

# REPORTS OF SOCIETY MEETINGS

## CROSSRAIL – ARCHAEOLOGICAL DISCOVERIES

by Jay Carver

### **A report of the LURS meeting at All Souls Club House on Tuesday 12 June 2012**

Crossrail is Europe's largest construction project. The scale of the railway is breath-taking, stretching from Maidenhead and Heathrow in the west through central London to Shenfield and Abbey Wood in the east.

The archaeology team at Crossrail look at everything from very early transport features, such as bronze age track ways, through to the recent closure of the Broadgate ticket hall in Liverpool Street

The project is a railway for the 21st century. It's being built on a large scale with high capacity in mind. The scale of the central stations has meant several buildings have been demolished. They have been carefully selected to avoid the most significant historic buildings. The size of the new ticket halls at Tottenham Court Road are the equivalent of an entire block of Soho. With changes to 21 existing stations plus nine new stations, this creates an enormous amount of material that the archaeology/heritage teams need to cover.

The construction phase started in early 2009 and work has now started at almost all locations. Tunnelling has also begun. The archaeological investigation is a busy phase with a lot of the recording work on-going throughout the central area. There will be another intense year until the end of 2013 to complete the archaeological investigations and complete the final recordings of the heritage features that are changing. A phased opening for the line is planned during 2018/19.

Heritage and archaeology have come a long way up the construction agenda these days, and they are now considered equally alongside other environmental topics. The team has been working for many years on developing a good understanding of what it is going to be affected. The design of Crossrail is trying to balance the objectives of the modern railway against retaining the heritage value of the existing structures.

The core objectives are to protect and preserve wherever possible, and where that is not possible, then an extensive recording programme is undertaken to a very fine level of detail. More modern heritage, only a few decades old, will also be recorded for posterity. The archaeology team have been very careful to look closely at each of the sites before demolition, especially the railway sites, and to record in detail all necessary elements. Great efforts are made to try to reuse and recycle as much historical material as possible. Replacement in situ when construction work is finished is one option, an alternative is to take material away and to find new locations for it around the country.

One of the sites demolished was a 1930's purpose-built office block at Blomfield Street. It was one of the first styles of purpose-built merchant buildings in that period, fitted with hydraulic lifts. A very detailed record was taken of all surviving machinery for those lifts.

In another example, detailed records were made of an 1894 bridge over what was the old North London Line north of Silvertown. In this case it was possible to relocate the bridge and the rails to a heritage railway in Norfolk. Every opportunity to move something has been taken to try to find a new home for it somewhere in the heritage railway world.

The Old Oak Common site will be the main rail depot in the future. Everything on the site has been demolished and a construction site formed where the tunnel rings for the western tunnels are being cast. Prior to the work starting the team from Oxford Archaeology undertook a detailed survey of the building. The architectural details were carefully recorded and some of the unique cast iron joints were kept. They later scanned all the main structures and identified anything within the range of buildings and units that may be useful to organisations from transport museums and heritage railways. They are hoping to find a home for one of the gantry cranes from the engine shed. One of the turntables from the early 20th century has already been moved to Swanage, Dorset where it will be reinstated on the Swanage Railway. A list of items that have been kept will be publicised, with the hope that other heritage railways will find a use for them.

During preparatory excavations for the Royal Oak portal (from where the first TBM recently set off), the foundations of Alfred Villa were discovered. This was the Railway Superintendent's house on the GWR from the late 19th century onwards.

Paddington is a Grade I listed building. There is a team of heritage specialists working on getting a new understanding of structural elements of the station and the changes that have occurred over the years. They are especially focussed on the areas where the station is going to be altered by Crossrail. The new Crossrail ticket hall will lie beneath Eastbourne Terrace. On the western ramp there will be changes to the area alongside the fourth span, and also the area called the "PIP Triangle". (PIP is Paddington Integrated Project).

Several alterations will be needed to the "milk ramp". This was a buried feature, originally constructed in the early 20th century to gain better access to platform 9 for horse drawn wagons particularly carrying milk. It was found buried under more recent changes. Records were made of all the structures before they were changed.

Also uncovered at Paddington were a series of vaults that were constructed to stable horses while horse-drawn transport was still the major consideration. Most of the vaults had been cut back and altered during changes made to the station in the 1930s, they had then been abandoned from the 1930s onward and recently found during excavations with furniture, fixtures and fittings still intact.

A short length of tunnel at the end of Paddington was discovered<sup>1</sup>. It is believed to have been constructed for trains to change over from the surface steam engines to electric locomotives for the underground Metropolitan Line.

All the information on Paddington has been shared with Steven Brindle for the new version of his book on the station.

Under Bond Street station several of the construction areas coincide with former river tributaries on the north bank including the River Tyburn. The investigation uncovered brick lined wells showing that at one time this area was a focus for fresh water. A lot of the fresh water came from here because the Fleet and Walbrook rivers had become too badly polluted to use.

The Crosse and Blackwell factory covered an extensive area of Soho in the 18th Century. In 1861 it was a major employer with approximately two thousand employees and was a major industrial site for central London. One of the archaeological features discovered was the very early use of refrigeration technology in the storage area. A great deal of pottery food storage vessels were discovered, many of which were produced in Staffordshire.

