



Canal & River Trust

GOYTRE WHARF

Here are some of the best preserved kilns you will see on your canal journey. It is much easier to see exactly how the kiln worked when you see them so well preserved. At Goytre, just as at Watton, near Brecon, the top of the kiln is close to the canal so the raw materials would not have to be carried very far from the boats. These are exceptionally fine and well built kilns.

HAVE YOU SEEN A LIME KILN?

Well, yes, you probably have but you may not have known what it was. Lime kilns are substantial, tall, stone hollow structures usually with an arch at the lower level. Sometimes, you will see a bank of lime kilns with a series of arches looking like a row of man-made caves. The kilns were used for burning limestone to create lime. They were loaded from the top with successive layers of coal and limestone and filled right up. When full and ready, the kilns were fired from the bottom; the fire would work its way

HOT & DANGEROUS

slowly up through the layers, burning the coal away and turning the limestone into a white, brittle and highly volatile powder - which we know as quicklime. Operating the lime kiln was a skilled job. The kiln needed to reach a temperature of 900°C and only skilled workmen knew how to achieve this.



SKILLED WORK

Experienced workmen knew just how much air to allow into the kiln to achieve the right temperature and to create the perfect quicklime. This was a slow process. It would take a week from starting to load the kiln through burning, allowing to cool and unloading the quicklime from the kiln. The kiln would be continually watched and attended to; men would stay nearby throughout the process. Dangerous fumes were produced while the kiln was being fired and it was not unknown for men tending the kiln to be overcome by fumes and die. It was also reported that men working out in foul weather would stay close to the hot kiln for warmth and would fall asleep never to wake...

After the kiln had cooled, the quicklime would be loaded into barrels to keep it dry, then loaded onto carts and taken away to be used in many ways. The number of limekilns around the country shows the great demand there was for this versatile product. The next stage in the process was the controlled addition of water to the lime, to convert quicklime to slaked lime (as in slaking your thirst).

CHEMICAL REACTION

The mixture of lime with water produces a dangerous but essential chemical reaction. The mixture produces heat and can be explosive; it bubbles and boils as the lime breaks up and begins to form sludge.

In the making of lime mortar workers need to be well covered up and wear gloves and goggles and treat the whole process with great care; the same dangers exist if lime gets wet accidentally - so it was always much safer to transport the limestone rather than the lime fresh from the kiln... Imagine a boat or cart full of lime being caught in rain... the hot chemical reaction could cause fire and with boats and carts being made of wood, it is not difficult to foresee disaster.

Today we have better clothing and equipment to protect workers and better attitudes towards their safety. It is hard for us to imagine the gruelling work and poor conditions at each stage of the production of lime. It was poorly paid manual work but very skilful; these hard working men made such a huge contribution to society, farms and the building world of their time.

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LIME KILNS TRAIL

Man has made use of the limestone in the hills in South Wales for centuries. Limestone, once heated, has several uses in building...and on the land.

Lime kilns were built next to the canal for easier transportation.

This leaflet will tell you more about lime kilns and where to spot them along the canal.



www.canalrivertrust.org.uk



Glandwr Cymru
The Canal & River Trust in Wales

MONMOUTHSHIRE & BRECON

CANAL LIME KILNS TRAIL Brecon to Goytre

Learn about lime kilns as you travel along the canal