WARWICKSHIRE Industrial Archaeology Society

WIAS

NUMBER 35 September 2009 PUBLISHED QUARTERLY

NEWSLETTER

FROM THE CHAIRMAN

The start of a new season of meetings provides the opportunity for some reflection on the progress and prospects for the Society. It is also the occasion when WIAS will be 20 years old, and that in itself is something worthy of celebration. After an initial meeting addressed by Barrie Trinder in St. John's Museum, Warwick, in 1989, the Society began its regular monthly meetings with a small number of enthusiasts gathering in a classroom at Warwick School. With various changes of venue within Warwick School over the past 20 years, the meetings now held in the Pyne Room regularly attract between 50 and 60 people. Indeed, some of those members who established the Society in its infancy are still members, regularly attending the monthly meeting. Talking to the secretaries of other societies, I realise that our meetings are extremely well supported, and that we have a very high percentage of our membership that regularly attends the meetings.

As mentioned in previous Newsletters, the Society has embraced industrial history, heritage and archaeology, always seeking to combine local interest with sites further afield, and to draw on the expertise of members as well as outside speakers. Publication of material has not been the strongest element in the Society's activities – with some notable individual exceptions. The fact that little has been published is a matter of some regret, but in my view has been compensated by the interest and enthusiasm of the membership at our meetings, including the number and range of questions posed to our speakers.

The December meeting will be an occasion for a fuller reflection on the Society's work and, as the main part of that meeting, a presentation will be made on sites that have been lost, sites that have converted to other uses, and sites that have been retained over the past 20 years. To this end – and to follow up issues raised in previous Newsletters – any member who would like to investigate a particular site (information, photographs, illustrations, references) and present these findings to the meeting, please get in touch with the Chairman as soon as possible. This could even become the starting point for a small 'Archive Group' that would gather these findings in a format that might be published and presented to members and possibly to Libraries/ Record Offices as a permanent record. This would include a suitably digitised copy of those slides that many of us possess.

Journals

As a result of subscriptions and the generosity of John Selby, the Society now has a (virtually) full collection of *The Industrial Archaeology Review* (and its predecessor *The Journal of Industrial Archaeology*) *1964 – 2009*, a full collection of the magazine *Archive – the Quarterly Journal for British Industrial and Transport History 1994-2009*, and copies of many of the *Newcomen Society Transactions 1978-1998*. The index to each of these journals is available on line, and should any member wish to borrow a copy then please get in touch with the Chairman.

Conferences

Many members will recall the presentation made by Michael Darby to WIAS earlier in the year. An extended version of this talk was the opening address of the *Fe09 Footprints of Industry Conference* held at Coalbrookdale in 2009 to commemorate the 300th Anniversary of the first commercial use of coke to smelt iron. It was a joint conference between the Association for Industrial Archaeology, the Historical Metallurgy Society, the Newcomen Society and the Society for Post-Medieval Archaeology. There were 40 papers presented - a test of stamina for some! - and the Chairman hopes to report on some aspects of these in the latter part of forthcoming meetings.

The Annual AIA Conference is to be held in Lincoln this year, with the last day of the Conference coinciding with our first meeting of the year. A small number of members will be attending and we look forward to their reports back to the Society.

Annual General Meeting

The AGM of WIAS will be held in the latter part of the September meeting. I am glad to report that all officers have agreed to stand again, and no change is planned for the subscription and meeting charges. In fact, the cost of the hire of the Pyne Room has risen, but we hope that a high level of subscription renewal and full attendances at meetings will enable us to cover this.

Officers

President: Toby Cave
Chairman: Martin Green
Secretary: Dennis Crips
Treasurer: Richard Hartree
Membership Secretary: Sue Hammon
Newsletter Editor: Mike Hurn
Committee members: Roger Cragg, John Selby

Reviews

An additional feature of this Newsletter could be a regular review of recently published books and articles, plus reviews of websites of interest to members. Again, contributions from individuals would be most welcome – please contact the editor of the Newsletter.

