

Celebrating 225 years of the Swansea Canal 1798-2023.

The year 2023 is the 225th anniversary of the completion of the Swansea Canal in 1798, and this article attempts to showcase the history and heritage surviving along the Swansea Canal corridor today. The construction of the Swansea Canal between 1794 and 1798 led to the development of **every community** in the Swansea Valley north of the small village of Morriston, which had just previously been built to house coalminers and their families and in 1794 only comprised about 140 dwellings.

The railways *would* have pushed their way up the Swansea Valley to Brecon, but this would have been 63 years later when coal was needed in the Midlands. The Swansea Canal was completed 63 years before this - and communities and industry would have developed in quite different ways several decades later.

The world's needs would have changed by then. William Parsons would not have built his ironworks at Ynysderw when he did for lack of good transport, nor his church of St Peters, nor his tinplate works at Pheasant Bush, Trebanos. The Primrose Colliery would probably not have been sunk nor Cwm Nant Llwyd Colliery at Rhos, and the coalfield industry in this valley would have been delayed and would have developed in a different way. Ynysmeudwy Pottery would not have been built. James Palmer Budd would not have erected the Ystalyfera Ironworks from 1838 onwards nor the town of that name that developed as a worker community. The villages up the Swansea Valley that you know and love, from Clydach to Abercraf, Rhos to Rhydyfro, the Twrch villages, may not all exist today, and those that do would be quite, quite different. The people themselves – YOU, even – may not be here. What brought your ancestors to the growing industries, villages and towns would not have been the same and those of you who have only very recently been attracted to the valley, may not have found what you were searching for.

If the Swansea Canal had not been built, the Swansea Valley would have been a completely different place. You all live here now – because the Swansea Canal was built!

The sixteen-mile-long Swansea Canal was constructed by the **Swansea Canal Navigation Company** between 1794-98 using directly employed contract labour, and not skilled contractors as was the normal practice at that time. Charles Roberts, an engineer presented a letter to the Swansea Canal Committee on 15 August 1794 detailing the expenses of making the Swansea Canal. He estimated lockage at £16,515-00, cutting the 16-mile-long canal £7,750-00, bridges £2,250-00, fencing and forming the towpath £1,705-00, land; with a note as very uncertain £3,600-00, aqueducts and culverts £4,606-00, extra cutting and embanking £2,100-00, stop gates and weirs etc £500-00, wharf wall and basin £4,800-00, purchase of house and altering a railway at Swansea £400-00, Act of Parliament and Agency etc £4,500-00, **total £45,720-00**. The actual cost of constructing the Swansea Canal was at a higher cost, which was approximately £55,000. (Harold Pollins, The Journal of Transport History 1954).

To construct the Swansea Canal, Agreements, (contracts), were agreed between the canal company and each successful contractor for each individual stage of the canal construction, with approximately **150 Agreements** required for the canal works (my estimation). The construction of canal began with the cutting of one-mile sections of canal trench, and sixteen such Agreements were given for those works. As an example, Mr Richard Pendrill obtained an Agreement to cut the one-mile of the canal at Pengorof, Ystradgynlais. That Agreement was for the trench for the canal, and foundation excavations for any bridges, locks and culverts. Other contractors had Agreements for constructing the towpath embankment and its masonry works. Individual masons had Agreements to erect the bridges and aqueducts, whilst other masons constructed the locks and culverts. Separate Agreements were let for building lime kilns to provide mortar for the building works, and

for any ironmongery required for lock gate fittings and barrow wheels etc, and for wheelbarrows for moving earth, and timber to construct barrow runs. Different contractors built the reservoirs along the off-bank as water storage for the locks. The canal trench was then puddled using clay to form the lining of the canal bed with flocks of sheep driven up and down over the clay to compress it into a homogenous watertight mass. Approximately fourteen Agreements were signed for the construction of this one-mile section of canal at Pengorof. This gives an indication of the complexity of the canal construction and the different contractors and trades involved. All of this work was overseen by the Swansea Canal Company engineer Mr Sheasby with the assistance of junior engineers, and all works had to be completed to their full satisfaction, or else taken down and rebuilt at the contractor's cost.

