



## Appreciating Hayle: a little historical background

*Principal Sources:*

- 1 Hayle Historical Assessment**  
*Nick Cahill and the Cornwall Archaeology Unit, 2000*
- 2 Hayle Town Trail**  
*Brian Sullivan, 1983*
- 3 The Harveys of Hayle:  
engine builders, shipwrights and merchants of Cornwall**  
*Edmund Vale, 1966*
- 4 CCC: the history of the Cornish Copper Company**  
*W H Pascoe, 1981*

### Hayle's World Significance

Hayle may appear to be an unremarkable town behind a beautiful bay of golden sands and surf. But taking a little time to understand it offers an insight into an historic industrial port and town of global significance.

### Cornwall's Technology and its World Heritage Site

Winning Cornwall's mineral wealth stimulated a global industrial technology, with sophisticated mine drainage systems powered by ever more efficient steam driven pumping engines designed and built here in the town. Hayle's mining technology was synonymous with innovation, quality and reliability: this is why Hayle's industrial heritage is an important part of Cornwall's industrial heritage; and why Cornwall's industrial heritage is a crucial part of the world's industrial heritage.

Evidence of Cousin Jack and Cornish engineering can be found in mining communities all over the world, including places as far away as Mexico, Peru, South Africa and Australia. Visitors from all over the world may recognise Cornish pumping and winding engines and their engine houses from examples exported with Cornish miners, expertise and equipment. Now Hayle's industrial infrastructure has been included in the Cornwall and West Devon Mining Landscape - inscribed as a World Heritage Site on 13 June 2006.

For detailed information about the Cornish Mining WHS please visit the dedicated web site (<http://www.cornish-mining.org.uk>).

## **The Hayle Estuary, Minerals & Trade**

The Hayle estuary has provided a safe harbour and focus for settlement since prehistory. The Iron Age hill fort at Carnsew and a small Roman fort on the site of Lelant churchyard controlled access to the estuary for hundreds of years. The estuary was home to important international tin trading in the 5<sup>th</sup>-7<sup>th</sup> centuries that probably helped spread Christianity. Trade in mediaeval times produced a network of quays around the estuary serviced by roads to the waterside, causeways across the mud flats and a ferry across the estuary mouth. Tin streaming was a major industry by the 1530s, Leland noting in his travels that it had been responsible for clogging the estuary up to St Erth, requiring a new port at the estuary mouth.

### **Industrial Development: the 18<sup>th</sup> century onwards**

Mining of tin and copper in west Cornwall drove the area's industrial development and the growth of hamlets bordering the estuary from the 18<sup>th</sup> century. The large scale of the estuary, its proximity to mines and easy access to Welsh coal, Welsh smelters and the great trading centre of Bristol made it an ideal trading port, the economic success of winning and exporting the minerals eventually and consequentially developing food production and milling into major local industries too.

The elaborate network of

surviving Georgian and Victorian quays, holding pools, canal, floating dock and sluices was begun in the 1740s, with John "Merchant" Curnow's Quay surviving from that date. Modern Hayle began with a large copper smelter at Penpol set up by Gideon Cosier of Perranzabuloe between 1710 and 1735. This was followed in the mid-18<sup>th</sup> century by the construction of a copper smelter near Angarrack by the Cornish Copper Company (after which Copperhouse came to be known) and later, in 1779, by blacksmith John Harvey from Carnhell Green who set up a small iron foundry and engineering works at Carnsew (Harvey & Co, after whose works Foundry came to be known). As time went by, the two firms with their different business structures - the Cornish Copper Company being shareholder based and Harvey & Co being family based – developed very differently in terms of their character and operation. Evidence that their different company styles strongly influenced the town's physical development is left imprinted on the two separate and distinctive company settlements that grew up around their respective bases. Indeed, modern Hayle can really only be understood in these terms.

### **A Tale of Two Sites**

The two firms grew rapidly as traders and engineers servicing the expanding mining industry, and so did the competition between them for access to the waterside hards and

bustling quays. Harvey & Co and the Cornish Copper Co were both heavily involved in mining as major shareholders and as suppliers of equipment and materials in the 19<sup>th</sup> century with the ever-increasing need for quayside space to facilitate the import of timber, rope and other materials for the mines and the export of the mined ores, mining machinery and, eventually, foodstuffs. The intensity of the rivalry between the firms served to divide the communities they supported, the work forces famously becoming engaged in a pitched battle at Penpol as Harveys' men were sent to dig a navigation channel to their quay in 1818-1819 while the Copperhouse men were sent to fill it back in, at least in part to preserve the tidal ford to Lelant that is now blocked by the northern end of Penpol Quay. As economic circumstances changed, the copper company turned to ironwork and mining machinery (Sandys, Carne & Vivian) in direct competition with Harvey and Co, both companies introducing steam powered engines to drain and exploit ever deeper mines and culminating in each eventually making one of the world's largest pair of pumps to drain the Harlemmermeer in Holland. Clifton Terrace commemorates Sandys, Carne and Vivian's winning the contract to provide Brunel with chains for the Bristol suspension bridge; Brunel is said to have tested their prototype and praised their skill and workmanship.

Harvey & Co, for their part, worked with the great engineers Richard Trevithick, William West and, later on, Arthur Woolf to help create Cornwall's unrivalled engineering expertise, and to expand the company's interest from basic mining tools into iron founding, mine engines and shipbuilding before it dwindled away as it's then cutting edge technology was superseded in the 20<sup>th</sup> century. Richard Trevithick married into the Harvey family but, oddly enough, it was his absence abroad that affected the appearance of Foundry – two White Hart Hotels!

