

INDUSTRIAL ARCHAEOLOGY IN TASMANIA

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Early in 1977 I was fortunate enough to be invited to spend a holiday with relatives in Tasmania in the small town of Exeter near the north coast of the State and virtually on the west bank of the Tamar River.

Perhaps a short description of the Island State would be helpful in appreciating the setting in which Industrial Archaeology is slowly emerging in a country so far removed from the centre of the Industrial Revolution.

Tasmania, the Island State of the Australian Commonwealth, is about the same area as Scotland, and has a population of approximately 400,000. About half the population is centred in the two capital cities of Hobart, (the centre of state government) and Launston, (the old, once capital, city of the island when it had its own governor) and about three smaller towns on the north coast, and two in the south and west provinces; the rest of the population being scattered over the island in small settlements and municipalities.

The climate is cool and temperate, very like England, and one of the most striking things about the country, due to its climate, is its similarity to the English countryside.

Physical conditions over the island are varied with hills and mountains predominating the scene, the twelve highest mountains have altitudes between 1618 to 1445 Metres. Dense bush still

covers a major part of the islands surface, and together with the many small rivers, lakes, and mountain ranges makes surface communication very difficult and road building expensive.

Primary industries are rural, (agriculture, livestock, and horticultural) forestry, and mining (zinc, tin, iron, copper, tungsten, lead, silver and gold).

Manufacturing industries are now the dominant sector of the states economy, the largest manufacturing industries are based on paper production, basic metal products, processed foods, wood products, and textiles. The industrial expansion of the islands industries being mainly due to the low cost of hydro-electric power (there being only one small thermal power station on the island, oil fired), abundant water resources, new materials, reliable work force, deep water ports, and relatively low cost industrial land.

Most important of all are the very friendly and hardworking people, who give the impression that they are the most important element in Tasmania and that the country is really their own.

Visitors arriving from England are usually regarded as sources of interest and we were no exception; it was during one of the many 'meet the folks' gatherings, that the words 'Industrial Archaeology' came to be spoken, and once it was realized that I had more than a passing interest in the subject, invitations began to flow - to come and see this item of machinery, visit this museum, come and see the watermill etc: finally could I give advice on starting an Industrial Archaeology Society in one of the municipalities.

This last invitation came from the Chairman of the Beaconsfield Museum Committee, to address his committee on how we organize such a society in England.

When we met the committee I made it clear that I was no qualified expert on these matters, but I should be delighted to tell them of my experiences with the Gloucestershire Industrial Archaeology Society, and to recall such information as I had gathered from books on the subject. The Committee was attracted to the ideas put into practice at Coalbrookdale and they thought that such a scheme would fit their environment and industries quite well, and would I send them more information.

It is not possible to describe all the items I saw in my short visit, and I make no attempt to set them down in any particular order in relation to industries; only to describe them as I saw them and add any detailed information I was able to collect at the time. Little did I guess that I should be asked to write about what I had seen, otherwise I should have collected more technical information.

GOLD

In the year 1877 a very rich quartz reef was discovered at

Brandy Creek by Mr W Dally and from that time until 1914, when the goldfield was closed, Beaconsfield was the centre of a very prosperous gold mining community, over 854,000 ozs of fine gold being extracted, having a total value of £3,500,000, with gold at the then price of £4.4.11.

By the year 1881 there were a total of 56 companies with claims on this Beaconsfield gold field, where field land sale lots sold for £500, and the population had risen from 1,500 to become the third largest mining area in the State. Brandy Creek was situated at the foot of Cabbage Tree Hill, about two miles from the estuary of the river Tamar, with only a track for communication between towns, but near enough to the river to use it as a means of supply and communication.

Janet Kerrison's "History of the Beaconsfield Gold Fields" contains many examples of the changing fortunes of individual miners, owners of land, and mining companies, over this initial period. The inhabitants of Brandy Creek gold field felt that such an important area was poorly named, and in 1879 during a visit of the island's Governor Weld, he named the area Beaconsfield after the Prime Minister of England.

By the end of 1881 Beaconsfield had a registrar of births, deaths and marriages, and had a public (State) school, and telegraphic communication with the rest of the Colony.

The most successful mining company to emerge from the many owners of claims and mines was the Tasmanian Gold Mine and Quartz Company, who employed about half the number of miners on the field. The £5 shares of the company were worth £82 in 1881 and they paid regular dividends each month amounting to £144,000 equal to £48 per share.

