

1 MAIN ENTRANCE TO MILL COMPLEX

Starting at River Gardens, now the road leading onto the North Feltham Trading Estate.

This was the main entrance to the gunpowder mill complex, where all materials entered the site. Raw materials for the manufacturing process would have been brought by river to the wharf at Isleworth then travelled along the Staines Road, across Hounslow Heath and over the River Crane at Baber Bridge.

At the gates the watchman searched workers and vehicles for any combustible materials. For safety the mill workers changed into clothes without pockets and special slippers instead of shoes and in order to avoid sparks the horses wore copper shoes instead of traditional iron shoes. River Gardens is now the site of what was once the main track through the mill yard, which is lost beneath Roman Close to the east.

2 UPPER MILLS

At the bridge over the Duke of Northumberland's River in River Gardens, turn left to reach the site of the Upper Mills.

From 1630 the sword mill of Benjamin Stone stood on this weir. Swords imported from Germany were finished and stamped with "ME FECIT HUNSLO" translated as 'Made in Hounslow'. These swords were supplied to Cromwell's and the King's army during the Civil War. When the sword mill closed around 1655 the building was converted to gunpowder manufacture. The complex of buildings became known as the Upper mills. Looking across to the opposite bank you can see the remains of the walls of the Brimstone House (old name for sulphur) and the Boiling House, underneath the present house and garden.

3 BOILING HOUSE

Walk back, cross the road and go through the opening between the bridge and the fence. Follow the footpath a few yards through the woodlands along the river bank.

Gunpowder has three main ingredients. Charcoal, sulphur, saltpetre were combined in a complex industrial process. Saltpetre comprises 75% of the three ingredients and from the mid 18th century was largely imported from India. It was produced by the decay of vegetable and animal matter to form a potassium nitrate solution. This evaporated in hot weather leaving salt deposits, which were collected. In the Boiling House (or Saltpetre Refining House) the saltpetre was dissolved by boiling and left to re-crystallise, producing a more refined solution.

Next door are the remains of the charcoal and sulphur house. Here charcoal was meticulously examined by hand for any grit or other combustible particles. It is supposed that charcoal was made locally as the best woods for manufacture, alder, willow, and alder buckthorn, are found in Donkey Wood. No evidence has yet been found to confirm this. Sulphur was imported into England from Sicily, and the three main ingredients were probably stored in this house.

4 MILL LEETS

Following the footpath you will cross over, on your left, an overgrown watercourse running up into the woodland.

Mill leets or watercourses provided waterpower for the mill-wheels used in gunpowder manufacture. A complex system of leets once linked the Duke of Northumberland's river to the River Crane, passing several mill buildings along the way and providing some with power from waterwheels. The water flow was controlled by sluices. Flat bottomed barges or coracle type craft were used as safe and convenient routes to transport material from one building to another, before undergoing different manufacturing processes.

5 MILL STONES

Continue along the footpath until you come to a large circular stone lying off the footpath to the right.

These stones are known as edge runner stones. After the ingredients were weighed and mixed, producing the 'green charge', it was then taken to the Incorporating Mill, which housed these edge runner stones that sat vertically on their edge, usually in a pair. In turn these stones sat on a brick built base runner. The green charge was placed under the edge runners and between the base runner, crushing and mixing the ingredients into a mixture producing the 'mill cake'. The charge was kept damp throughout the process, which lasted two hours for rough blasting powder and eight hours for fine sporting grades. The amount of charge under the edge runners was restricted by law to 40lbs in 1772 and to 60lbs in 1860.

