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## Delve Deeper

# Charlestown: Perfect port for travelling back in time

Luxulyan  
Valley &  
Charlestown

If you wish to delve deeper into the history of Charlestown's links with Cornish Mining then this short guide will provide you with more information.

Charlestown is the oldest china clay port in the world, and one of the best preserved. Little changed since it was built by Charles Rashleigh some 200 years ago. It gives a fascinating insight into the times of the copper and china clay boom in Cornwall.

Charlestown is a town within one of the ten areas of the Cornish Mining World Heritage Site. It is deemed to be of global significance through its links with mining and the export of copper ores in the late 18th and 19th centuries.

Until relatively recently, Charlestown had been managed as a single estate, which is one of the reasons why its built environment is so very well preserved.

## THE CHINA CLAY INDUSTRY

Charlestown Harbour owes its survival to the china clay industry which was centred on the Hensbarrow Beacon, north west of St Austell. Around 290 to 270 million years ago, granite formed in the rocks under Cornwall and Devon and, in doing so, created the origins of china clay. China clay is essentially decomposed granite, formed when the white feldspar crystals in the rock are chemically altered to the mineral kaolinite, a fine white powder.



Kaolin

The china clay industry expanded rapidly during the late 1800s. Its main use initially was to make fine pottery, but its use soon spread to paper, cotton goods, paints, medicines, cosmetics and many other uses.

### Porcelain – what's the secret?

In China, kaolin had been used for centuries to create a fine type of pottery called porcelain. Since the 1600s, European potters had been attempting to discover the secrets of China's porcelain, but all early attempts failed.

## The answer – Cornish china clay

China clay had been used in Cornwall for a long time to repair smelting furnaces. But its potential for porcelain was discovered in the 1740s by chemist, William Cookworthy. He produced porcelain from china clay he found at Tregonning Hill near Helston. Soon the potters of Staffordshire, led by Josiah Wedgwood, were taking an interest in china clay and Wedgwood is thought to have considered buying a factory at Charlestown for a time.

Entrepreneurs in St Austell were quick to realise that although profits from china clay weren't as high as from copper and tin mining, they were steady and assured. By 1858 there were 42 Cornish companies producing about 65,000 tons of china clay a year.



## A slow process

The china clay production process initially involved clay-bearing rock being exposed and then washed with a diverted stream of water, to separate the lighter fine clay particles from the heavier waste sand and mica. The clay slurry was then channelled or pumped to shallow pans lined with granite to allow this to settle. Water was gradually drained off and the slurry was thickened. Then it was cut into blocks and stacked in 'air dries' where it was left for up to eight months to dry. When sufficiently dry, the clay as powder was packed into wooden casks for shipment.

## Clay industry speeds up

As the demand for china clay grew, producers struggled to increase their outputs due to the slow drying process. From 1820, local business people or 'adventurers' began looking for ways to improve production.

By 1845, the first pan-kilns – or dries – were being built to dry the clay artificially. These buildings had a furnace at one end and a chimney stack at the other. They were connected by a series of brick flues which ran beneath a tiled floor. The thick clay slurry was spread over the floor to an even thickness and left to dry. Pan kilns soon became an integral part of the local landscape.

## Transport – railways and pipeways

Transport for the mining and china clay industries improved considerably with the opening of the Cornwall Railway in 1859, which came close to the china clay district of St Austell. Later, from 1872–1874, a new network of rails was laid out known as the Cornwall Minerals Railway.

But not all the china clay pits had a direct connection to the railways. Pipelines were laid to move the slurry directly from the pits to the pan kilns which were being sited at or near rail sidings or ports. From the 1880s, almost all of the pits were connected to the pan kilns via hundreds of miles of pipelines.

## THE RISE OF CHARLESTOWN

Charlestown was a planned settlement, designed to meet the growing transport needs of the mining boom in the St Austell area. It was the vision of one man, Charles Rashleigh.