This mine was of central importance to the community and the manager Mr Joseph Davies one of the most influential men on the field. From the beginning water was the main problem on the Beaconsfield gold field, because of the close proximity of limestone to the gold bearing reef, water in very large quantities drained into every mine shaft that was sunk on the reef.

At that time there were no drainage regulations in force to make the mining companies take their water discharge away from the mining area, thus preventing it from finding its way into the workings of mines lower down the reef. One by one the badly placed mines gave up to expensive battle against the water problem, until only the Tasmanian Gold Mining and Quartz Company was left in operation. This was because their workings were higher up the reef and worked through a tunnel in the hillside. While working was at the higher levels the mine was very profitable, more expansion took place in the form of sinking shafts, tramways and crushing batteries. This fine state of affairs lasted until 1884 when water became the main difficulty in working the mine, over 40,000 gallons of water being raised per hour. It was soon realised that if mining of the reef below 400ft was contemplated

drastic action would need to be taken to control the water. The services of Dr. Jas. R.N. Robertson M.E.F.G.S of Sydney were obtained to inspect the locality and advise on the water problem. The advice of this retired Indian Army Surgeon was very sound. He found that the pumping equipment was working in excess of its safety limit and raising over 2,90,000 gallons of water per 24 hrs, and still the mines were periodically flooded. He recommended that a nearby creek be diverted and carried by fluming over the soakage area, as should all other surface water, before it had time to soak into the ground. It was then decided to sink a new shaft to a depth of 1000ft and obtain additional pumping plant. This shaft was 18'0" long by 8'0" wide divided into four compartments, one for pumping, two for winding, and one for manway.

In January 1890 pumping machinery to lift 4,000,000 gallons of water per 24 hrs was ordered and work began on the foundations at the mine. By June 1901 the whole pumping machinery had arrived (weight 300 tons), the engine and boiler house completed and the installation of the plant put in hand. In March 1902 the new machinery started.

The engine was a compound condenser tandem type by Harvey & Co. of Hayle, Cornwall (England) with a high pressure cylinder of 45 inches and a low pressure cylinder of 72 inches diameter with a 10' stroke, steam pressure of 70 P.S.I.G. Four Galloway boilers 26' long 7'6" in diameter, were connected to the steam engine, which drove two coupled plunger pumps 24 " in diameter at 6 strokes per minute, discharging 136,800 gallons of water per hour.

This new plant cost £35,739. 3.4. but made great savings in running costs of the mine by replacing four pumping engines and eleven boilers.

In 1895 a new Luhrig concentrating plant was erected, and the water from the mine reservoir used to drive water engines and a Pelton wheel to drive a dynamo to light the new plant. In that year 150 stamper heads were at work crushing 229,000 tons of ore to yield 371,408 ozs of gold.

Despite the influx of new capital especially from England, and the sinking of another deeper new shaft, together with the purchase of more and more pumping equipment, water at 9,000,000 G.P per 24 hrs was still the main problem in the operation of the mines, and on November 21st 1914 it was decided to close the mine after 37 years of life.

It is worth noting a remark made in 1905 by the visiting chairman of the directors A.Hoffung who exclaimed that he was overwhelmed by the stupendous character of the surface work, roomy substantial buildings, extensive offices and modern up-to-date appliances. The mine superintendant assured him the Company would be glad of them as time went on.

That time never came; substantial remains of the three large

buildings mentioned above remain 57 years later roofless and overgrown with climbers.

The offices mentioned above are now the offices of the Beaconsfield Municipality, where the photographs of past mine officials look down from the walls of the boardroom, now the council chamber.

Suppliers of Pumping Machinery, Boilers etc.
Harvey & Co. Hayle, Cornwall, England.
Hathorn-Davey, England.
Babcock & Wilcox, Scotland.

RAILWAYS

Because of the uncompromising nature of the country's hills, mountains and rivers, the planning and laying of the railways involves a study of its own. I saw that part of the system built to serve the North West and Central West mining areas; some of the difficulties which the engineers met and overcame were quite exceptional. The town of Zeehan is well known for its place in mining history. It is called after a nearby mountain which in turn bears the name of one of Abel Janszoon's Tasman ships, which he used in his voyage of discovery, when he made the first land fall of the west coast of Tasmania.

Zeehan was a town of 10,000 inhabitants at the turn of the century during the silver-lead boom; now there are barely 600 people. During that time a lot of money and effort was spent around this town in building railways to serve the many mines.

