

## East Wheal Rose Engine House

In 1846 over 1,200 men, women and children were employed in the mine at East Wheal Rose. In those days the valley would have been filled with the sounds of ore being dressed (broken up), wagons rolling in and out, steam engines hissing and whistling, and the general hubbub of so many people at work. In an age before television, this scene was the wonder of the neighbourhood and a favourite place for Sunday excursions.

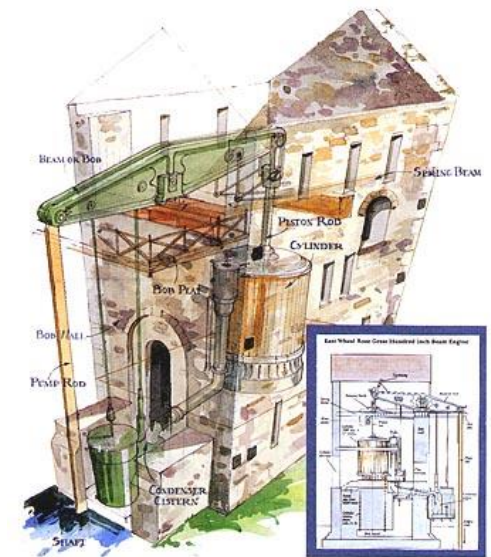
By today's standards, Cornish mines of the last century were neglectful of any concern for safety. In 1842, a foolhardy young miner fell thirty fathoms (180 feet or fifty-five metres) to his death down a shaft at Wheal Towan. A local newspaper the West Briton, noted that there had been 'two men working a few fathoms below the mouth of the same shaft on single planks, and how the deceased passed them in his fall (without knocking them off) is most extraordinary'.

This magnificent building was erected In 1881-82 to house one of the largest mine pumping engines in Cornwall, a 100-inch beam engine (known as the 'Great Hundred') which had been made nearly thirty years before for another Cornish mine, Great Wheal Vor.

The size of Cornish beam engines was indicated by the diameter of their steam cylinders (the part of the engine containing the piston and so providing the power). This 100-inch engine, therefore, had a cylinder measuring eight feet four inches (254 cm). The cylinder was so large that when it was installed as new in 1854 at Great Wheal Vor thirteen people and a dining table, complete with feast, were lowered into it while a band played music on the upper floor of the engine house!

In comparison, the steam cylinders of our two locomotives, Zebedee and Muffin, measure a mere four inches (10-16 cm).

The massive construction of East Wheal Rose engine house was necessary if it was to withstand the stress and vibration of the engine as it pumped many thousands of gallons of water an hour. The beam or 'bob' of the engine was made of cast iron weighing fifty-five tons. The bob pivoted on the front wall of the house (the bob wall) and transferred power from the cylinder and piston, which were bolted to a specially reinforced block inside the house, to the pump rods in the shaft outside.



## East Wheal Rose Engine House - Continued

The large opening above the bob wall would once have been filled in with weatherboards leaving a slot for the beam. At East Wheal Rose, the carpenter made a mistake and the first time the 'Great Hundred' moved, in May 1884, it splintered the weatherboards to matchwood! With its second stroke it hit the spring beams\* with a tremendous crash: everyone ran out of the house as fast as they could! Subsequently, we believe, the engine ran without further mishap. \*(a safety mechanism to stop the piston going through the bottom of the cylinder).

It was always necessary to regulate the running of a beam engine by adjusting the steam valve very carefully: at another mine where the engine driver was stone deaf he let the engine run until it was hitting the beams so hard that loose bricks were flying off the chimney stack and falling through the roof! Only then did he ask someone 'Is she touching, Mister?'

At the back of the engine house the huge arched opening was made for the installation of the beam engine. It would have been winched into the house using ramps, ropes and pulleys. It must have been an impressive sight to see the fifty-five ton bob being hauled up into place. Above this arch is a brick roundel bearing a cross believed to commemorate the miners who lost their lives in the disaster of 1846.

We installed the wooden platform giving access to the building in 1991. The hexagonal pattern in the centre of the platform shows the true size of the 'Great Hundred's' cylinder

The chimney stack which stands apart from the engine house, is approximately 120 feet high. At most Cornish mines the stack was built into a corner of the house but perhaps the softness of the ground here led to this unusual arrangement.

Over a period of time wind and weather eroded the top of the stack so we rebuilt the top of the chimney in 1992 and installed a lightning conductor. We also carry out regular maintenance to the engine house and have recently repaired the wall tops and lintels.

The shaft in front of the engine house is East Wheal Rose North Shaft which is approximately 160 fathoms (960 feet or 293 metres) deep and to the north of the leisure area is Jubilee Shaft. Both shafts are now flooded, it was because East Wheal Rose was such a wet mine that such a large pumping engine and house were needed.