PROGRAMME

September 10th 2009
David Close: *Chedham's Yard*
Followed by Annual General Meeting of WIAS

October 8th 2009
Steve Bagley and Damian Kimberley: *Three Cycling Pioneers of Coventry - James Starley, William Hillman and George Singer*

November 12th 2009
Roger Cragg: *Robert Stephenson*

December 10th 2009
A presentation by members of the Society: *Twenty Years of WIAS 1989-2009*

January 14th 2010
Dr Amelia Pannett: *Warwick Gas Works*

February 11th 2010
Richard Hartree: *The Aluminium Works at Banbury 1929-2009*

March 11th 2010
A joint meeting with the Leamington Society: *The works of William Louis de Normanville*

April 8th 2010
Dr Malcolm Dick: *Matthew Boulton (1728 – 1809) and the celebration of industrial technology*

May 13th 2010
Peter Coulls, Adrian Foote and John Willock: *Willans Works*

June 10th 2010
A presentation by members: *Industrial Archaeology Abroad*

Meeting Reports

May 2009: Dr Jim Andrew
The Smethwick Engine

Jim Andrew's absorbing presentation on the history of the Smethwick Engine was a fine example of industrial archaeology in practice. He demonstrated a passion for his subject, painstaking thoroughness in researching archive material in old company accounts, maps and local historical sources, and hands-on trowel (or hydraulic drill) archaeology when required.

In 1897 a steam engine was preserved because it was old but its preservation was justified by some pretty dubious stories. It is now known that it was put to work at the end of May 1779 and worked for a hundred and twelve years. It was erected by the Birmingham Canal Company to return water up the locks at Smethwick, and the Canal Company archives have yielded the best set of accounts and costs for any eighteenth century steam engine - there is even an estimate of the cost of the alternative proposal of a reservoir. The engine was used by James Watt in 1779 to evaluate the effect of expansive working. It gave a 14% saving in fuel, leading to details of how to get this saving being circulated to Boulton & Watt's engine erectors. The Canal Company preserved the engine in 1897 and in 1959 the British Waterways Board presented the engine to Birmingham Museums & Art Gallery. Funding for relocation and installation was a problem but the engine was steamed for its bicentenary in 1979, becoming the world's oldest working steam engine, and it was put on regular public view from 1983. In 2001 it was again moved when the industrial collections moved to Thinktank, Birmingham Science Museum, where it can be steamed or demonstrated in a gentle way by a hydraulic system.

Dr. Jim Andrew's lecture detailed the engine's history and how it contributed to the Birmingham Canal. The work to extract the engine's costs was described together with how the engine worked and the results of the tests on expansive working. In the 1980s the original site of the engine was identified, leading to the excavation of the half of the engine house which remained below ground and a greater understanding of the construction of engine houses at that time. Finally, the talk outlined the way the move to Thinktank allowed the restoration of the engine closer to its original layout, giving better performance on steam, but also explained why the engine cannot be run representatively off load yet must not be operated under load - an interesting conundrum. Maybe the most startling point to emerge was that the engine, which lifted the equivalent of 1,500 buckets of water each minute allowing 250 boats to pass through the locks every week, cost about £2,000 in 1779, between half and three quarters of a million pounds today, yet it only delivered 28 horsepower, some half the power of many small cars today. Could we seek a better illustration of the desperate need for reliable power at the start of the Industrial Revolution.

