

WARWICKSHIRE

WIAS

Industrial Archaeology Society

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FROM THE CHAIRMAN

These notes were prompted by a decision to try and re-visit some of the industrial museums and collections that exist locally and further afield in order to see how they had changed over the period since I first became interested in the subject of industrial archaeology. This was an excellent decision and reminded me principally of the wealth of industrial heritage that exists in this country and the sterling efforts of amateur and professional enthusiasts in seeking to record and preserve this heritage and to make it accessible to a wide audience.

It also reminded me that making the enjoyment of industrial heritage a viable financial proposition was no easy task, and attracting visitors on a regular basis demanded enthusiasm, initiative and dedication, often acting in the face of difficult economic circumstances.

Museums can gain income from a variety of sources and visitor income is only one amongst many. Public authority funding (both national and local), charity funding, sponsorship and private philanthropy all combine with earned income to provide funds for the museum. Earned income includes not only visitor income, but also the use of the museum's facilities by other groups e.g. for courses and conferences.

Some shifts are inevitable – making the museum somewhere that will attract families, perhaps with additional entertainment and a more diverse selection of items on sale in the museum shop. This 'secondary spend' income with visitors adding to revenue via refreshment and shop sales has become a very important ingredient in many cases. The leisure market is extremely crowded and competition intense, and this, combined with the increasing costs of travel, exerts great pressure on visitor income. Repeat visits also need to be encouraged, in part by flexible ticketing arrangements, with a changing programme of events and exhibitions, itself often an expensive process.

This has produced changes that might not always rest happily with the more specialist interests of the industrial archaeologist. As one member commented to me recently after a visit to the shop at an industrial museum 'you are more likely to get a packet of vanilla fudge than a technical guide to the exhibits!'

However, the reality is that these changes represent the only way forward, and we have two prime examples in the midlands with the Blists Hill Victorian town at Ironbridge and the Black Country Living Museum. These museums obviously offer a great deal more than these 'visitor experiences' but such experiences have become the main attraction for many families.

The Black Country Living Museum has recently lost its regular funding from Dudley Council as part of the cuts programme initiated by many local authorities, and the pressure to be self-financing has intensified. One initiative has been the 'Heritage Skills Courses and Talks', now in its second year. These seek to introduce a new audience to the heritage and traditional skills of the Black Country, with courses, for example, on canal crafts, ceramics and glass engraving, as well as some with an industrial archaeology theme. I attended a day course recently on iron making in the Black Country led by Paul Belford, which surveyed the various processes involved, related these to the exhibits on site, and spent some time on a case study of the archaeological excavations at Wednesbury Forge.

During our tour of the site, it was good to see the museum busy, and gratifying to witness visitors enjoying the nail and chain-making demonstrations as well as the fun fair and fish and chip shop!

Index to WIAS Proceedings

It is a truth (universally acknowledged!), that there is no such thing as a perfect index. It follows, therefore, that the index

recently published on our website for the proceedings of this Society must inevitably have its own share of errors and omissions. These are best spotted by its users and it is hoped that all such discoveries will be swiftly passed on either by e-mail to: artastrop@ntlworld.com or by 'phone to (01926) 857898. Or at one of our monthly meetings, of course.

Complementary to the index, it has also been suggested that our website could include a list of the titles of all the papers, booklets etc. which have been published by members since the Society's inception. Some were published under the *aegis* of WIAS, some privately and some just made available on request.

Such publications of course received coverage in the Society when they first appeared, but usually none thereafter. It follows therefore that there exist collections of valuable IA research of which some members (especially those newly-joined), will be completely unaware. If our website were to list the titles with brief abstracts of their contents, plus the authors' names and contact information, anyone interested in acquiring a copy of a particular paper can then approach the author direct.

Initially, therefore, all members are invited to contact Arthur Astrop (at the above e-mail address or 'phone number), to offer their published papers for inclusion in the list. Depending on the response to that invitation further details of the scheme will be worked out.

PROGRAMME

May 9th 2013

Simon Buteux (Director, Birmingham Conservation Trust):
Newman Coffin Works, Birmingham.

June 13th 2013

Anthony Coulls:
Railways and the National Railways Museum of Sierra Leone.

The programme for 2013-2014 will be published at the June meeting, with inclusion on the website, and as part of the annual mailing over the summer.

NEWSLETTER

Meeting Reports

February 2013: Members' Evening

Another excellent turnout of members and visitors were entertained by a varied programme which ranged from the saga of 'The Stone Pipe Company' through a 16th century mining text book, the vicissitudes of aircraft collecting and a few days in Liverpool to a clamp brick kiln in South Africa. Who ever said Industrial Archaeology was dull.

