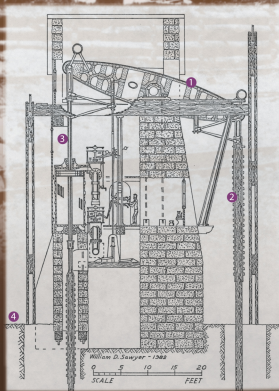


THE CORNISH PUMP

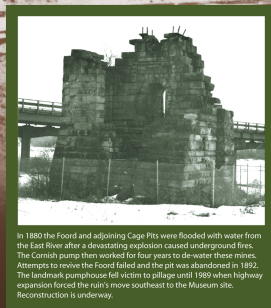


The General Mining Association put a similar Cornish pump to work in the Princess pit at Sydney Mines. The first of their kind in North America, these pumps attracted mining experts from across the continent, many of whom copied the technology at their own mines.



The Cornish system used rods attached to a beam (1) to work underground pumps. A powerful steam engine operated the beam, which tilted like a seesaw. From the beam's outside end, the main rod (2) — a spear consisting of 800 feet of oak boards bolted into one piece — activated a ram pump at shaft bottom. When the beam was lifted, the ram drew pump water into its chamber. Upon the beam's drop, the intake valve closed and the spear drove down the ram piston, forcing the water up a pipe. Two bucket pumps, operated by iron rods attached to the beam's inside end (3), then took over, lifting the water in stages to the surface (4). The engine worked six, 8-foot strokes a minute, each stroke raising 100 gallons. The Cornish pump started in 1870 and ran 10 hours a day.

The Foord pit's 1000-foot shafts were once North America's deepest, thanks to its mighty pumping system. Until 1866, our mines had remained shallow because of inadequate technology for extracting ground water. The new machinery came from Newcastle, where it was built for British industry, especially mines in Cornwall. A 3-storey stone house protected the apparatus and 260 horse power steam engine. Doors, windows and stairways were sized and positioned to facilitate operation and upkeep. A balcony accessed the 18-ton wrought iron beam mounted on the end wall.



In 1880 the Foord and adjoining Cage Pits were flooded with water from the East River after a devastating explosion caused underground fires. The Cornish pump then worked for four years to de-water these mines. Attempts to revive the Foord failed and the pit was abandoned in 1892. The landmark pump house fell victim to pillage until 1950 when highway expansion forced the ruin's move southeast to the Museum site. Reconstruction is underway.