

INDUSTRIAL ARCHAEOLOGY NEWS

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THE BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

FREE TO MEMBERS OF AIA



**Glenfield Tunnel • Hetty Winding Engine • Whitechapel Bell Foundry
Identifying Artefacts • Kerbstone Marks • Museum Charging**



INDUSTRIAL ARCHAEOLOGY NEWS 180 Spring 2017

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Leigh Mill Spinners engine restoration



Leigh Mill engine after building weatherproofed

One of the Restoration Grants made by the AIA in 2016 was for £14,900 towards work on the Leigh Mill Spinners engine.

The engine house contains a Yate and Thom Twin Horizontal Cross Compound engine which generated some 1800 horse power. It was constructed in 1925 and is the 3rd largest mill engine of its kind in the UK. The engine house was restored in 2015 with help from Historic England, WREN, Viridor, Wigan Council, Trusthouse, and Pilgrim Trust. This removed the danger of the collapse of the roof, removed considerable quantities of asbestos and repaired and reglazed the windows. This made the building safe and usable and has allowed the restoration of the engine to working order to commence.

When the Trust took over the engine house, the engine had been locked up for fifteen years. It

had previously been visited by Northern Mill Engine Society so still had oil within its pistons. It appeared to be largely intact but some smaller parts had been removed.

The Trust removed asbestos and the casings to expose the main structure. This has been cleaned and oiled and in some cases painted. They are reaching the limit of what can be achieved by hand and now with the help of AIA they can now:

- Commission and accredit the crane
- Achieve the operation of the Barring Engine using compressed air
- Repair or replace key parts

The intention is to be able to turn the engine manually to assess it for future repair works as part of the process of returning it to full operation.



Early work – engine cleaned up

COVER PICTURE

There is a light at the end....! A view inside Glenfield Tunnel with daylight flooding down from one of the access shafts and showing concrete strengthening at one of the weak points.

Photo Keith Rose

Glenfield Tunnel – in 1832, the Longest Railway Tunnel in the World

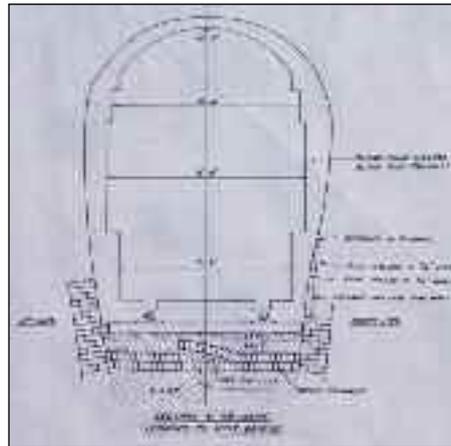
As the 'Leicester Journal' duly reported on 20 July, 1832: 'The railway between Leicester and Bagworth opened last Tuesday, 17 July. As early as 7 am numbers were seen entering the town for the purpose of enjoying so novel a sight and partaking of the festivities. By 10 am the company, furnished with cards of admission, took their seats in the different carriages. This done, the engine was brought down to the train and attached. It moved a short distance at 5 mph and was brought back for the gratification of the immense number of spectators. The whole thing then advanced at a very rapid pace amidst deafening shouts of crowds which lined the side of the road. It soon arrived at the entrance to the Glenfield Tunnel.....'

David Pearce, Leicestershire Industrial History Society

1832: a momentous year in more ways than one. The Great Reform Act began a change to the face of British politics by increasing the male electorate by about 300,000. Women over the age of 30 had to wait another 86 years! Young Alexandrina Victoria started a daily diary – a practice she continued throughout her reign that was to begin five years later. In Leicester, James Cook, a bookbinder, was executed for murder and hung from irons on a gibbet – the last time this practice was carried out in the City. Oh, and as the *Leicester Journal* reported, a locomotive hauling a train of ten converted coal wagons started its journey with some 400 people on board from the coal wharf at West Bridge en route to Bagworth, 11 miles (18km) away. Perhaps better known for the part it played in transporting a confident Richard III to Bosworth Field, and his later somewhat ignominious return, West Bridge, and more particularly its coal wharf, was to become the Leicester terminus for the Leicester to Swannington Railway. The railway line was built to transport coal from the north-west Leicestershire coalfields to the City to replace the existing, but expensive, pack horse, tramway and canal system via Loughborough. The business case made for its creation was that it would reduce the cost of getting the coal into Leicester.

