

Conservation and restoration (Cosford IV) (Abridged version)

D Sims Royal Gunpowder Mills

The problems for a small visitor attraction can be split into 4 areas

Money

New exhibits

Lack of expertise

Difficulty in finding volunteers

Money

We are a charity so quite dependent on the number of paying visitors that we can attract. So how do you get them in? Obviously advertising is one answer but there is a difficult balance between publicity, which is very expensive, and the return from this. Also once visitors have been they are not likely to come again for some time unless you can put on new exhibitions.

We have a special problem at WA since we only have very limited exhibition space. Although we have lots of buildings when the site was cleared Royal Ordnance said they were contaminated (about x parts per million of explosives) therefore our insurers will not let them be used until someone will declare them "safe". The fact we worked in these buildings for more than 30 years and we are still alive doesn't count. Another major problem now emerging is that the buildings were of lightweight construction so that in a bang they fell apart. Of course after 30+ years with no maintenance they are in need of expensive repairs.

New exhibits

We have a good exhibition on the history of gunpowder but it is a bit dry. We have managed to purchase an excellent arms exhibition and with the help of the friends a good collection of rocket motors from Westcott and other places. But what next?

If we cannot get something new we will not attract so many future visitors

Lack of expertise/facilities

Long gone are the days of nipping down to the main MoD workshops to get something repaired. We now have to make do with mainly hand tools or the goodwill of outside bodies. It is also difficult to get volunteers

with skills such as carpenters, builders or electricians since even when retired they prefer to earn something on the side. In any case their work is severely restricted by Health and Safety rules. However as you will see us friends are a versatile lot.

Volunteers

We depend as most places on volunteers since we only have 5 full time staff. We have some good volunteers but most prefer to be in contact with the visitors rather than work unseen on projects.

Nevertheless we are not downhearted and we have survived for the last 10 years.

The Gunpowder Mills started from a low base. After the site closed there was no plan to set up a visitor centre so most of the items we might have wanted to retain for display were destroyed. The Mills started off with a good film and a modest display together with a collection of interesting old buildings. Relatively recently we acquired an outstanding collection of old guns

What I thought I would do is to show those of you who haven't visited us a few general slides of the place and then tell you what the friends and volunteers have been doing during the last few years to improve things apart from raising money. Volunteering is a great way of enjoying your spare time

Views of site

Views of site

First model waterwheel

Second waterwheel

Cannons

Fire alarm

Gunpowder Mill

Gunpowder barge/ Green hut

Powder wagon

Cordite truck

Gunpowder Press (Waterwheel)

Rockets

Railways

Waterwheels

The Gunpowder Mills were originally driven by waterwheels. Many people particularly children do not know how they worked so our very first project was to build a waterwheel.

Recently due to reorganisation it had to be moved and in any case after 10 years it was getting dilapidated. We have rebuilt it very modern with a solar power panel providing the power for the water pump. (Fig 1)



Fig 1 Latest Waterwheel

Cannons

Originally there were 2 cannons as bollards on the humpback bridge on the main road through Waltham Abbey. When the road was widened these were returned to the site.

We decided to mount these as they would have been 200 years ago. Not as easy as you might think. The difficulty was in the cutting of the large timbers and then lifting the cannons on to the mounts. (Fig 2)



Fig 2 Mounted Cannon

Fire Alarms

The Royal Gunpowder Mills and the Royal Small Arms at Enfield were in the late 1800s one site so they had a common telegraph fire alarm system. The pillars were around the site before closure then taken to Westcott for safe storage. We retrieved these and set about cosmetically restoring them. To our amazement when we managed to open some pillars we found the workings were intact and made of brass. We also had the main control board. We spent a lot of time trying to understand how it all worked. The basis of the system are the pillars which contain a grandfather clock type weight and pulley arrangement. When the handle is pulled the weight drives a toothed wheel that activates a Morse key. This sends a signal down the line to the control board in the Fire Station where it rings a bell and is printed out on ticker tape. The fireman would compare this to the signals on the board to find out which alarm had been pulled. We now have a fully restored fire system but unfortunately at present the whole system is in storage since we have nowhere to show it. (Fig 3)



