

Castle Meads power station, Gloucester

by Steve Mills

Alney Island is an area on the outskirts of Gloucester that has been visited by GSIA on a number of occasions. It is an area with a rich industrial past and over the years, has hosted a number of industries such as brickmaking. These have long gone, but there are still many tangible reminders, particularly of road, river and rail transport links. However, one major industrial site survived until the late 1970s, although little now remains of this once-important activity. What was it? It was Gloucester's very own electricity generating plant, the Castle Meads power station, built on the banks of the Severn, opposite the former Gloucester prison and the Old Quay.

It owed its existence mainly to the advent of the Second World War, having been set up as a war emergency station (one of two), intended to decentralise generation from existing power plants considered to be at risk from enemy action. In essence, it acted as something of a backup, located in a safer area, relatively remote from major cities and their attendant power plants.



Two views of the power station in 1949, showing the rail link, coal stockyard, and proximity to the River Severn (courtesy *Britain from Above* series)



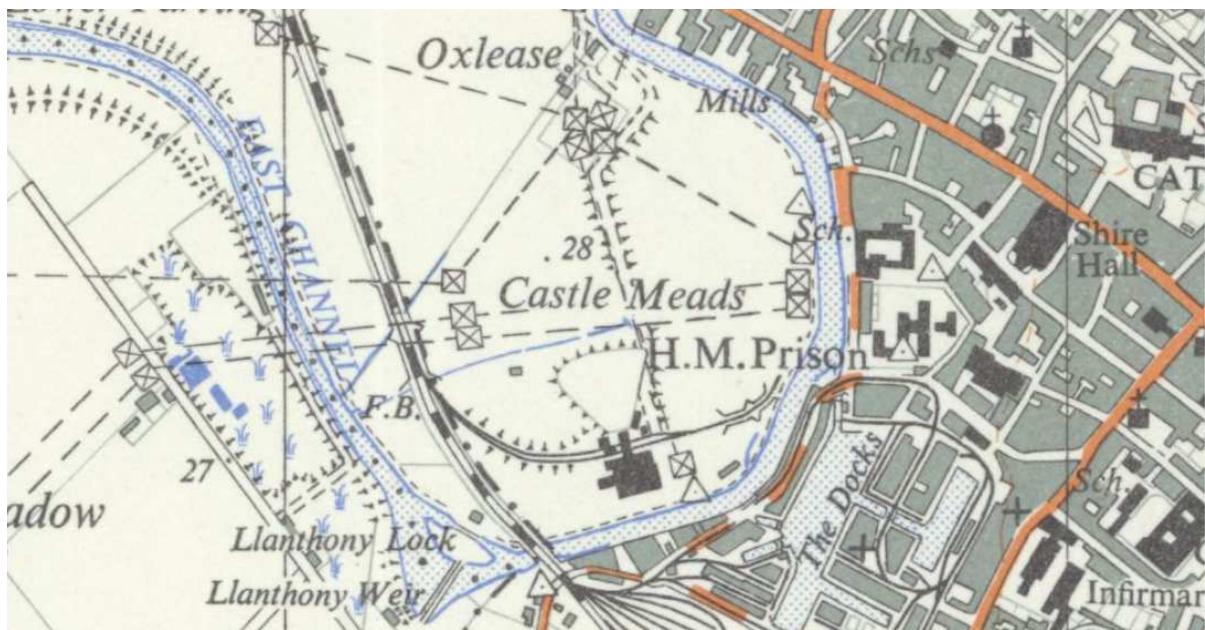
Construction began during the second year of the war, with the station beginning generation at the end of 1942. Compared to modern coal-fired power plants, output was miniscule, consisting of two 20 megawatt (MW) turbo-alternator sets supplied by British Thomson-Houston, a British engineering and heavy industrial company based at Rugby - the company was well known for their electrical systems and steam turbines. Castle Meads' output of 40 MW was not that unusual for the time. Throughout the 1920s, most stations only generated around 5 MW, although by the 1930s, this had increased to between 20 and 50 MW. For comparison, many modern coal power plants have a capacity of between 1000 and 2000 MW, with some of the world's biggest being between 6000 and 7000 MW! But of course, technology has since advanced tremendously, and demand for electricity at the time was much less.

Steam for Castle Meads' two turbo-alternators came from by five boilers supplied by Yarrow & Co, a major engineering company, perhaps best known for their marine boilers. Early in the 1920s, they began to widen their client base to include the growing market for land-based power station boilers. The Yarrow boilers installed at Castle Meads generated steam at a pressure of only 3 MPa (425 psi) and a temperature of 441°C. Again, for comparison, some modern coal power plants now rely on steam pressures in excess of 24 MPa (3480 psi) and temperatures above 600°C. Coal supplies arrived via GWR's Docks branch from Over, and by barge on the Severn. Once at the power station, it was moved to the boilers by a fireless locomotive, built by Andrew Barclays of Kilmarnock in 1942.



The fireless locomotive used for moving coal around the power station

Originally owned by the Corporation of Gloucester, between 1948 and 1957, the plant was operated by the the British Electricity Authority, followed by the Central Electricity Authority. From 1958 to the time of closure in 1972, it was the Central Electricity Generating Board. The station then stood idle until 1978 when it was finally demolished.



Alney Island in 1967, with the power station in the centre, showing rail links and coal stockyard (courtesy Ordnance survey)

There is now little left to see apart from the causeway along which the Docks railway ran, a few remaining railway lines, and part of the coal jetty.

February 2021