The mined coal began its journey to Leicester at Swannington where a stationary steam engine, designed and built by George Stephenson, was used to wind the coal wagons up an inclined plane linked by rail to another inclined plane at Bagworth, where it combined to connect the various collieries in the area for the onward shipment of the coal to the West Bridge Wharf. Before it could reach the wharf at West Bridge a major obstacle in the form of the high ground between Leicester and Glenfield, then a largish village of just over 300, had to be overcome. Alternatives were considered: a tunnel based on the 'cut and cover' process much favoured for canal tunnel construction, or inclined planes at either side of the high ground that separated Glenfield from Leicester. Both were discounted as

being impractical and it was decided to drive a tunnel straight through supposedly solid spoil. Alas, this was not as simple as at first thought. The tunnel would need to be much loftier to accommodate the height of the locomotive – an imprecise art in these early days of locomotive design! Construction of the tunnel, at just over a mile (1.6km) in length would also make it one of the world's first underground routes for steam driven locomotive engines. Helped by three large access shafts and another 12 ventilation shafts (possibly used as trial borings that, unfortunately, did not fully expose the extent of the problems that were to be encountered), tunneling began from both ends. The navvies soon encountered running sand and clay, and it was realized that the tunnel would have to be lined. In the event, a wooden shell and a brick lining 35-45 cm (14 to 18in) was needed at vulnerable parts. This cost just over £11 per metre, and increased the original budget by 75%. It has been estimated that about five million bricks were used, all made locally. Such was the variation in quality of the bricks that the resident assistant engineer had to inspect the bricks *three times a week*.



Cross section of Tunnel showing disturbance to the Tunnel structure. This drawing is undated, but follows on from a survey probably carried out during the British Railways era sometime between 1948 and 1994.

He obviously carried out his inspections diligently as the tunnel structure has survived to this day and is a testament to Stephenson, the engineers and the navvies employed in its construction. Glenfield Tunnel served its purpose, but has been disused since the closure of the branch line from Desford Junction to West Bridge in the 1960s. Following its closure and all evidence of the railway line consigned to history, the tunnel was purchased by Leicester City Council and remained closed until the late summer of 2013. The inspiration for its re-opening to visitors came from David Lyne, Secretary of the Leicestershire Industrial History Society, when he was considering how the Society could contribute to local and national Heritage Day events. The LIHS, formed in 1969, was already heavily involved with the Leicester to Swannington Railway through its association



Facsimile of railway ticket for the inaugural journey, July 17th 1832

with the Swannington Heritage Trust and to David, the reopening of the tunnel as a visitor attraction seemed a logical extension to the industrial heritage of the county.

Today, only the Glenfield end of the tunnel is open; the land at the City end was sold for building purposes and a manhole (suitably covered!) situated in a garden leads down to the tunnel. The portal at Glenfield, together with the 13 active ventilation and construction shafts – several of which can still be seen from roads above the tunnel – are the only visible signs that a railway line once existed below ground. Leicester City Council carried out studies as to the safety of the tunnel structure, and has had steel fibre reinforced concrete strips, moulded to the shape of the brickwork, cast inside the tunnel at all the 39 points where potential weakness had been detected by their surveys. The surface stacks of each air shaft (which are Grade II listed) were repaired and refurbished where necessary.

Following agreement and further support from the Leicester City Council, LIHS have, since the autumn of 2013, been escorting visitors partway down tunnel, first to the original 100yd (92mtr) marker, and since 2015, the 400yd, or 366mtr marker. Today, LIHS helps to maintain the Glenfield Tunnel and provides escorted pre-booked tours coinciding with the Council of British Archeology and the Heritage Open Day events between April and October. LIHS also conducts tours by arrangement for local schools and other organizations.

For 2017, the Glenfield Tunnel will be open for visitors on the following dates:

The weekends of 15/16 July 22/23 July 29/30 July and 7, 8, 9 and 10 September.

Tours, lasting approximately an hour, are scheduled at the following times: 10.00am, 11.30am, 2.15pm and 3.30pm.

The LIHS have produced a series of booklets to provide more information about the Glenfield Tunnel. A full list of publications and order forms from LIHS can be found at www.lihs.org.uk

**VISIT THE AIA
WEBSITE**

www.industrial-archaeology.org

The 'Hetty' Winding Engine

In 1874 the Great Western Colliery Company began sinking two new pits at its colliery near Hopkinstown, Pontypridd. For the new 'No.1' pit they ordered a steam winding engine that had a greater capacity than any then working in South Wales. The commissioning of this new engine in June 1876 was therefore quite an occasion. The directors arrived from Bristol and Cardiff in a special carriage attached to the ordinary train on the Taff Vale Railway. To great applause in the crowded engine-house the engine was started by the young Miss Hetty Snow, stepdaughter of Geo. J. Bryant the chairman of the company, who had previously broken a bottle of wine against the headframe and another on the engine. Her name is still visible on the wall inside the building and the pit and its engine have ever since been known as 'the Hetty'.



The Hetty engine house in 1967

photo Brian Davies

Brian Davies

The Hetty was not the first pit on this site. In 1851 John Calvert, a Yorkshireman who had begun as a railway contractor, opened the Gyfeillion pit, 149 yards deep and worked by a beam engine. In 1854 this pit was bought on the initiative of Daniel Gooch to supply coal (coking coal) for the locomotives of the Great Western Railway. Ten years later Calvert bought back the colliery, but it soon passed into the ownership of the Great Western Colliery Company, whose relationship, if any, with the Great Western Railway requires further investigation.