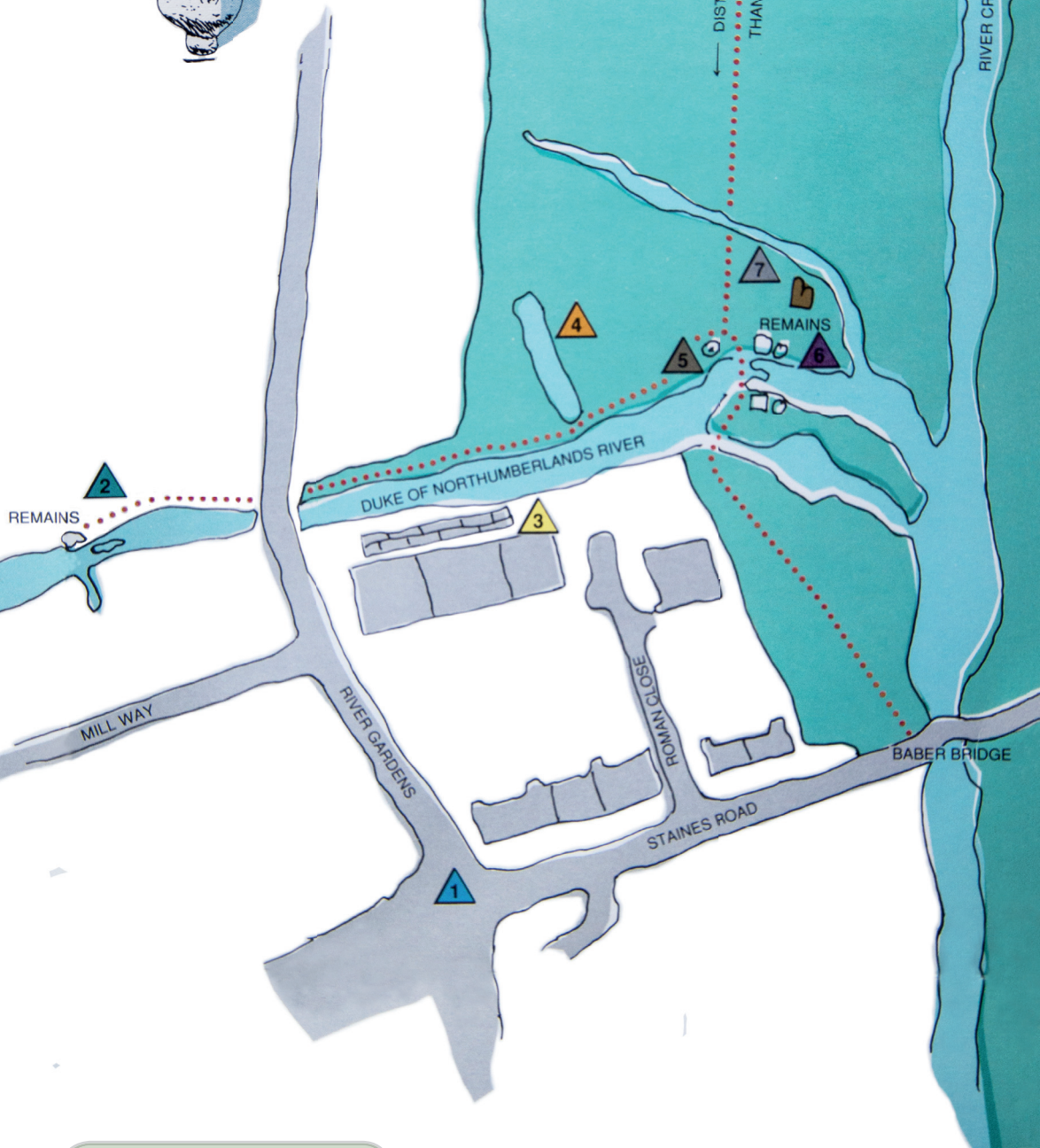
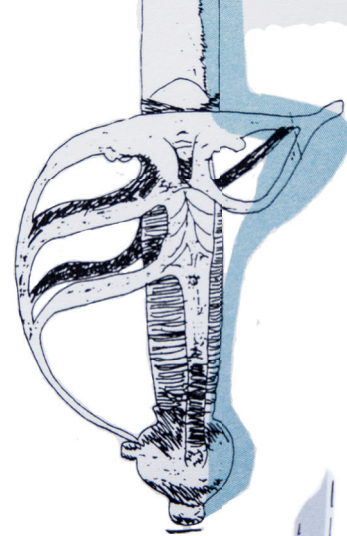
6 LOWER INCORPORATING MILLS

Walk a few yards onwards until you see the bridge.