The Stone Pipe Company

The interest of Peter Chater, Peter Coulls and John Willock had been sparked during a presentation on John Rennie by a picture of a stone pipe embedded in a Cotswold wall near Guiting Powers. It was a good excuse for a Spring day out and once the right wall had been found (at the entrance to the village on the Cheltenham road) resulted in the unearthing of a fascinating example of industrial archaeology.

The existence of the Stone Pipe Company was no secret. The Gloucestershire Society for Industrial Archaeology had excavated one of the sites in 1984/5 without uncovering much of interest and it had been the subject of a public lecture at Durham University in 2009. However, much remained to be revealed. Searches of contemporary newspapers produced advertisements for 'stone masons, labourers and scablers' and the need to improve local roads to accommodate the transportation of some 30 tons a day of stone pipes by horse and cart. The bill to create a tram-road or railway was refused despite the damage being caused to the turnpike.

John Willock's reconstructions of the production machinery and manufacturing processes were exemplary and demonstrated the extraordinary activity taking place in the remote and rural Cotswolds at the time of the Napoleonic wars. Furthermore, the project was fundamentally flawed by the choice of grossly unsuitable raw material for its intended purpose, which led to complete commercial failure if not fraud on a grand scale. Over 60 miles of stone pipe (some 53,000 individual pipes) was laid in Manchester only to leak due to porosity and faulty joints as soon as the system was pressurised. The involvement of men like Rennie and Murdoch as well as the firm of Boulton & Watt raises the question of how did it all go wrong? Why was there, apparently, no testing to establish fitness for purpose?

The full story of The Stone Pipe Company of Guiting Power is told in an Occasional Paper published by the Society to coincide with the presentation.

Blame it on Demons

Professor Chris Voss, first a metallurgist and latterly an academic, 'blamed it on demons' and showed that there is nothing new today with a look at the pre-history of operations and engineering management. *De Re Metallica* by Georgius Agricola was published in 1556 and is seen as the first major textbook on the subject focussing on the mining and metallurgy industries.

Agricola says that "There are many arts and sciences of which a miner should not be ignorant". These include: Philosophy - to discern the origin, cause and nature and obtain more abundant results from his mining. Medicine - that he may be able to look after his diggers and other workmen. Astronomy - that he may judge the direction of

the veins. The science of surveying - that he may estimate and determine the limits and boundaries in these workings. Arithmetical Science - that he may calculate the cost to be incurred in the machinery and the working of the mine. Architecture - that he may himself construct the various machines and be able to explain the method of construction to others. Drawing - that he can draw plans of machinery. Law - that he may claim his own rights and that he may fulfil his obligations to others under the law. A pretty comprehensive curriculum even by today's standards.

Illustrations from the publication gave many examples of medieval production processes that had clear successors today; flow production, automation and green technology to name but three. Descriptions of organisation and management were equally modern, with a clear chain of command from owners through managers and foremen to tradesmen and included quality control or assaying to minimise losses. Also covered are the criteria for site location: the situation, the conditions, the water, the roads, the climate, the right ownership and the neighbours, financing, costs and technology.

The scope of engineering and operations management in medieval times seems very familiar and has not changed much in 450 years. The paramount considerations remain: people, process, technology, quality and cost. Technology has obviously advanced but other factors show little change in modern textbooks. Agricola even deals with environmental (mining was recognised as a serious source of pollution) and ethical (links to armaments and finance) issues.

And when it all goes wrong: 'In some of our mines, however are other pernicious pests. These are Demons of a ferocious aspect. Demons of this kind are expelled and put to flight by prayer and fasting'. Sentiments that may well be familiar to today's engineers and managers!

The Midland Air Museum

If collecting stamps is your passion then all you need are a few albums, and a small shelf on which to put them. But what if your obsession is collecting and preserving historic aircraft? Then you have a problem, because even the whole of your spare bedroom won't be much use for that!

The solution of that problem for the Midland Aircraft Museum on the periphery of Coventry airport was outlined by John Berkeley in his account of the difficulties involved in first acquiring iconic aircraft and then providing the substantial amount of open and covered space in which to house and to maintain them.

MAM was founded in 1967 by a small band of volunteers who, in its early days, began to attend 'air shows' and fêtes with just a few small exhibits, and a tent in case it rained! Bit by bit, sometimes with odd slices of luck, but always with countless hours of voluntary effort, the members built up their collection to the point where today MAM is recognised as one of the country's leading self-funded independent aviation museums.