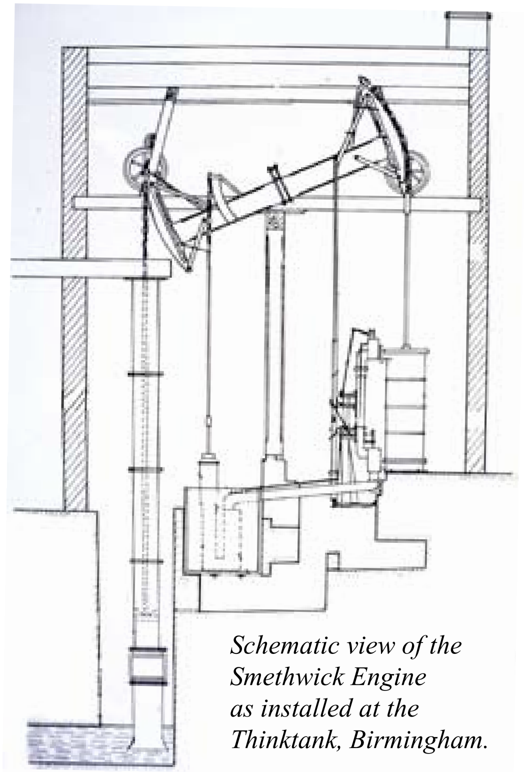
Looking at the engine and its purpose in more detail we learned that originally, it was one of two engines used to pump water back up to the 491 ft summit level of the Old Main Line (Birmingham Canal) canal at Smethwick, not far from the Soho Foundry where it was made. The second engine, also built by Boulton and Watt, was at the other end of the summit level at Spon Lane. In 1804 a second Boulton and Watt engine was added alongside the 1779 engine.

The engines were needed because local water sources were insufficient to supply water to operate the six locks either side of the canal's original summit. The locks could have been avoided if a tunnel had been built, but the ground was too unstable for a tunnel to be built using the techniques available at the time. In the 1780s, a cutting was constructed by John Smeaton, enabling three of the six locks on each side to be removed.

In the 1820s, Thomas Telford constructed a new canal parallel to the old in a deeper cutting, at the 453 ft Birmingham Level, creating the largest man-made earthworks in the world at the time. It was spanned by the Galton Bridge. The engine was still needed, despite both these developments, and Thomas Telford constructed the Engine Arm Aqueduct carrying the Engine Arm branch canal over his New Main Line so that coal could still be transported along the arm to feed the Smethwick Engine.

In 1892, a replacement engine was built in a new pumping house, now Grade II listed, next to Brasshouse Lane, as the original Smethwick Engine was considered uneconomic to repair. This new pumping house is now part of the nearby Galton Valley Canal Museum. The original Smethwick Engine was then removed to British Waterways Ocker Hill depot where it remained until acquired by Birmingham City Council.

The engine house was demolished in 1897. Its original site and foundations, which are a Scheduled Ancient Monument, can still be seen on Bridge Street North in Smethwick, just north of the junction with Rolfe Street.



Schematic view of the Smethwick Engine as installed at the Thinktank, Birmingham.

June 2009: Peter Bones

The Restoration of Chesterton Windmill

Peter Bones is a (Morris-dancing) restoration engineer with Warwick County Council who was in charge of the repairs required to Chesterton Windmill after a stock broke during the open day demonstrations on 9 September 2006, causing one of the sails to crash to the ground. Fortunately without seriously injuring anybody. He gave us great insight into the mill, its history and its restoration.

Before detailing the latest repair programme, Peter described the history of the building. The ornate limestone structure with decorative sandstone features was built in 1632. It was commissioned by Sir Edward Peyto, Lord of the Manor of Chesterton and a member of a prominent Roman Catholic family. A staunch Royalist, he was Governor of Warwick Castle from 1630 untl his death during its siege in 1642.

Peyto was a flamboyant mathematician and astronomer also a friend of Inigo Jones, whom he may have accompanied on a visit to Italy and who may have had some responsibility for the design. Certainly there is an Italian influence to the building with elements of the dome and columns of St Peter's being recalled. The building appears to be unique although a Round Tower built in America at Newport, Rhode Island has strong similarities. (If members care to Google Newport Round Tower they will uncover a wealth of interesting material including references to Chesterton)

There remains speculation as to the original purpose of the building. Was it an astronomical observatory? A working mill? Or simply a folly? Other classical cylindrical buildings usually had eight (or multiples of) columns whilst the Chesterton building has only six. This has reinforced the suggestion the its original purpose was as an observatory with the sight-lines between pairs of columns aligned to the solstices. Certainly, it soon became a working mill and continued as such, with major work on the machinery being recorded in 1776 and 1860, until 1910 when it ceased working.