The **estimated** number of Agreements for the completion of the Swansea Canal over that four-year period was arrived at by studying numerous documents, such as the Thomas Sheasby Survey of 1793, *Plan of an Intended Navigable Canal from Swansea to Hen Noyadd*, that named estate owners mansion houses, farms, bridges and the very few existing industries along the route of the intended canal. For example, Morris Town (present Morryston), Ynis Forgan (mansion house), Ynis Tawy (mansion house), Ynistanglws (house), Clydach (Forge and mill), Ynispenllwch (mansion house), Ynisderw (Farm), Pont Clydach (bridge), Ynismudw Issa (farm), Ynismudwy Ganol (farm), Yniscedwyn (ironworks), Pengorof (farm), Hen Noyadd (medieval mansion house), and Abercrave Wood. Additionally, George Yates' *Map of Glamorgan 1797* showed the canal completed only as far as Clydach by that date. In addition, the **Swansea Canal Navigation Company Minute Books, General Assembly Books and Canal Toll Books 1794-1875 P.R.O.** **The Great Western Railway Company Swansea Canal Plans c1875. G.W.R. Lock Plans and Bridge Profiles c1880-1990.** Also documents such as *Land Tax Assessments 1772-1808, Tithe Maps and Schedules 1838-40, Ordnance Survey Maps 1876-1920* all provided historical information on the Swansea Valley region in those bygone days.

The survival rate for those 150 Agreements is very poor. Only ten or so surviving to be deposited with the P.R.O. at Kew. I purchased copies of six of those c1994 along with copies of the Swansea Canal Minute Books and Ledgers and Toll Books, and have since deposited those along with a large quantity of other Swansea Canal documents with the W.G.A.S. They are all available for research purposes and provide a wealth of historical information on the construction, operations of the canal, boats, people, structures and industries along the canal corridor.

During the construction of the Swansea Canal, bridges were erected over it for crossings for parish roads, turnpike trusts and national highways, and for farm access, and for industry as that developed. Farm access bridges or over-bridges were constructed along the whole length of the Swansea Canal from the outskirts of the Borough of Swansea to Hen-Noyadd in Breconshire. At least 18 such bridges are shown on the 1793 Sheasby Plan of the Intended Canal Plan between Swansea and Ynysmeudwy, with the farms named. The words Ynls (Ynys) denoting a water meadow, Isaf (lower), Ganol –Ganol (middle), and Icha - Ychaf (upper). This shows the manner of the farm developments in parts of Wales with land owners parcelling out sections of their land desired to be let as farms into the lower, middle and upper farms – resulting in place names and bridge names that survive to the present time.

Estimated number of Agreements required for constructing the Swansea Canal in 1794-98
Canal excavations of one-mile each, 16 Agreements.

Lock construction, 36 Agreements, plus four senior lock-keepers cottages spaced at four-mile intervals with intermediate lock-lock keepers' dwellings in between, such as at Ynysmeudwy.

Aqueducts and bridges, numerous but estimating 35, plus the roving bridge at Morryston which is still extant but without any canal flowing below it.

Limekilns to provide mortar – 15.

Wheelbarrows such as that for Jenkin Rees and William Rees to make 200 wheelbarrows each and

John Watkin to make 100, at least 4.

Numerous culverts under the canal to remove excess water flowing off the adjacent mountain sides. **River weirs** to supply water into the canal, with major structures at Hen-Noyadd (Abercraf), and Pant-teg, (Ystalyfera), and minor water supply structures at Ynysmeudwy, and on the River Twrch and Lower and Upper Clydach Rivers. Large reservoirs were excavated along the length of the canal to provide water for the locks. Approximately 10 Agreements.

A large terminal basin was excavated and constructed at Swansea that provided riverside loading and unloading facilities for the export and import of canal cargoes. At the head of the canal at Hen-Noyadd a terminal basin with attendant wharves, workshops and repair facilities was constructed. Additional dock facilities were created along the length of the canal. Estimated minimum 10 plus constructions.

Office accommodation was constructed on The Strand near the canal basin at Swansea, and a combined canal engineers office and home named Fountains Hall at Pant-teg, Ystalyfera.

Boat yards were constructed for the construction and repair of canal barges at Swansea, Clydach, Pontardawe and Hen-Noyadd, with additional yards added at later periods.

In addition to the known Agreements there would have been many contracts for **quarrying, cutting and dressing of stones** for locks, bridges and other constructions, plus their delivery to the building sites. A number of **quarries** for canal stone are known of, usually as close to the construction site as possible. A large quarry is located to the north of Ynysmeudwy Ganol Bridge and that would have supplied stone for the building of the nearby Ganol farm bridge, for the Cwm Sion culvert, for the stone reinforcing of the canal towpath and embankment, and later for the Waun Coed Branch Canal works. Similar quarries would have been required at approximately one or two mile intervals along the canal corridor, and much closer at locations with a large number of locks and bridges such as the Pantyffynnon flight of locks. Suppliers of sand and lime would also have been a requirement. Lime is mentioned in the Agreement for the construction of Clydach Aqueduct and no doubt would have been used on all other canal constructions. John Hutchins, whom I interviewed when he was the Swansea Canal foreman in the 1980s informed me that when the Pantyffynnon flight of locks were being demolished in the 1960s the breaking of the lime mortar and the removal of stones proved very difficult to carry out.