An important breakthrough came in 1975 when the lease on a small piece of land on the north side of Coventry airport was obtained, which meant that the organisation had its first permanent home. Three years later, the museum opened to the public, proudly displaying five aircraft and attracting its first public visitors.

The 1980s was an important decade since it saw the acquisition of two very large aircraft, namely a Vulcan V-bomber and an Argosy freighter; together with the establishment of the Sir Frank Whittle Jet Heritage Centre; and a move to its larger present site. In due course, a Second World War Robin hangar was erected and the Museum at last had a substantial covered area where selected aircraft and associated items could be displayed, and proper facilities for maintenance and restoration could be provided.

Among its collection the Museum is proud to include a MIG-21 fighter, a Sea Hawk and Sea Harrier jump-jet, a Saab J29 and a CMC Leopard, an all-composite construction aircraft.

Liverpool Explored

Roger Cragg took us on a whirlwind tour of Liverpool as experienced during a three day visit by the Historic Engineering Works Panel. The appropriately named Hope Street is book-ended by two great Cathedrals. The Anglican, designed by a young (and Roman Catholic) Giles Gilbert Scott, was begun in 1910 but not completed until 1978. It is the largest in the UK and the fourth largest in the world. The Roman Catholic is unashamedly modern. The fourth design but the first completed on the site, it was designed by the Protestant Frederick Gibberd. The previous designs had been by Pugin, Lutyens and Adrian Gilbert Scott. Begun in 1962 and completed in 1967 the conical building is topped with a striking cylindrical lantern tower crowned with pinnacles.

We then went underground into the curious 'Williamson Tunnels'. The purpose of this warren is unknown but could have been a philanthropic make-work scheme by Joseph Williamson who had come to Liverpool in 1780, married the boss's daughter (Tate Tobacco) and sought to develop housing on the site of the tunnels. Building ceased on his death in 1840 and the tunnels remained derelict, filled with rubble and refuse, until archaeological investigations were carried out in 1995. Since then some excavation has taken place and part of the labyrinth of tunnels has been opened to the public as a heritage centre.

Much has been written about the World Heritage Site that is Liverpool's Albert Dock. Built in 1842/9 its buildings have been converted to other interesting uses and include a restored pumping station. Adjacent to the pier head and waterfront is a new canal linking the Leeds Liverpool Canal to the Albert Docks. The striking Cunard and Liver Buildings are tributes to reinforced concrete construction, the latter being the largest such structure when built.

The ventilation building for the Queensway Tunnel and its control room showed how complex are the needs of a two mile long tunnel carrying a high volume of cars and commercial vehicles. 2.5 million cubic feet of air need to be changed every minute by a two fan system, one inlet, one exhaust and duplicated for instant replacement in the case of failure.

In the newly restored St George's Hall, which houses a concert hall and civil courts, a wooden floor now protects the original and highly decorative Minton tiles of the concert hall. Finally, two stations. Edgehill the terminus for the Liverpool and Manchester Railway is the oldest station in continuous use and Lime Street, whose iron roof built in 1849 was the largest in this material in the world at the time.

South African Bricks

Martin Green's bicycle odyssey in South Africa was in striking contrast but started closer to home as his title 'Coventry to the Cape' indicated. A quick review of some now derelict Warwickshire brick works awaiting redevelopment led to consideration of other local sites and especially the concept of the clamp kiln, a temporary structure taking its name from the age-old method of preserving root vegetables by piling them under an earth mound. The process is no longer in use in the UK, needing both space and plenty of cheap labour.

Participation in a charity cycle ride took Martin to the beautiful scenery of South Africa's Cape Coast and the diversions of huge sand dunes and whale watching. The 'Whale Crier' of Hermanus seemed to enjoy plenty of job satisfaction. Some miles further on the riders were surprised to find a road sign warning of 'Smog – No Visibility' on a crystal clear day.

The reason became evident around a corner with a large open brick works using clamp kilns. This necessitated a pause from pedalling to investigate. The management and workforce were happy to receive visitors and Martin's ever ready camera.

Green, hand-moulded bricks were stacked to dry and covered if rain was coming – a useful local weather forecast for the neighbours. The huge kilns were seen in various states of construction, firing and dismantling. Typically a kiln would need three weeks to build, ten days firing and four days cooling.

Considerable skill was evident in the construction of the basic kiln with its labyrinth of passages to conduct the heat throughout the structure. Sealing or 'scoring' the outer surface with mud and without any signs of 'elf 'n safety' seemed slightly hazardous and emphasised the size of the finished kiln.

The works produces six to seven million bricks a year but the process is very wasteful of energy and only viable thanks to a plentiful supply of cheap, but on the evidence of the camera, very cheerful labour. The return to clamp kiln brickworks in Warwickshire seems most unlikely!