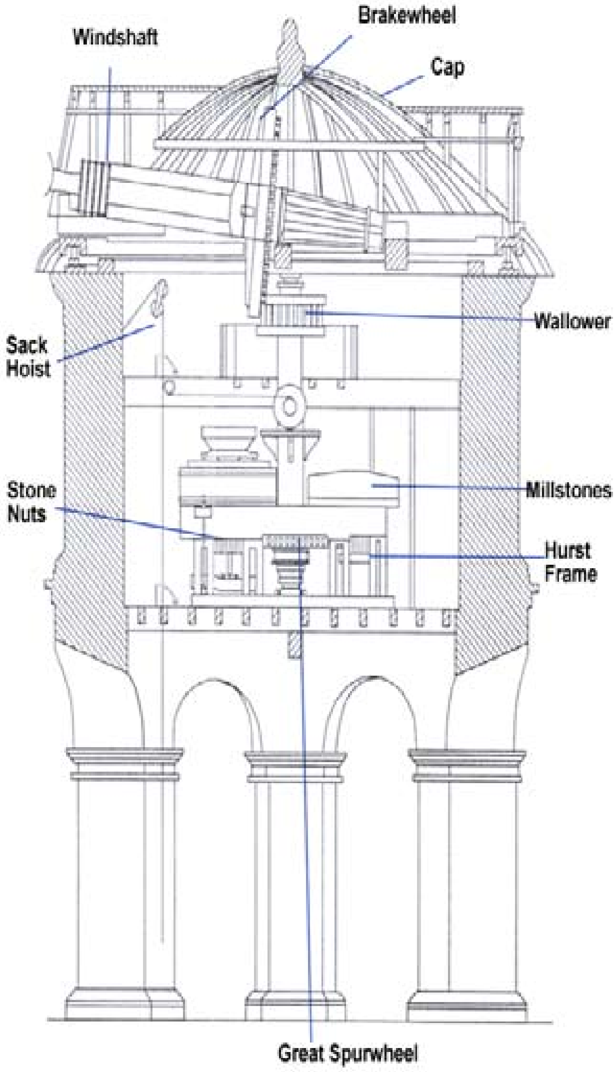
The mill was derelict in 1965 when Warwickshire County Council, who have since been made custodians of the mill, were asked to undertake restoration by the Ministry of Works. The Society for the Protection of Ancient Buildings undertook with Warwickshire County Council to restore the machinery. Work was finally completed in the spring of 1975 and a Civic Trust Heritage award of Exceptional Merit was made to the County Council. The first public open day was held on 30th October 1971.

Peter used a model of the Mill's working parts to give us a very detailed explanation of the mechanism. Members now know about sail-cloth frames, whips, inner and outer stocks, the canister as well as brake wheels, windshafts, wallowers and Hurst Frames. Some of these features are unique to the Chesterton Mill.

Between 1999 and 2001 many of the components of the four sails and the stocks that carry them were replaced. However, an attempt to replace the routine inspections, that would have been made by the miller, of the security of the wedges used to secure the inner stocks in the canister (by bolting the wedges to the stocks with steel coach screws) led to the disaster of 2006. The screws corroded and caused rot to weaken the stocks leading to one fracturing soon after the sails began to rotate. So much for modernity! Happily, Peter has devised a much more elegant solution for wedge security that will not compromise the integrity of the new stocks.

At the same time as repairs were being made to the sail mechanism the opportunity was taken to replace joists and other timbers of the working floor that were in poor condition. Siberian red pine, pressure treated after drilling and machining was used for the new stocks and the woodwork is finished with a linseed oil-based paint. In the future the mechanism will be monitored with quarterly inspections.

ChestertonWindmill will be open during the Heritage Open Days in September.



A cross section of the Chesterton Windmill

June 2009: The Chairman's Lecture
The Olympic Games Site

The decision to award London the 2012 Olympic Games was met with a range of responses, from unparalleled delight amongst sports enthusiasts to utter dismay from those seeking to preserve the unique atmosphere of this little known part of London. It also attracted the interest of industrial archaeologists, as this site is – and has always been – an area of industrial activity and public works provision. The scale of the project and the limited time available meant that any recording took on great urgency, and this need was reflected in the subsequent archaeological surveys.