This area is known as the Lower Incorporating Mills. The mill here was originally a paper mill and was converted to gunpowder manufacture in 1690, supplementing the mills further upstream. By 1700 the two mills (Upper and Lower) were running as a single development and daily producing considerable quantities of black powder. The machinery and revolving runner stones were powered by a 16' diameter water wheel placed between the two mill houses.

If you stand on the bridge with the two mill houses on your left and right, you can still see the bricked-up circle where the axle of the water wheel entered the mill to power the machinery. When this section of the river was drained in 1984 for essential clearance and maintenance, evidence of a brick pier could be seen, dividing the river into two millraces, so that each mill building had its own water wheel.

In the 1890's the Lower Incorporating Mills were updated with the introduction of steam engines to power the edge runner stones, replacing or supplementing the water wheels. Note the threaded rods on the top of the brickwork, which were used to bolt the steam machinery in place. Most of the accidents occurred in the incorporating mill so they were partially built of flimsy materials, usually wood, making the cost of any damage from explosion minimal and easily rebuilt. The mill men working here were only required to set the machinery in motion and occasionally add water so fatalities from this process were rare.



7 CHARGE HOUSE

Walk along the footpath to the north of the bridge for about 20 yards. On the right is the remaining brickwork of the 'charge house'.

The ingredients were weighed to make a 60lb charge and transferred to a revolving drum in a Mixing House. The resulting 'green charge' was taken to the Charge House before moving onto the Incorporating Mills for final grinding, creating gunpowder. The remains of the building which housed the boilers for the steam engines which powered the lower mills can also be seen.

8 CORNING HOUSE

Carry on northwards along the footpath until you come to a large ditch. Turn right and walk the length of the ditch.

Here are the remains of the 'Corning House' where after being 'incorporated' and pressed to remove moisture, the mill cake slab was granulated and the pieces forced through parchment sieves to remove any dust or grit accidentally overlooked.

9 BLAST MOUNDS

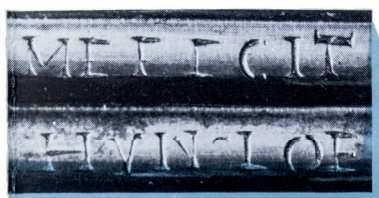
Turn back onto the footpath and carry on towards the earth embankments. Walk round them, with the River Crane on your right.

Inevitably explosions took place on the site. On 15th August 1799 there was a disastrous explosion causing many buildings to be destroyed and the loss of two men, Richard Stanwell and Thomas Knight. Another on the 20th October 1825 occurred when one of the Incorporating Mills exploded killing Mr Young and injuring his colleague Mr Ward.

In 1800 the buildings which were destroyed the previous year were ordered to be rebuilt further north from the Staines Road, and much further apart. The so-called 'danger' buildings, such as the stoves for drying gunpowder and the magazines were protected from one another by these huge mounds which, along with the large horse chestnut trees, absorbed the blast of an explosion.

The area to the west, now North Feltham Trading Estate, was once a large complex of magazines and other 'danger' buildings. The finished gunpowder was packed in oak barrels and transported to various destinations by horse drawn wagons, mainly along the Staines Road to Isleworth and on to sailing barges down the River Thames.

In 1833 Curtis and Harvey took over the ownership of the Hounslow Gunpowder Mills. The accidents continued, with three explosions between 1850 and 1870, each claiming three lives. When the mills closed down in 1926 the 'danger' buildings were dismantled and set alight to destroy any residual gunpowder.



You can walk back via the same footpath to Baber Bridge across the wooden bridge at (6), and following the path through the gate onto the Staines Road.