(Fig 3) Restored Fire Pillar

Gunpowder Mill

Although we were the Royal Gunpowder Factory we had no gunpowder mills. These were taken out by the time of the first world war so as to convert the factory for the making of cordite. We were offered one from Nobels but could not afford the cost of moving it (£25,000). All we had were the original drawings. (Fig 4)

Using these drawings the Volunteers set about constructing a full size working replica as near as possible to the original mill with some

ingenuity using all sorts of bits and pieces. For instance the main drive shaft is a piece of 6" water main from Thames Water and the wheels are mainly expanded polystyrene faced with plywood. One of the most difficult tasks was to work in the underground shaft to attach a slow speed motor to allow the mill to rotate at the correct speed of 15 revs/min. The project took almost 2 years at a total cost of £3000. (Fig 5)
I will show you some of the stages of construction

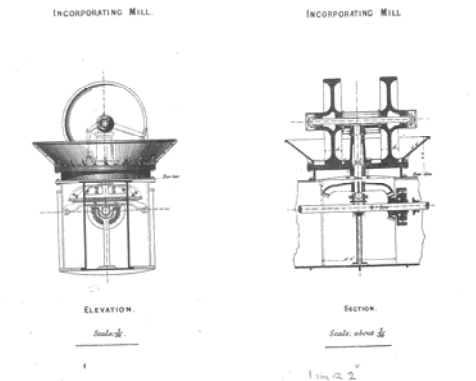


Fig 4 Original Drawings of Gunpowder Mill



Fig 5 Completed Replica Mill

Gunpowder Boat

Originally gunpowder was moved around the site by boat. Those of you who visited the site when open would have seen one moored near the library. After closure it was moved to RARDE. Unfortunately they didn't look after it and it came back in a very sorry state with much of the woodwork rotten and crumbling. I have spent much of the last 3 years

trying to do a cosmetic restoration on the boat. The slides show how far I have got.

It has been in a tent for the last 3 years but the winter gales have ruined the tent. We decided to put it in a 70 year old wooden building that has not been used for over 30 years. After clearing it out and painting we are to remove the end of the building and put the boat inside. (here's hoping it doesn't fall down) Fig 6



Fig 6 Partially Restored Gunpowder Boat

Powder Wagon

This was a genuine powder wagon that originally ran on the railway. We thought we could just repaint it and make it smart. No joy if fell to pieces so we now have a nearly original truck

Cordite truck

This was quite amusing looking back. It was on show in the woods so we went in the Land Rover to tow it to the workshop. Almost immediately the front wheels fell off. So we got a Slingsby truck, jacked up the cordite truck and tried to haul it back manually to the workshop, about ¼ mile. Well we did get there just and as we stood puffing away it all collapsed in a heap. We now have superb truck very original, well the towhook and the wheels are. Fig 7



Fig 6 Rebuilt Cordite drying wagon

Gunpowder Press

This is located in the woods and dates from about 1865. Originally it powered a hydraulic pump and is unique. The waterwheel hasn't turned for about 100 years. To illustrate the problems we have English Heritage took over two years to allow us to coat the wheel with preservative. They do not wish us to restore it. However one of our volunteers has managed to get the wheel rotating almost half a turn. If we can get a full turn then the rules for restoration are apparently different.

Rockets

The friends have by devious means obtained a reasonable collection of rockets. Some were from the original Westcott collection. We are the keepers of these and I will ask if any of you can get us some more please do (Preferably with FFE certificates). Fig 8



Railway

A different group of volunteers are trying to restore some of the railway that was on site. Originally there was some 6 or 7 miles of 18 inch gauge track which ran right down to the Small Arms factory. Only Waltham and Woolwich had 18" track all other factories were at 30". It is being restored at 30" since this is easier to get. You would not believe the trouble they have had. Everybody objected, Local planners, English Heritage, English Nature, and we were only putting back what was there originally. After 3 years it is now moving forward. A railway always attracts lots of attention and could make money for the site providing we can get an operating licence. Fig 9



Fig 9 Restoring the original railway