### **The Two Companies**

The Cornish Copper Company was constituted in 1755 as a rolling 21 year partnership of leading entrepreneurs and moved to Angarrack in 1757. The company was smelting copper from the mid 18<sup>th</sup> century to around 1810 and was recycling its smelter slag - called scoria - by casting it into large building blocks with which it constructed its quays and the dock at Copperhouse. It was the only company in Cornwall ever to smelt copper in large quantities but eventually it became a general foundry building Cornish beam engines. The firm enjoyed over a century of progress and development of the area which became known as Copperhouse after the business, but now the canal and dock are the most prominent remains of the company's industrial archaeological heritage. It paid its workers in money which accounts for

the purpose-built shops lining the streets of Copperhouse and the presence of public houses there; its social and business attitudes are also reflected in its laying out of building plots in the tightly knit area around St Johns Street and Cross Street for its workers' housing and the provision of scoria blocks for building them. In contrast, Harvey & Co was a family business that looked first to its own, and the grand houses of the family and directors can be found in Millpond Avenue overlooking the mill pond and further up Foundry Hill. Their provision of accommodation for their workforce was much less and more closely targeted, for example, the attractive little row of houses known as Drovers' Row housing the heavy horse drovers from the foundry farm. Similarly, there were no shops or public houses. The late development of shops in the Foundry area reflects the early 19<sup>th</sup> century dominance of Harvey's own Emporium in Foundry Square. At the time, Harvey & Co appear to have been able to constrain independent retail development in Foundry – perhaps by paying its workforce in company scrip - and so the only shop was the Harvey Emporium (Barclay's Bank and Foundry House). It was only in the 1870s, after the company's influence and prosperity had peaked and its grip on the local economy was weaker, that shops were built in the only available spaces – the front gardens of properties in Chapel Terrace and Penpol Road over which

the Harveys had no control. Penpol, where the first recorded industry started, has a number of late 19<sup>th</sup> and early 20<sup>th</sup> century structures – St Elwyn's Church, the Drill Hall, the Passmore Edwards Institute and the War Memorial - that were clearly intended to bridge the neutral ground between the two company settlements and help heal the social rifts between their communities.

### **Quays and hydrology**

The estuary is fed by several sources, notably the Hayle and Penpol Rivers, the Angarrack stream from the east and a couple more streams running off Lelant Downs to the west. The Hayle Estuary is a huge, relatively shallow complex with a good tidal range: an enormous volume of water passes quickly in and out of the mouth of the estuary with each tide, constantly shifting the sandbar's depth and location and requiring periodic dredging. More evidence survives of the earliest stages of industrial growth in Hayle than has previously been thought. At Penpol and Rivière, alongside and behind the later 18<sup>th</sup> century facing of scoria blocks and timber screening, are John 'Merchant' Curnow's quays of around 1740, while the stone quay walls of Carnsew Quay built in 1758 are still visible despite being partly buried in 20<sup>th</sup> century fill. The latter quay was not completely rebuilt in 1834 with the formation of Carnsew Pool - the earlier, most northerly section survives in the later work but has been cut through and

partly altered by the sluices constructed to managing the flushing of silt and sand from Harveys' deep-water channel. The waterside complex built by the Cornish Copper Co in 1768/9 survives in large measure on land reclaimed using crushed slag (scoria) from the smelter or enclosed by cast scoria blocks. The group includes the (floating) dock with the remains of its wooden gates, wharves and a canal to deep water. The canal bank of crushed scoria is still marked with some mooring posts, while the dock is a well made structure of cast scoria blocks, its walls scalloped to accommodate boats. Like Carnsew Pool, Copperhouse Pool also provided the Cornish Copper Co with a holding pool for sluicing silt from its deep-water channel. Quays also survive in the wider estuary - Lelant Station Hill Quay, Lelant Green Lane Quay and Lelant Quay also known as Dynamite Quay. Grigg's Quay, with some associated buildings, shows two phases of construction, the earlier of granite and the later of cast scoria blocks.

### **Railways**

In 1758 between 500 and 1000 mules and packhorses a day were usually to be seen at Hayle, transporting supplies inland to the mines and returning laden with copper ore. The scale of the transport problem and its intimate link with the mining industry is reflected in the early establishment of a railway in Hayle. The Act for the Hayle

Railway was passed in 1834, and the line was opened in 1837 with its terminus just south of the viaduct in Foundry Square. The route was from Hayle to Redruth, with branches to Portreath, Crofty Mine, North Roskear Mine and Tresavean. In 1843 the first regular passenger service was begun between Hayle and Redruth. A new branch of the railway was extended in 1852 from the new West Cornwall Railway station and goods yard east of the Foundry viaduct at Penpol to various works on the south west side of Hayle Towans along North Quay. This link was made necessary by the re-routing of the main line by-passing the Rivière route of the old Hayle Railway, the wharf-side rail system of which was maintained and improved. Quay Branch Overbridge was built in 1852 for the West Cornwall Railway and is constructed from granite and iron. Branching from former safety points at one side and sloping up to the embankment is a ramp designed to decelerate any train that went out of control. This is thought to be the first example of its kind in England. Various sections of the old railway system survive together with some evidence of the extensive network of rails and tramlines on the quays, especially on North Quay and East Quay together with, perhaps, some areas of paving on South Quay. Although the main and branch lines used steam engines, the Penpol Quays system used horsepower for shunting right up till it closed in 1963.

## Three Trails: introducing Hayle's Industrial Heritage

These three trails can provide only a brief introduction to the surviving physical evidence of Hayle's important past as a major driver of the industrial revolution. This composite town of two remarkable settlements is known by the knowledgeable for its heritage of world leading expertise in mining technology and cutting-edge heavy engineering.

**Trail 1      Foundry Square and the Quays**

**Trail 2      Harvey's Foundry and Carnsew**

**Trail 3      Penpol and Copperhouse**