Without giving a detailed account of the many mining companies who built railways to take their ores to the harbours on the west coast, and bring back supplies to their mines, it will be sufficient to say that the town of Zeehan has a fine collection of steam locomotives in a permanent exhibition and housed near the old School of Mines building, now renamed the West Coast Pioneers Memorial Museum. These locomotives were all in use on the various mining companies rail systems, being selected for the specialized duties they had to perform. There is a locomotive from the Mount Lyell Mining Company Abt railway complete with a section of cast iron rack. On display is the first electric mining haulage locomotive, of Italian manufacture, used in an all electric mine. Pride of place goes to the Managers private carriage of the EMU Railway which is more or less a mini bus mounted on railway wheels, the engine driving the front wheels. The carriage is in perfect condition and the vehicle was permitted to run on any of the countries rail systems.

It is interesting to note that the first railroad or tram way was laid with wooden rails, and ran a distance of 5 miles near Hobart, the carriage was propelled by a team of four shackled convicts.

ROAD TRANSPORT

From earliest settlement times road transport was very important,

beginning with Pack Horse, Bullock Carts, Sledges, and Horse Wagons to the present time.

I was shown a number of collections of road vehicles of all types and ages. One such collection included -
 Stanley Steam Car, with spare engines.
 Ford T open Tourer.
 Citroen 1922.
 S.C.A.T. 1921.
 Indean Motor Cycle 1900.
 Harley Motor Cycle 1930.
 Dodge Fire Engine 1935 in full working order.

Another collection consisted of -
 Six Fordson Ploughing Steam Engines in working order.
 An early Crossley D Farm Tractor.
 Leyland Lorry 1930.

Farm Vehicles

American Eclipse, Steam engine and boiler used for threshing.
 Wooden, full sized thresher in perfect condition.
 Wooden fruit grader,
 Farm carts of all shapes and sizes.

Other Industrial Items

Various steam engines from Sawmills, mines and quarries. Mine pumps. Machine toolshapers, drilling machines etc.

All the owners of these items are anxious that they should be collected and housed at a central point within the area, together with their numerous records.

HOUSING

The early housing unit appears to copy a type of dwelling used in America by early settlers about the year 1619, (See Proceedings of the Bristol & Gloucester Archaeological Society Vol XCIV 1976 page 8) that is a simple hut 25ft X 18ft by 12ft high, having a central door and two windows in each long side, with a hole in one gable end to accomodate the fire place of a stone hearth and chimney built on the outside from ground to ridge.

The Beaconsfield Council have already obtained one of these early settler's houses and sited it on an area near the old gold mine buildings. The local Rotary Club in 1974 reconditioned the building and fitted it with the furniture of its period.

WATERMILLS

Andrew Gatenby of Yorkshire and later of Wales settled at Barton in Tasmania in 1823. With the help of his four sons, a wheelwright, a millwright, a blacksmith and one convict labourer, he cleared a site, dug a two mile long mill race, and constructed and operated a cornmill on the banks of nearby Penny Royal Creek in thirteen months.

In 1840 a second cornmill was constructed alongside the existing wooden cornmill of 1823, this mill being driven by an undershot waterwheel from water in the Penny Royal Creek; the stonebuilt watermill has an overshot wheel.

From 1972 to 1976 a private business group dismantled both mills and reerected them in Paterson Street, Launceston. The wooden mill is completely restored and all parts in a working condition, using as much of the original parts and material as survived, including the two pairs of the original French Burr Stones.

All the driving gear in both mills are of wood, spur wheels (9'.6") cog and bevel wheels, and shafting. This wooden mill has a Crown Wheel Sack hoist, together with two other hoists. Housed in the wooden cornmill were separate wheelwright and millwright workshops, and quarters for the miller. A good collection of wheels, and other parts including tools, stone dressers and specialised equipment are in these two workshops, while the millers quarters have been completely refurnished with the furniture of its day.

The stone built cornmill was dismantled stone by stone and moved to its present site, restored in a similar manner to the wooden cornmill.

CONCLUSION

There is an atmosphere of urgency amongst all the people I spoke to, to preserve evidence of past industrial effort on the part of early settlers, and the Municipality of Beaconsfield seems to recognise this; there are plans for converting one of the old gold mine engine houses into a museum. They also hope to create an area in front of these buildings on the lines of a Folk Museum. I did, however point out that while they look for old items of industry they should not forget to record, and preserve in selected instances industrial units of their own day which will eventually become Industrial Archaeology.



PENNY ROYAL WATERMILL AND JOLLY MILLER