The Olympics site is in the Lower Lea Valley, originally marshland, but now traversed (in a broadly north-south direction) by a series of natural and man-made water courses. These have been utilised for water supply, navigation, flood control and as a source of power. Names such as Three Mills River, Waterworks River, and Pudding Mill River give an indication of the importance of water to the economic activity of the area. Improvements to these water courses in terms of access, navigability and environmental quality is an important component of the Olympic Plan, although some of the more ambitious plans for the use of water as a means of transporting materials have had to be reduced in scale.

The water courses have been crossed by road and rail routes, often creating enclosed pockets of land which have taken on their own particular identity and usage. They have been the location for a multitude of industrial activities, many of them in the 'less attractive' category, with very little of the area devoted to residential accommodation.

This pattern has continued through to the recent past, and the sites had become occupied by an eclectic mix of manufacturing, storage and distribution facilities, bordering the often neglected waterways. It would be difficult to justify the retention of many of these on industrial heritage grounds, but archaeological investigation of what may have preceded them certainly does.

All the firms have been given the opportunity for re-location. Some have chosen to move further afield, whilst others have remained in the area, perhaps the most notable example being H. Forman (purveyors of smoked fish) established in London by immigrant Aaron Foreman in 1909. Stratford, of course, has long been an important railway centre, and the incorporation and development of rail links via Stratford is an important ingredient in the Olympic Plan.

There are already two highly significant sites that occupy locations close to the south of the Olympic Site – namely Three Mills and Abbey Mills Pumping Station. There have been mills on the Three Mills site for a very long time, and the 'Three' referred to are House Mill, Clock Mill (both of which still stand) and a (now demolished) windmill. Both House Mill and Clock Mill were tidal mills, and House Mill contains much of the machinery and fittings associated with the milling process. It is Grade 1 listed, and run by the River Lea Tidal Trust.

Abbey Mills Pumping Station is another well-known site. Constructed in the 1850s as part of Bazalgette's monumental scheme for the installation of London's sewer system, it quickly earned the title of 'Cathedral of Sewage'. Various sewers feed into the pumping station which then lifts the water into the Northern Outfall Sewer which carries it - by gravity – to Beckton for treatment. The Northern Outfall Sewer is itself a magnificent feat of engineering and its path can be easily traced over the area. It now forms a cycling/ walking route 'The Greenway', currently being upgraded in time for the Olympics.

Elsewhere on the site, the archaeological investigations is being/ has been carried out by the Museum of London Archaeological Services (MOLAS) and PCA Pre-Construct Archaeology (PCA) under an extremely tight timetable. Various sites have been unearthed – for example extensive remains of Sayne's Mill beneath a site later occupied by the box factory for the Yardley Perfume Company. A small part of the Yardley site has been retained, with the Yardley flower girl advertisement a welcome respite to the rather bleak and busy Stratford High Street.

One of the most interesting recordings has been of an unusually complete Edwardian group of buildings known as King's Yard. This comprised the manufacturing premises of Clarke Nickolls and Combs (Clar-ni-co), the confectionery suppliers formed in 1872. One of the buildings has been retained for posterity on the site which is now largely given over to the Olympic Energy Centre.

As well as industrial activity, the area has long been a location for recreational activities, and – given the nature of what is to be created – one might anticipate these being greeted with open arms. The problem, of course, is the loss of the individuality of the area, and many bemoan the loss of Hackney Greyhound Stadium, the Eastway Cycle Track and simply the opportunity to walk, observe and enjoy a splendidly isolated part of London. Even more resentment has surrounded the relocation of the Manor Garden allotments, originally created by three Old Etonians for local people, but now very much a symbol of local identity and independence.

There has been much talk of 'The Legacy' of the Olympics, with an area dramatically transformed and hopefully rejuvenated. There will have been casualties, but - with a few notable exceptions - the harsh reality for the industrial archaeologist is that there were in fact few sites worthy of retention, although investigation and recording are important. Prospects for the area have been enhanced and perhaps the Olympics has stimulated far more interest in the history and archaeology of the area than would otherwise have been the case.