‘Forged in man’s minerals’

Plas Uchaf: Archaeological investigations at the Upper Bank copper and zinc works, Swansea

by Gerry Thacker and Steve Lawrence

with contributions by

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Front cover: View of the excavations, with Swansea.com Stadium in the background
Rear cover: Selection of finds from the site: (l to r) capping stone with initials of Pascoe Grenfell & Sons; coin minted by the Parys Mining Company; tram wheel; cone made of wood and metal.

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'*Forged in man's minerals*' taken from '*I, In My Intricate Image*' by Dylan Thomas, born in Swansea in 1914

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Summary

Between 2006 and 2008 Oxford Archaeology conducted a series of archaeological excavations on the site of the former Upper Bank (in Welsh, Plas Uchaf) copper and zinc works on the east bank of the River Tawe, to the north of Swansea. The Upper Bank Works was founded in 1757, initially for the smelting of lead and zinc, although by 1782, if not slightly earlier, this had been replaced entirely by the smelting of copper. The earliest remains uncovered are likely to date from the late 18th to early 19th centuries and can be identified with structures shown on a surviving plan of 1814. Excavated remains included the river and canal docks, ore storage rooms, a residential building and the remains of some of the earlier copper working furnaces used in the Welsh Process of copper smelting. No remains of the initial mid-18th-century lead and zinc works were uncovered.

During the early to mid-19th century the works expanded and the number of furnaces identified from this period reflect several phases of rebuilding and enlargement. The base of the first rolling mill at Upper Bank was excavated, as well as the associated water tanks and steam hammer room. Other excavated structures of this period include chimneys and flue networks, internal rail tracks and a turntable, barrow runs, a forge, a carpenter's workshop, and storage rooms. By the later 19th century the number of rolling mills had increased as many of the furnaces went out of use, reflecting changes in the copper working industry throughout South Wales.

The central area of the works was converted to zinc smelting in 1868, and many of the furnaces using the new Siemens Belgian technology partially survived along with the remains of batteries of the associated gas producers. These are of distinctively early form and may have been introduced to the Upper Bank Works at an early stage in the adoption of the new processes. Two large new double furnaces and new gas producers were added, probably in the later 19th century. Later modifications to this technology were noted within the remains of a purpose-built zinc hall of early 20th-century date which was excavated at the northern end of the development, and included a battery of six Belgian regenerative zinc furnaces and seven circular gas producers along with chimney bases and flues, and railway tracks.

Limited remains of a World War II munitions factory were also excavated and can be identified from the evidence of two surviving contemporary plans. The excavated remains included machine bases for a rolling mill, numerous stanchion bases, tanks, and the remains of a casting shop and boiler house.

The finds assemblages and groups of sampled bricks and ceramic building material provide some evidence for dating and the materials used for the construction of buildings and installations, aspects of the daily life of the works, and evidence for suppliers. Most significant, however, is a large assemblage of metalwork including manufacturing waste and manufactured products, tools and fixings, ingots and ingot moulds, furnace ladles, rail track and barrow run plates and possible machine components. There is also an interesting assemblage of crucibles that are likely to have been used in the assaying of metal.

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Ranging poles showing the scale in photographs have graduated red or white sections each of 500mm.

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