Endpiece: The flotsam or jetsam puzzle

The 'what's it for?' puzzle set on p 4 of our Newsletter No 47 caught the eye of Brian Wells of Middleton Cheney, near Banbury. Brian writes:

'I have seen an identical mechanism on one of the church clocks I look after. The yoke (associated with each bevel gear) is part of a crude universal joint. The shafts enter on the same alignment as the shafts in the photo, a small round bar is fixed at right-angles to the said shaft, and this allows for a degree of misalignment.

The whole mechanism rotates once every hour, and therefore drives only the clock's minute hand. Adjacent to the clock face there is a 12-to-1 reduction gear which drives the clock's hour hand, the latter being attached to a tube which is concentric to the minute-hand shaft.

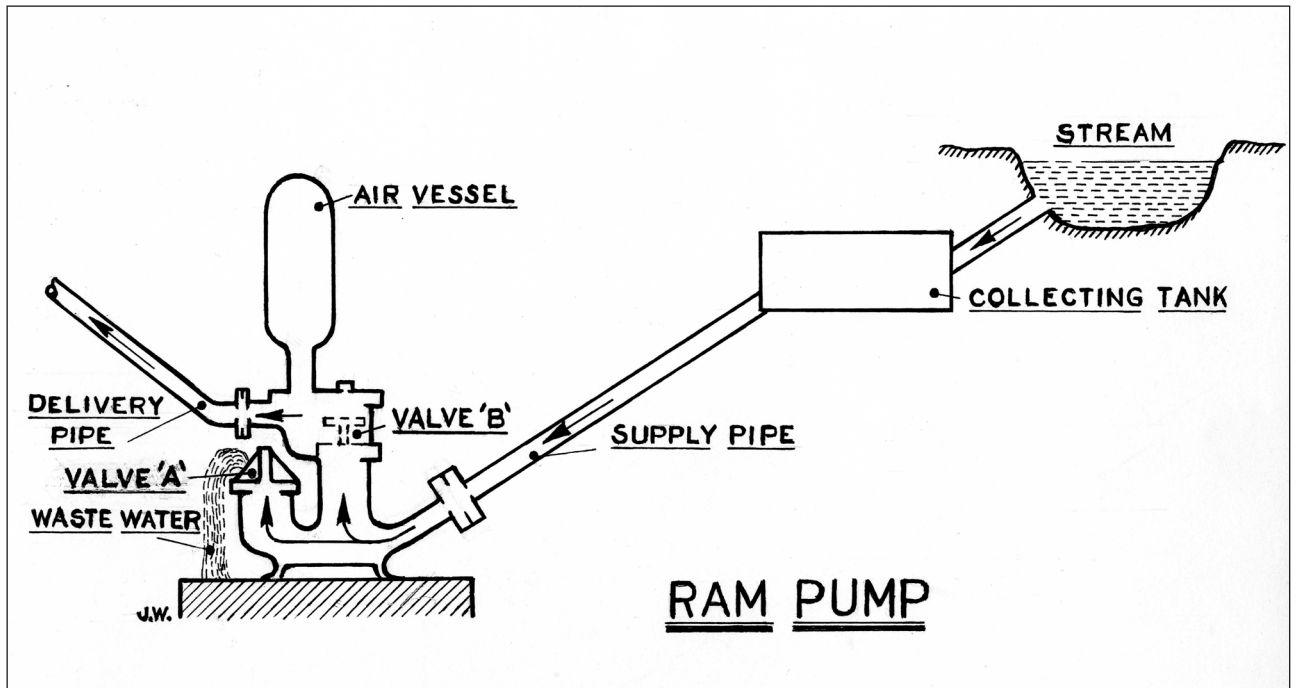
This type of bevel-gear system is used where, for structural reasons, the clock is remote from the clock face., and one such can be seen in the church tower at Middleton Cheney'.

Well spotted, Brian! Now we only have to discover how the mechanism in our photo came to be washed-up on a beach!

Members' Contributions

Peter Chater:

A Ram Pump



Almost hidden away in an unnamed stream which feeds into the River Alne, close by the Heart of England Way at Wootton Wawen, is a small ram pump (BLAKES HYDRAM 5X).

This pump is similar to the one shown opposite.

Those with good hearing when walking the Heart of England Way may hear it pulsating away, day or night, pumping water to farm buildings several hundred yards away.

It pumps about 10,000 gallons per week at very low cost as it relies on the water in the stream to provide power.

Ram pumps were fairly common until the advent of the electric pump and this is the only one in use that I am aware of locally.

