mile downstream from the bridge (built 1842, was extended 1858, and filled in c.1930) was followed by Alexandra North (1875) and South (1893), at the mouth of the Usk, the latter two almost exclusively equipped for coal export (although there was a considerable import trade in timber, primarily

pitwood.)

The entrance lock of the Alexandra South Dock was for some years the largest in the world.

Two substantial buildings survive on the Town Dock site, the Baltic Oil Warehouse of c.1844, and the Maltings, alongside the entrance lock, of which the outline can still be seen.

Newport once had four railway stations, of which one – High Street – survives, containing elements in the platform buildings of Brunel's design for the South Wales Railway (c.1852). To the SW is an unusual survivor – Brunel's Carriage Shed – still in use as a stores – a ten-bay structure of local limestone. West of the station is Brunel's tunnel with round, arch portal, alongside the later (1912) portal constructed when the tracks were quadrupled. On Westgate Square is the former Westgate Hotel, scene of the rout of the Chartists in the riot of 1839.

The towns' most prominent structure is its Transporter Bridge (F. Arnedin, 1902-06). This was built to provide access to industrial developments (notably, Lysaghts' Orb Steelworks) on the east bank of the Usk, whilst allowing high-masted ships passage to the Town Dock.

Obsolete almost as soon as built, this elegant bridge is a remarkable survivor, and has been beautifully restored to full use in recent years. It is a strange irony that the town's most famous landmark is also its most commercially useless! Upstream, George Street Bridge (1964 – Mott, Hay and Anderson) is the earliest cable-stayed cantilever bridge in Britain.

The town's population (1996) was 136,000 and it achieved city status in 2001. The decline in coal exports started in the 1920's, to nil after World War II. This has been replaced – for the time being – by steel and its associated industries, together with substantial developments in electronics, although the latter has also experienced major downturns in the last few years.

CRW

C Merthyr Tydfil, Cyfarthfa

Saturday 6 September 2003

Type of visit: Furnaces - helmets and lamps will be provided. Slightly uneven underfoot and involves walking through the blast-tunnel to see the constructional details.

N.B. An exhibition on the Crawshays and Merthyr Iron will be on display inside the Castle Museum.

Cyfarthfa Ironworks was originally sited upstream of the present location. Anthony Bacon of Whitehaven rented 4,000 acres of wooded land from Lord Talbot and Michael Richards and the first two furnaces appeared in 1765 and 1767. He also owned the Plymouth and Hirwaun works but died in 1786. As his two sons were minors, Plymouth was leased to Richard Hill, Hirwaun to Samuel Glover of Abercarn and Cyfarthfa to Richard Crawshay of Normanton.

Richard Crawshay 1739-1810, the son of a Yorkshire farmer, went to London aged 16. Selling his pony he worked in Bacon's iron warehouse and became controller and shareholder. He was clearly recognised and became Bacon's business partner with links to the East India Company and the King of Sardinia.

The 1786 move to Cyfarthfa was followed by huge growth helped by the opening of the Glamorganshire Canal. He was responsible for the introduction of Cort's puddling process and other refinements and the works became the greatest in the world in the early 19th. century. William Crawshay I, 1764-1834, Richard's son was remote from Cyfarthfa at the George Yard premises in London and in turn appointed his eldest son **William II 1788-1857** to the works in Merthyr. As 'birds of a feather' the pair did not get on. It was Wm. II who built the Castle in 1825. The previous abode was at the close-by Gwaelodygarth House. Overlooking the lake which was a works' feeder pond and connected by underground tunnel to the E. workshops the building was intended to dominate. Robert Lugar designed the House to a strict budget. The locally quarried Pennant stone is intimidating. A terrace lies in front and following Council acquisition in 1909 the building is now part school and part museum and art gallery. The museum section has had heavy timber sash

window frames replaced, much enhancing the external appearance, whilst its interior rooms have been tastefully decorated in contemporary style. (See Newman:Glamorgan).

Much of the technical progress came from Watkin George, a village carpenter. He was so skilled mechanically that he became a shareholder.

Wm.Crawshay II took full control at the death of his father in 1834 at a time when ordnance production was yielding to the rolling of railway lines and merchant bar. In 1836 two furnaces were built at the satellite of Ynysfach to complement the two George furnaces of 1801. These survive as does one blast-engine house of 1801. The masonry is of superb quality.

Remarkably the masonry Cyfarthfa furnaces lived through the later steel-making phase of the site as they provided a platform for the charging bank of the free-standing iron-plate-bound furnaces associated with the Bessemer plant.

Seven furnaces were extant in 1823. Six remain. Upstream of the furnaces lies Pontycafnau, an iron version of a wooden bridge. Sanctioned in 1793 the dovetails and mortice and tenon techniques are of great interest. Two A-frames incorporate a king-post either side of the decked water-trough with tramroad chairs cast in. At first a high-level trough also existed running to the works on trellis supports. The wheelpit for the 50ft. blowing-engine wheel still exists.

In 1845 Wm.II retired and his son Robert Thompson Crawshay took over. From then onwards management quality weakened and the works' reputation declined. To counter strikes it was closed in 1874. Robert Thompson Crawshay died in 1879 and re-opening took place under his three sons William Thompson, Robert Thompson and Richard Frederick. Conversion to steel making took place, the installations being finished in 1884.

1902 saw the share capital acquired by GKN (of the rival Dowlais!). Output ceased in 1910 to be followed by temporary re-opening making shell steel between 1915 and 1919.

TWE