At Farringdon the London Underground tunnels under Smithfield were originally used for servicing the market. They were instrumental in delivering a large proportion of the meat sold there. They have now fallen out of use but Crossrail will use them to inject compensation grouting into the ground to prevent the surrounding buildings suffering from settlement as the TBM bores through. There is a possible plan to bring them back into service for overnight depot use by Metropolitan Line trains, once the Crossrail works are complete.

Continuing westward to Liverpool Street a key railway heritage item is the old Broadgate ticket hall. It still survives just below street level and is currently in use as a power substation. It is going to be moved to the other side of Liverpool Street for the Crossrail project. A number of late twentieth century posters still survive covered over with cables. The team took photographic records of the station that was decommissioned.

Liverpool Street is also the site of the 16th century burial ground of Bethlem Hospital. The results of some trial excavations have estimated that there may be up to four thousand skeletons that will need to be removed to build the new Broadgate ticket hall. Before reburial, a sample will be taken for analysis by the Museum of London to look at a cross section of population condition and age of death. When the archaeological investigation is finished the remains will respectfully be reburied in a cemetery.

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<sup>1</sup> This is the loco spur that was indeed used for the changeover of locomotives on through GWR trains to and from Liverpool Street and Aldgate – steam to electric and vice versa. This service was withdrawn at the outbreak of the Second World War. See photograph opposite.



**Above:** The former loco spur at the east end of the eastbound H&C platform at Paddington towards the left of the photo as seen on 11 December 2009. It has not been used since 1939 and the track connections have long since been removed, possibly when the LT and BR tracks in the area were segregated in 1966-67?

**Photo: Brian Hardy**

Early investigations uncovered one unexpected feature, which was an old Victorian sewer. It was not on any maps and Thames Water did not have any record of it. It had to be blocked up and filled with concrete before piling started to make sure it did not pose a subsidence threat.

Excavations down to six metres reach the Roman remains. It is the longest continuous sequence from any of the Crossrail sites and preserves remains from the Roman founding of the city in the 1st century AD right up to 1985.

Another large industrial site just off the Whitechapel Road is the Albion Brewery complex – built in the 1920s, it was a thriving industrial centre producing liquid refreshment for Londoners. The central frontage survives today, converted into flats, but everything else was demolished. Crossrail are building one of the access shafts here. Various parts of the numerous wells that dotted the site have been discovered during the investigation and recorded. Whitechapel Underground station will be heavily remodelled. The main station frontage will be kept but certain parts of the ticket hall, station, platform covers and the footbridge are all going to be removed. All have been recorded prior to that work starting later this year.

An access shaft and a new wharf on the River Lea are being built to take Crossrail tunnel spoil out to Wallasea Island where it will be used to create new RSPB habitats. Historically it is known that this was the site of the Thames Iron Works main office built in 1910. The large complex included two massive dry docks. For decades spoil has been dumped at this site, particularly from the DLR. Some well-preserved industrial brick structures remain that are possibly parts of a forge furnace. Various other elements including the tracks for the shipyard onsite railway were also uncovered.

Enormous slipways were constructed to bear the weight of the large vessels that were launched straight into the river Lea. The main shaft which is being constructed to launch another TBM is at

this site. Four metres down, the remains of various different sheds have been unearthed with very robust foundations and huge iron bolts which most probably secured the machinery.

The talk was concluded with a number of questions from the audience. Some of these are recorded below.

*What information is available to the public?*

There is lots of information on the Crossrail website ([www.crossrail.co.uk](http://www.crossrail.co.uk)). Everything produced is freely available on the site where there is a set of archaeology pages which are developing as the reports are produced.

*How many archaeologists work on the project ?*

The project team works with two archaeology companies. The archaeology contracts do not mirror the construction contracts. Oxford Archaeology are working on the western side and the Museum of London on the eastern side. This is to keep the continuity of work, the history and archaeological finds from one part of the site together. The project is in a series of phases and there have not been that many archaeologists on-site at any one time over the past two years. A maximum of ten or a dozen people are working on each site at any one time.

*When the Astoria Theatre was demolished was that properly recorded?*

It is presumed that it was. It was not done by Crossrail, it was done as part of London Underground's work. The Museum of London were working on it. It was an important building and I understand a contentious issue.

*Are there any viewing positions at the sites for the general public?*

Not at the moment, but some are planned as construction sites develop. New construction site boundary fences which use Perspex for the top half will be used, so that the site will be visible to passers-by. They are keen to get a viewing platform for Liverpool Street put in. There are going to be at least twenty or thirty archaeologists working there for several months. That's an opportunity to install a viewing platform where information can be provided when work starts at the end of 2014 late in the programme.

The audience thanked Jay with a round of applause for his interesting talk.

LURS members may also like to explore the Crossrail website: [www.crossrail.co.uk](http://www.crossrail.co.uk)

Two blog entries which show some of the Cross Rail archaeological exhibitions are:

<http://london-underground.blogspot.jp/2012/07/crossrail-archaeology-exhibition-bison.html>

<http://www.ianvisits.co.uk/blog/2012/07/06/crossrail-puts-a-skeleton-on-public-display/>

Jon Allen