The name Ram Pump with its knocking sound is said to have reminded the inventor of two rams (sheep) butting their heads together.

This simple pump operates with only two clack type valves. See diagram above.

Water leaves the stream and feeds into a collecting tank. The water then enters into the descending supply pipe to the pump. Water initially passes valve A until the flow has sufficiently built up to force this valve to suddenly close. This sudden closure trapping the water creates pressure, pushes valve B open and a small amount of water enters the delivery pipe. When water pressure in the pump equalizes, valve B closes retaining the water above it and valve A falls open to start the whole process again.

The Air Vessel holds a cushion of air which compresses at each action/stroke to give a more equal flow in the delivery pipe.

It is said that these pumps can perform this pumping action between 40 and 200 times per minute. This would depend on the head of water.



Diagram drawn by John Willock.
Some information given by Farmer David Steele.

John Brace:*A Sheepwash and Stone Culvert at Sutton-Under-Brailes*

The Sheepwash is located about 300m SE of the Manor House, Sutton – under – Brailes, and immediately upstream of the bridge over Sutton Brook (or Washbrook) at:

GR SP30213722. (Landranger Sheet 151).

It dates, probably, from the 19th Century but has had at least two major reconstructions.

Access is easy from the Sutton – Traitorsford Road.

Traditionally sheep were washed to clean the fleece before shearing. Often this was done in purpose-built permanent sheepwashes. As sheepwashing declined, after the great war of 1914-1918, the old washes were abandoned. Many are now lost whilst others are in ruins. A few have been restored.

This site has two features that may or may not be associated. The principal one is a typical 19th century Cotswold sheepwash. The second is a stone culvert.

The ditch is an extension of the roadside drain and reaches the brook a little upstream of the sheepwash. The stone culvert, which may or may not be contemporary with the sheepwash, runs for about 5m about halfway between the brook and the Sutton – Traitorsford Road. It must have been the crossing point for a roadway or track – perhaps an earlier alignment of the present road.

In about 2000 it was decided to restore the Sutton-under-Brailes sheepwash. The work, greatly assisted by a grant from the Heritage Lottery Fund, was substantially complete by September 2006.



Restoring the exit ramp



The sheepwash in the 1920s



An early photograph

Colin J Brookes:*The Last Picture Show*

During the 1960's cinema-going in the Birmingham and Midland area was in decline, as indeed was the general trend throughout the country. In the Birmingham area over 40 cinemas advertised, just ten years later there only remained a handful. Therefore, my career as a projectionist lasted less than three years and involved two Cinemas - the News Theatre in High Street Birmingham, and the Sheldon Cinema on Coventry Road, Birmingham. Both buildings have since been demolished and new buildings erected on their sites.

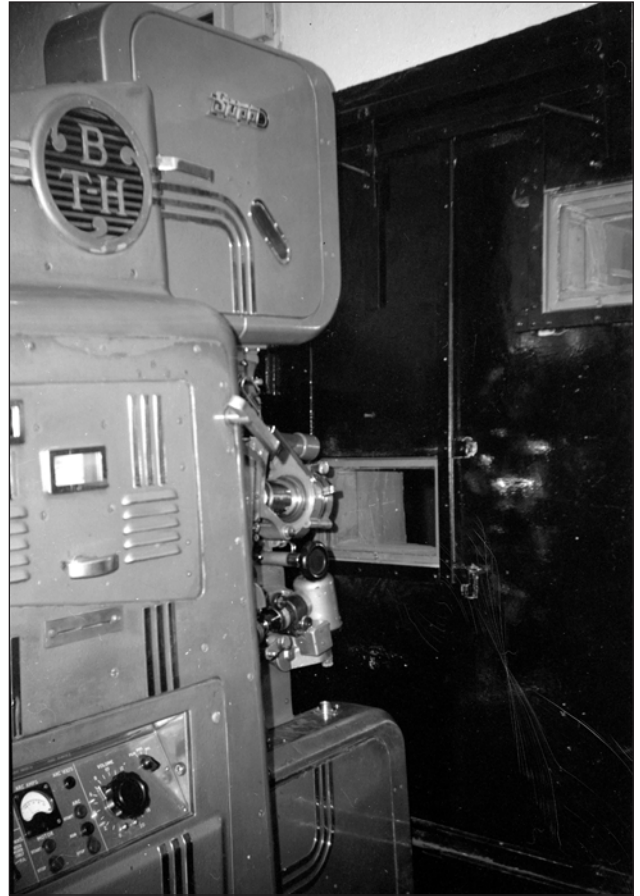
I joined the News Theatre in 1957 as a trainee, and a very green one at that. The hierarchy of the cinema world was headed by the Head Projectionist, universally referred as Chief, seniority of the "Box" was Second, Third and rarely Fourth, and Trainee, often as in my box, the fourth and Trainee were the same. Things were slightly different at the Sheldon; the main reason being that the operation of a feature house was different from the News Theatre as in the latter the programme lasted an hour and ran Monday to Saturday from 10.15 to 22.15- that is twelve showings a day, with Sunday from 14.00 to 21.15.