Charles Rashleigh

## Beaching at Polmear Cove

Before the harbour was built, the mines of St Austell were already using the sheltered beach of Polmear Cove. The practice was to run ships onto the beach at high tide, load or unload them when the tide fell, then sail off on the next tide. Such methods were inconvenient and often dangerous, especially in gales when many boats and lives were lost.

## Charles Rashleigh's vision

When local landowner Charles Rashleigh acquired Polmear, he quickly recognised the income opportunities offered by facilitating the export of copper ores and china clay from the many producers in the area. The nearby mines and china clay pits desperately needed a safe port – and Polmear was ideally located. Rashleigh began planning the port and village which was soon to be named after him – Charles' Town.

The work was done in several stages beginning in 1790. First to be completed was the pier, followed by excavation of the outer basin. Then in 1798, the inner basin was excavated. This was a major engineering project, requiring extensive quarrying of the hillside – and most of the work was done by hand.

A gun battery was built on Crinnis Head to defend the harbour in 1793. A battery was necessary for all ports during the Napoleonic Wars to deter invasion and protect ships.

## John Smeaton's leat

John Smeaton, the foremost engineer of the day, was involved in the design of the harbour. One of his great challenges was to provide a water supply to sustain the depth in the dock and keep the basins clear of silt.

There was no suitable water supply in Polmear, so Smeaton designed a seven mile leat that ran all the way from the Luxulyan Valley. The water from the leat was used to top up the basin and flush out silt from the harbour. It also powered other machines including a water wheel, stone crushing plant and bellows. The leat and its reservoirs still survive (audio track 6).

## A bustling harbour

Charlestown was the first port to serve the mines of the St Austell area. Copper ore was exported to south Wales for smelting, and coal imported to power the engines of the various mines. China clay was shipped to the potteries of the Midlands.

The china clay was transported from the 'dries' in and around St Austell to Charlestown in horse drawn wagons. The approach to the port, known as Great Charlestown Road, was and still is the widest approach to any town or village in Cornwall (audio track 8).

Two clay dries were built in Charlestown in the early 1900s. Clay was pumped into the dries as slurry from Carclaze pit, north of St Austell. The dried clay was then transported along an underground tramway which led to the harbour. Then it was tipped down chutes directly onto the ship's hold (audio track 3).

Charles Rashleigh also built cottages in the village to support the growing workforce. In 1790 the population of Polmear Cove was just nine fishermen and their families. By 1801 it was 300, and by the 1860s it had grown to 3,000.