The construction of the Swansea Canal was a massive engineering project and only completed in four years. An 1801 Report, "Acreage Returns for Wales on agricultural decline", identified Ystradgynlais and Cilybeill parishes; the upper eight miles of canal to the north of what is now Pontardawe, "*as being taken by commercial adventurers monopolizing the lands formerly used under corn, been turned into coal fields, forges, furnaces, and copper works*". That Report emphasises the impact the completion of the Swansea Canal had on the local agricultural base. Industry had now become the dominant factor, yet at that time there was only one **iron works** (manufacturing pig iron) at Ynyscedwyn with just one blast furnace, a number of coal mines, and several small forges on the tributary rivers to refine and forge the pig iron produced at Ynyscedwyn Ironworks. A water powered forge at Ynyspenllwch near Clydach produced malleable iron, wire, and later tinsplate from that iron. The massive expansion of industry and its infrastructure of 140 miles of tramroads connecting the canal with the resources of coal supplies, iron ore, limestone, and manufacturing industries impacted of the whole region establishing the new towns named at the commencement of this article, **and is the real legacy of the Swansea Canal!**

The Agreements were agreed and signed at the *Smiths Arms* in the small village of Llansamlet, which was on the main arterial route between Cardiff and Carmarthen and suitably accessible for any interested masons, builders, contractors etc. The public house is still extant in 2021, though much altered since 1794. However, a photograph does exist of the public house taken

c1870, in the ownership of the Llansamlet Historical Society, with a copy now deposited with the WGAS.

The Agreements are quite extensive and cover all exigencies of construction work. For example, the Agreement for Clydach Aqueduct constructed over the Lower Clydach River consists of four pages of building instructions P.R.O. Rail 876/876 31. They detail how the mason Roger Pearce was to carry out that work. It stated that *“he shall and will well and truly erect and build or cause to be erected and built in a good substantial and workmanlike manner an aqueduct for conveying the said Canal over a Brook near Clydach agreeable to the direction and to the satisfaction of the Engineer to the said Company of Proprietors. The facing stones of the Piers to be jointed in the Bed with a good straight hammered joint, and the Piers to be filled with flat square stones only, and no pebbles to be used in any part of the work. The joints of the stones to be squared with a good scalped joint, all the stones in the Arches to be eighteen inches in the bed, to have at least a fifteen inch joint and to be tooled straight and flat, the mortar for the facing to be the best face mortar with a due proportion of sand, the mortar for Backing to be of a common sort with a larger proportion of Sand, the whole to be sifted Lime and Sand together before any water be applied thereto unless slacking the Lime, and afterwards to be beaten together in such manner as the Engineer shall direct. In all cases the walls shall be three feet thick and upward every other course to be well grouted with Lime and Sand; The parapet and Towing path to have piers through them at every five feet in length in the walls and each Pier and Abutment to have piers of stone in each course every five feet. The Arches to be well formed in setting each course of masonry and when turned to be well grouted all over. The joints of the Face Walls to be jointed after they are built in case the Engineer shall it deem it proper; and in case the said Work or part thereof shall not be to the satisfaction of the said Engineer, it shall and may be lawfull for the said Engineer to cause the same to be pulled down and rebuilt in a proper manner at the expense, cost and charges of the said Roger Pearce”.*

Roger Pearce was a qualified mason who constructed an aqueduct over the Lower Clydach River, named as Brook in his Agreement. That it still stands today, and is still carrying water is testament to his engineering and masonry skills, yet he could not sign his name? He placed a finger print to indicate his approval of the terms and conditions of the work he was to carry out.

Of interest are the wages paid to Swansea Canal Company employees in the period 1820-30, only 20 years after the construction of the canal and this gives an indication of the wages paid to the canal navigators on 1794-98. These wages were abstracted from the Company Minute Books.

Masons and Carpenters 21 shillings per week.	Master carpenter 30 shillings per week.
Sawyer 16 shillings per week.	Clerks 20 shillings per week.
Book keeper 40 shillings per week.	Toll Collector 18 shillings per week.
Lock Keepers 16 shillings per week plus a house.	Mole catcher 15 shillings per week.
Engineers and Superintendent £200 per year plus a horse and £20 for the keep of the horse.	

One can now have an understanding of the vastness of the construction project that was the Swansea Canal and of the types of persons that were to be employed on it.

Clive Reed 2022.