However my day started at 09.00 and my first job was to check the gas lighting mantels on the secondary (safety) lighting, as well as all the other bulbs in the theatre, of which there were many. Those gas lights were converted to battery electric and the entire cinema refurbished in 1959, just a year before it was closed. The whole stage was included in the refurbishment including a new screen and curtains (tabs) and masking for Cinemascope, all just for a few months use.

All cinemas had a room referred as a box to house the projection equipment. The News had two modern projectors, six foot tall BTH SUPAs. Sheldon had two ancient projectors with Kalee arcs plus a slide lantern, again with arc lighting. Arc lighting went out with the Ark and I know not of any cinema that uses this source of light in modern times. All cinemas had at least two projectors and some even had three. Essential for showing feature films which were on 35mm film with optical sound at 24 fps.

Film was spooled on to separate reels, typically 6 or 7 for a feature. The News Theatre spliced cartoons and features (not forgetting the adverts!) over four reels, and a reel would last about twenty minutes. In a feature house, projector one would begin the film, and projector two would be prepared and "laced up" with the second reel. The second projector would be fired up a few minutes before the end of reel one and the operator levelled the gate with the leader number (a known equation worked out in each box depending on the uptake of the projector and other factors). On the screen were two "signals" in the top right hand corner, the first the operator started the projector and opened the "dowser", and upon the second signal, the relay or whatever was activated usually by the cry "over!" and the film would continue, hopefully with the audience being completely unaware.

However all boxes had a device for opening one side and closing the other. The News was sophisticated, as you would expect from BTH, with a relay which was pressed at exactly the right moment, whilst the Sheldon had a somewhat primitive cable arrangement. The sound was transferred by a simple pole switch whereas the News was entirely automatic. Mind you, the changeover was used



One of the two BTH SUPA projectors at the News Theatre



*The last Chief Projectionist at the News Theatre, Charles Golder; watching the aperture above the gate for his cue to show *The Queen* for the very last time at 22.25 on 16th April 1960.*

rarely at the News Theatre, and the photograph above not only illustrates the changeover in practice, but is a unique shot of the very last ever running of *The Queen* at the end of the closing night of the News Theatre in 1960.

Today, for those that are left the scene is very different, one projector suffices, no arc's, and the film is supplied on what are called Todd-AO (albeit the latter is really 70mm film with optical and magnetic sound) but those 35mm reels have the whole film in one go, and the merry go round system enables it to self rewind- believe me they have got it easy today!

March 2013: John Yates (Inspector of Historic Buildings, English Heritage)

The First Iron-framed Building in the World: Ditherington Flax Mill. Its History and Restoration.

John Yates presented the most cogent argument we have yet had for the appropriate preservation of important industrial buildings. Arguably, few are more important than the world's first multi-storey, cast iron framed building built in Shrewsbury in 1797 not far from the iconic Iron Bridge in Coalbrookdale

As Inspector of Historic Buildings for English Heritage, John was able to give us the insider's line on the multitude of issues facing those charged with the preservation and/or conservation of the fabric of our industrial heritage. It is a task bedevilled by conflicting interests, often underfunded and dependent upon public donations in some form or another.

Happily, the future for the Ditherington buildings (the site includes several other important iron-framed structures contemporaneous with the Flax Mill) is looking tolerably secure. English Heritage acquired the derelict buildings in 2005, and has since been working with a steering group made up of Shropshire Council, the Homes and Communities Agency, the Friends of the Flax Mill Maltings and architects of the scheme Feilden Clegg Bradley Studios, to find a new use for the site.

The goal is to create a long-term future for the historic buildings and for the community of which they have so long been a part. The buildings have supported 90 years of flax production and 90 years of barley malting. Today the whole site is in need of a new sense of purpose and identity to ensure its survival and productive use for the next 100 years and beyond.

The site is large and complex and in need of serious repair and reinvention. The mill buildings have been a huge feature on the local landscape for over 200 years but, more recently, have been empty, abandoned and decaying.

Four buildings have been selected for the first phase of the development and a substantial Heritage Lottery Fund application has recently been submitted to secure part of the funding needed to bring them into a third century of productive use.