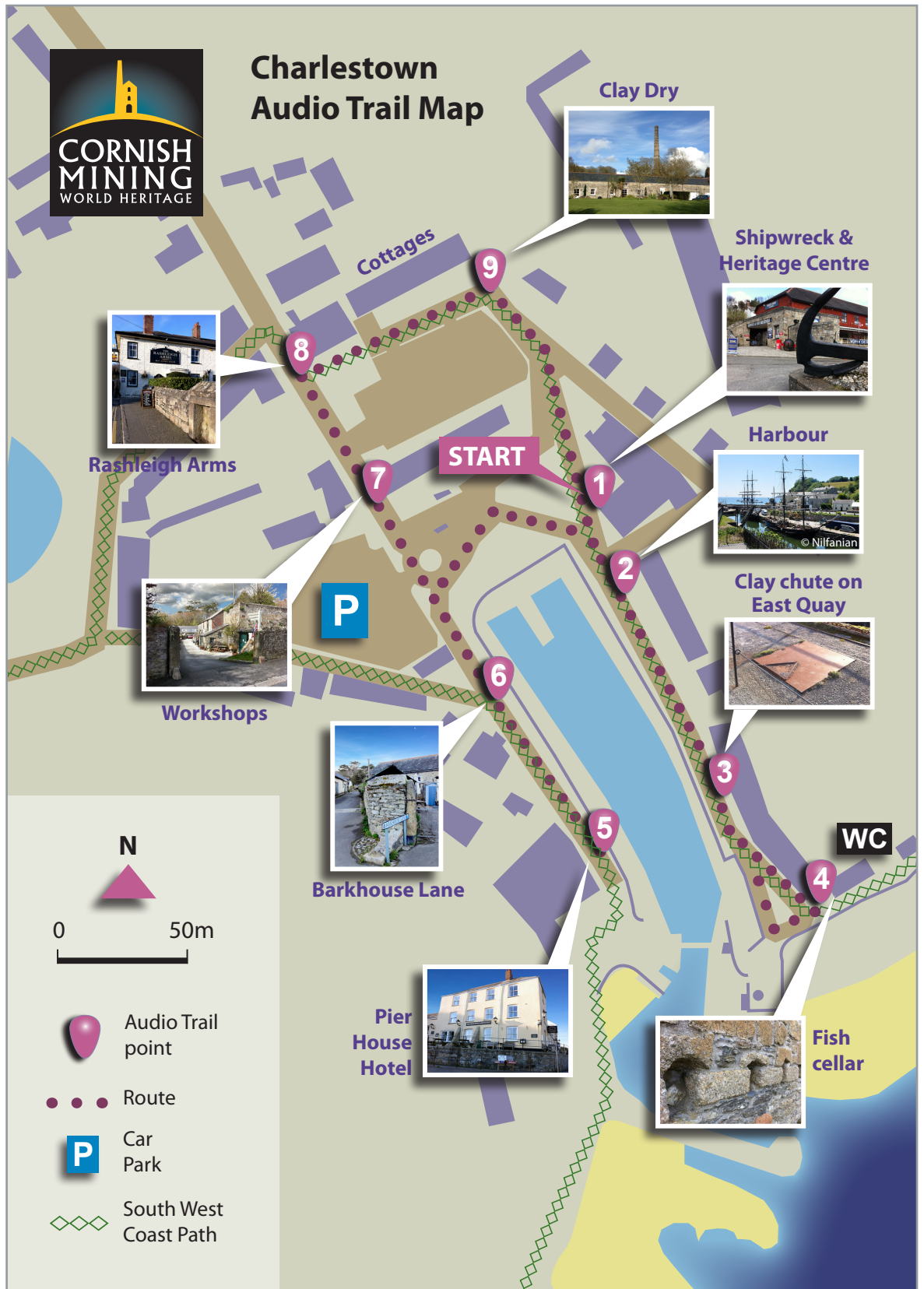


Last remaining clay chute. Photo: Audio Trails

## AFTER THE BOOM – DIRTY HARBOUR TO TOURIST TOWN

### China clay saves the day

By the time of the copper boom in the early 19th century, Rashleigh had run out of money to improve the harbour. Its narrow entrance and dog leg turn into the basin limited the size of ships that could be accommodated. But despite competition from newer ports such as Pentewan and Par, Charlestown was sustained by the growth of the china clay industry.



## Charles Rashleigh dies penniless

Charles Rashleigh died in 1823. In spite of his business acumen, he managed to lose much of his money to rogue servants. One was Joseph Dingle who worked for Rashleigh as a servant and footman, then later became superintendent for the construction of the port. He deliberately



withheld rents, dock money and port dues from his employer, embezzling around £32,000 – a fortune in those days.

The loss of such a huge sum contributed to Rashleigh's financial downfall, and he died almost penniless in 1823. On his death, the estate became the property of his main creditors, the Crowder family who remained landholders until 1986.

## Dwindling trade and neglect

The Cornish clay industry declined as more easily worked deposits were found in Brazil. This, together with competition from the railways and the increasing size of ships, resulted in Charlestown saying goodbye to its last clay boat in 1999.

Charlestown is now predominantly a residential seaside settlement and holiday centre.

Although a great deal has been lost over the last two centuries, much of its history has remained. An extract in the 'Charlestown Historical and Archaeological Assessment' says:

*'It is one of the best examples of late 18th century and early 19th century harbour works in Britain... Nowhere else in Cornwall is it possible to step so immediately into the ambience of an early 19th century working port.'*

## Tall ships and tourism

In the 1990s, the company 'Square Sail' bought the harbour to house its fleet of tall ships. These vessels have become a popular attraction, encouraging tourists as well as film and television companies.



