# The enamel single-chambered muffle kiln at Gladstone Pottery Museum

## Terry Woolliscroft October 2019

No two bottle ovens or kilns were the same. Many, almost all of them, were built without architects drawings or plans. They were built 'by eye' based on the experience of the builder and the verbal requirements of the factory owner. Bottle oven builders were known to build an oven from scratch in 6 weeks.

The terms, bottle oven and bottle kiln, are often used interchangeably but this can sometimes get confusing. To most of us they mean the same thing - a complex brick-built, bottle-shaped structure for the firing of pottery or associated materials. But there is a technical difference between the two.

Within the Staffordshire pottery industry, bottle oven usually meant the potters' oven used for the firing of biscuit or glost pottery. The oven had an open flame which passed from the firemouths directly into the firing chamber to envelop its contents.

But a bottle kiln was designed and built differently. A potter's muffle kiln was constructed in such a way that the products of combustion (flames, gases, smoke, sulphur fumes, ashes and dust) were not allowed to come into contact with the pottery being fired, being circulated through flues surrounding an enclosed firing chamber containing the pottery. Muffle kilns of this type included enamel and hardening-on kilns, both used in the decorating process.

In a muffle kiln no saggars were required but the delicate colours of the decorated pottery were still protected. The firemouths were kept separate from the kiln chamber, sometimes outside.

A muffle kiln was a lot smaller than the other types of bottle oven and temperatures reached were lower at around 800 -850ºC.

This temperature made the decorated colours permanent (without firing, the colours would easily rub or wash off) and did not need the higher temperatures required biscuit and glost.

There is an important and unique example of a decorators muffle kiln at Gladstone Pottery Museum in Longton, Stoke-on-Trent.