This first phase will carefully conserve and reuse some of the key historic buildings which include the Main Mill from 1797, the Kiln from the maltings phase in 1898, the Dye and Stove House and the Office and Stables along with works to ensure visual and physical access. This restoration will provide an 'exemplar' in how modern technology and innovation can be applied to ensure a sustainable future for these important historic buildings.

Once the Main Mill and associated buildings are repaired and brought back into use the remainder of the historic buildings on site will be more attractive to potential users and investors. The complete restoration of the historic site will then stimulate the final phase of development of the full site which will include commercial and residential buildings. This in turn will significantly boost the local and regional economies and will make a real difference to the lives of local people, particularly on the northern side of Shrewsbury.

But what is it that is to be preserved? Beneath the creation of these innovative structures in a somewhat unlikely market town in Shropshire lie the roots of the Industrial Revolution. 1797 was a significant year for Shrewsbury. For 500 years the town had been on the trade route for wool from Wales to Europe, this trade was in

severe decline because of European conflicts. Secondly, two canals reached the town, one from the East and one from the South. Thirdly, the Midlands Enlightenment was flowering across the region.

The processing of flax was one possible diversification from the wool trade and a suitable mill was needed. One recognised danger was that of fire and this would be minimised by a structure combining cast iron columns and beams, a system which later developed into the modern steel frame which made skyscrapers possible. The Flax Mill's architect was Charles Bage, it was built for John Marshall of Leeds and the brothers Thomas and Benjamin Benyon. Bage, was also a partner in the venture which was dissolved in 1804, the mill being retained by John Marshall. Another Mill was built by the other partners nearby. These two flax mills provided the 'chief manufacture' of Shrewsbury (according to an 1851 directory).

Illustrations of the ironwork showed how slender were the cruciform tapered columns and beams. Calculations indicate a safety factor of only 2 when today 5 would be the norm. Brick vaulted ceilings fill the 10 foot span between the beams. The centre row of columns on some floors are shorter with an open capital or frame to the beam to allow shafting to run the length of the building. This shafting and other equipment was powered by a Boulton & Watt beam engine at one end of the building and a Leeds manufactured engine at the other.

Overall the Mill measures 200 feet x 40 feet and rises to 5 storeys. An excellent piece of computer-generated action made the skeleton of the structure come to life and allowed us to enjoy the quality of its design and execution. Further illustrations of the investigations into the details of the structure confirmed the original thinking of its designers.

Amongst the other listed buildings on the site are The Cross Mill (an iron framed building replaced a wooden one burnt down in 1812), The Apprentice House also from 1812, The Warehouse (1805) and the Stable and Offices of 1804. The Dye and Stovehouse was added in 1850 and the Malt Kiln in 1898.

The 1882 OS map shows a 'Thread Manufactory' on the site which is alongside the Shrewsbury branch of the Shropshire Union Canal and with a siding off the Crewe & Shrewsbury Branch of the L & N W R. Well located indeed, and Shrewsbury thread was regarded as a premium product. So much so that the incumbent member of the Marshall family sold the Mill in 1887 – entrepreneur to country gentry in three generations.

The Mill remained empty for a decade until it was bought by William Jones, an established maltster in the town and it entered its second existence in a new industry. On the 1927 OS map it is shown as 'Shropshire Maltings' alongside the canal. One continuity from the early days also shown are the groups of 'cluster' dwellings – groups of four back-to-backs across the canal from the Mill.

Sadly, to date no illustrations of the Mill or its ancillary buildings in its days as a flax mill have been found. Perhaps something will turn up. In the meantime it is to be hoped that the proposed development will gain funding and progress smoothly so as to preserve a truly important example of our industrial heritage. An iron-framed, gas-lit, steam-powered Mill in an oil-lit, timber-framed county town.

April 2013: Richard Thomasson*Ariel Motorcycles from Selly Oak*

Given its relatively short life as an independent company and the low volume production of a somewhat limited product range, Ariel Motorcycles enjoyed, and still enjoys an enthusiastic following amongst its devotees.

Richard Thomasson is one of them and his review of the machines from Selly Oak drew a large audience, which included a number of visiting motorcyclists, to hear the history of the House of the Horse.

The story was liberally illustrated with archive photographs, contemporary restorations and a range of advertising material that latterly seemed more appropriate to sports cars than powerful motorcycles. Scarcely a hard hat in sight, but plenty of glamour.