Harbour with tall ships. Photo: Nilfanian

## OTHER INDUSTRIES IN CHARLESTOWN

### Pilchard fishing

Pilchards were a cheap and nutritious food, and once a main industry in Cornwall. Charlestown had three pilchard cellars, named Rashleigh, Friends' Endeavour and Content (audio track 4). A fleet of seine boats was moored in the outer basin in the summer, and as many as a million pilchards could be caught each trip. But overfishing diminished the stocks from the 1880s.



Pilchard Bulking in a Cornish village. Photo: Cornwall Centre Collection

### Shipbuilding

From 1792 until 1875, the top end of the dock was used for shipbuilding and repairs. The basin was smaller then, and the shipwright's workshops were on a long earth and stone ramp. Over 30 ships of different sizes were built in Charlestown, some of them up to 500 tons.

## Foundry

Charlestown Foundry was established in 1827. Initially it produced specialist equipment for the mining industry, including engines. After the collapse of local mining fortunes from the 1870s, the company turned to the china clay industry as its principal customer. While no longer in operation and redeveloped for housing, the foundry site still retains its impressive historic frontage and key buildings.

## Smelting houses

The wider area around the village once contained a vast tin and copper mining industry. Charlestown had one smelting house for tin, where this metal was extracted from the tin ores through exposure to high temperatures in an oxygen depleted atmosphere.

## Cooperages

Like most towns and industrial centres, Charlestown had several cooperages. They made wooden casks for transporting and storing anything from china clay to pilchards, beer and vinegar.

## Rope making

Ropes were essential in the shipping and mining industries. Most ports had a rope walk, where rope fibres were laid out, then twisted together. Charlestown's rope walk was laid out in 1792 behind St Paul's Church on the eastern fringes of the village.

## OTHER PLACES TO VISIT

### The Luxulyan Valley



Treffry Viaduct. Photo: Tony Atkin

Like Charlestown, the Luxulyan Valley is part of the Cornish Mining World Heritage Site. It's well worth a visit to see the impressive granite built Treffry Viaduct, the first of its type in Cornwall, which stands 27m (90ft) above the valley floor. It carried a tramway and leat associated with local mining and quarrying.

### Shipwreck and Heritage Centre

The many and varied exhibitions at the centre reflect Charlestown's history – the village, people, shipwrecks and once thriving china clay industry. The exhibition reveals maritime history dating back to 1715, and one of the largest underwater diving equipment collections in the country.

[www.shipwreckcharlestown.com](http://www.shipwreckcharlestown.com)

### Wheal Martyn China Clay Country Park

Wheal Martyn is set within a 26 acre park just north of St Austell. The museum gives a fascinating insight into Cornwall's china clay mining industry, with working water wheels, a restored pan kiln, railway locomotives, exhibitions, displays and an audio trail. Wheal Martyn is also the area interpretation centre for this part of the World Heritage Site and is well worth a visit.

[www.wheal-martyn.com](http://www.wheal-martyn.com)



## Tall Ships

Visits on board the 'Tall Ships' are available through Square Sail.

[www.square-sail.com](http://www.square-sail.com)

## FOR FURTHER INFORMATION

### Guided tours

Joining a guided tour is a great way to hear more of Charlestown's fascinating story. Your guide Ian Kestle will reveal the hidden history of the place and give answers to your specific queries. He runs these every Thursday in the summer at 7pm starting at the Shipwreck and Heritage Centre. Check the notice board in the village for up to date information.

### Reading

Charlestown by Richard and Bridget Larn, Tor mark Press, 1994

Cornwall's China Clay Heritage by John R Smith, Cornwall Archaeological Unit, Cornwall County Council

For more information on Cornish Mining visit [www.cornishmining.org.uk](http://www.cornishmining.org.uk)