The original company was established in 1870 by James Starley and William Hillman to make bicycles. After a few false starts Ariel Motorcycles began to build machines in the early 1890s at Bournbrook, Selly Oak, as part of the Dunlop Group. Perhaps Dunlop wanted to concentrate on its other businesses and in 1897 Ariel was sold to Cycle Components. At the 1898 National Cycle Show the company exhibited a tricycle powered by a 1 ¾ hp de Dion engine and made under license from the British Motor Co Ltd, according to a contemporary advertisement.

A remarkable number of early examples of Ariel machines survive, including one from 1901 powered by a Minerva engine and a restored 1914 TT Replica. This interesting machine has a rear hub containing a clutch and three gears made by Sturmeay Archer. The hub was stripped down by the restorer who, after taking a month to reassemble the 30 individual plates and other parts, vowed not to repeat the feat!

Once WW1 was over Ariel machines began to look more like a motorcycle with a proper gearbox, a twin cylinder engine but still with a belt drive to help damp out the engine pulses. By 1926 a substantial works had been built alongside the canal, simplifying amongst other things, coal deliveries.

Perhaps the most significant event in the company's history was the arrival in 1925 of Val Page from engine maker JAP (J A Prestwich). Page immediately stamped his mark on the company and started to bring the Ariel machines up to date, beginning with decent 7" brakes.

Various weird and wonderful exploits took place during the 1920s, one especially whacky one mounted a motorcycle onto two pontoons and proceeded to motor across the Channel. Having arrived in France, the two riders turned round and crossed back to England!

The Wall Street crash in 1929 had a dramatic effect on business and the Cycle Components Group of Companies was put into receivership. Jack Sangster was able to buy the tooling from the receiver and Ariel JS came into being. Sangster strengthened the engineering team by recruiting Edward Turner. One of Turner's first bikes was the Ariel Square Four in 1930.

This machine became the most famous of the Ariel range. Originally a 500cc, overhead camshaft engine it was successively developed to 600cc and finally 1,000cc. It was quite complicated for its modest power output (around 40 bhp), but it did produce lots of torque. Square Fours were famously capable of 10 to 100 mph in top gear and some 15,000 of all variants were built.

Ariel produced a number of innovations, prominent amongst which was a centrifugal filter built into a crankshaft

web. This was so efficient that clearing the debris during an overhaul required it to be drilled out, so compacted did it become.

The 1930s were busy times and one photograph of the crowded works showed the variety of machines produced, and how close the assembly area was to the finished stock. The 500cc OHV single was a popular model and even featured in a dirt track pre-event entertainment chariot race.

The model range expanded during the last years of peace as was shown in a series of contemporary advertisements. A number of models featured high level exhausts which looked certain to cause burnt knees and singed luggage. To say nothing of the discomfort to any pillion passenger! A number of engines utilised side valve configurations in the interests of reliability and reduced damage in the event of valve failure, which was not uncommon until materials technology improved.

During WW2 production was largely turned over to military machines. A 350cc OHV machine with high ground clearance and good brakes was initially ordered by the French Government but due to unfortunate circumstances they were unable to take delivery and the machines were diverted to the British forces. In total, Ariel produced 47,599 bikes for the War Department.

In 1944 Sangster sold the business to BSA but the Ariel brand continued to have its own identity and this was presented in a series of advertisements that cast some doubt on the suitability of the clothing being worn for meeting the rigours of motorcycling. Flat caps and plus fours are one thing but short sleeved summer dresses and lounge suits are quite another.

Nonetheless, Ariel steadily developed a loyal band of owners and in 1951 The Ariel Owners Motor Cycle Club was formed at the famous (or infamous) Ace Café on London's North Circular Road. The contemporary advertising strap line 'Leaders of Design' was equally at home at the Festival of Britain and the Ace.

Technical innovation continued with rear suspension and telescopic front forks, better saddles and a welcome spring absorber on the end of the crankshaft to damp down engine pulses. Ariel machines with their excellent torque characteristics had always been popular with sidecar enthusiasts but the advent of the BMC Mini at about the same price as a combination outfit spelt the end for the sidecar.

Ariel sought to break new ground with the Leader in 1958. Combining the weather protection of a scooter with the performance of a proper motor cycle it was popular with the Police and boasted trailing-arm front suspension, luggage capacity and, a world first, indicators.

Despite variants on the Leader theme such as the Arrow and the Pixie, Ariel eventually could not compete against Japanese imports and the company closed in 1966.

Richard closed with a review of Ariel activities and some interesting 'might-have-beens'. Never an out and out racer, there were no TT victories but the marque always performed well in trials and scrambles.

The Owners Club is very active with branches throughout the world offering events, advice and spares. The bikes are reliable, but they do wear out! There is even talk of the name being revived; in the meantime machines and parts are available for any enthusiast prepared to take on a restoration project. It can be most rewarding.