The two new pits were sunk to the deeper steam coal seams. The Hetty was the main coal-winding shaft, and was 392 yards deep. The engine wound two drams (trams) at a time, each carrying a ton and a half of coal. Output from this pit alone averaged 250,000 tons per year and manpower reached its peak of 1,210 in 1912.

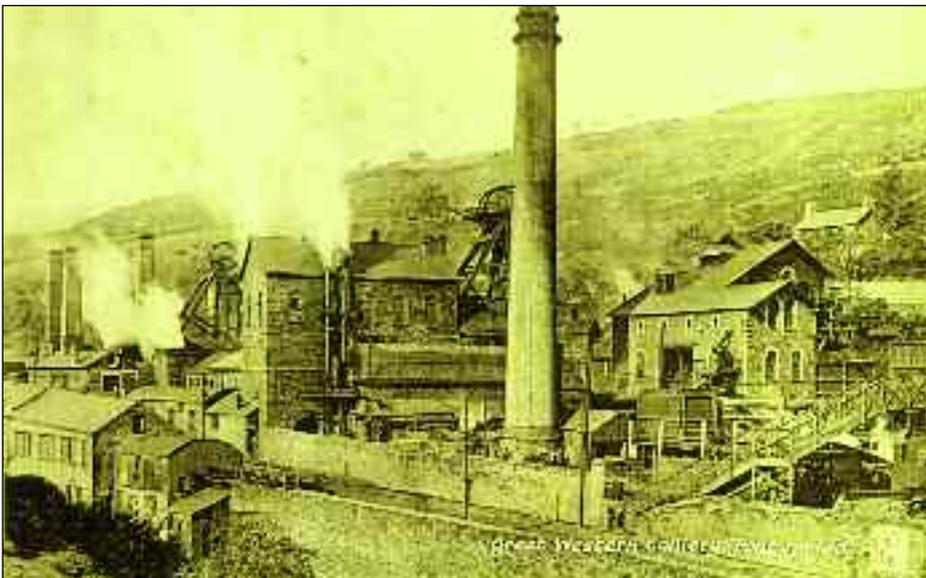
The engine was built by Barker and Cope of Kildgrove Staffs, and is a two-cylinder horizontal simple. When built its cylinders were 40" bore by 6' stroke, working at 60 psi and each with four Cornish drop valves. These were not arranged in pairs as on later engines. Instead the two admission valves were on the side of each cylinder closest to the centrally positioned regulator valve while the exhaust valves were on the outer sides of the cylinders. The engine used flat wire rope, coiling onto two reels of 16' diameter.

For its first thirty years of operation the engine did not have a steam-brake, only a footbrake, and neither did it have any safety gear to prevent overwinding. The danger of this situation became clear on Sunday 1 August 1880, when an overwind brought one of the cages up through the headgear, taking a sheave off its bearings and sending it spinning over the roof of

the enginehouse and across the main Rhondda road, where it demolished the end wall of a small cottage and came to rest on the riverbank. Fortunately no-one was hurt.

The engineman's controls are on a driving platform raised on fluted cast-iron pillars and positioned centrally between the cylinders and in line with the drum. Experience elsewhere soon proved that this put the engineman in a vulnerable position if a rope should break, when the loose end could come flailing into the enginehouse, so it soon became normal practice for the engineman's driving position to be to one side of the engine. The Hetty footbrake was actuated by a pedal and might require the full weight of the engineman, so he had to stand while driving. Both these features remain. Mining engineering textbooks state emphatically that steam brakes are always operated by lever, with the engineman in a sitting position. The Hetty is the exception to the rule, as the old footpedal was retained when a steam brake was later fitted.

By 1900 the engine was obsolescent, both because of its use of flat rope and its low working pressure of 60 psi. Very few engines from before 1880 survived past 1900 in the South Wales coalfield, which was expanding and at the forefront of innovation in winding technology. The problem of how to improve the winding gear at the Hetty was to be tackled by Hugh Bramwell, who had taken up his first post with the Great Western Colliery Company in 1892. Bramwell was a North of England man and an innovative mechanical engineer, who soon set about modernising the company's collieries, particularly in respect of their winding machinery. In 1892 he installed the first compound winding engine in South Wales (built by John Fowler of Leeds) at Ty Mawr colliery and in 1908 he installed the first large electric winder in the UK at the company's Maritime colliery in Pontypridd. Nevertheless, his most productive pit remained the Hetty, with its old engine from 1875.



The colliery c.1900, Hetty engine house in centre



The Hetty engine, winding drum in background on Open Day

photo Brian Davies

The normal course of action would have been to build a new engine-house either behind the existing winder or across the pit from it, construct a new headframe around the old one and then change over the winding ropes when the installation was complete, thus avoiding any disruption of production. This was impossible at the Hetty because of the extremely cramped layout of the site on a narrow strip of land between the road and the railway. The only way to deal with the problem was to re-build the engine in-situ, piecemeal over several years.

The first phase was the replacement of the original timber headframe. A new steel headframe was built around the old frame by R.J. Neville of Llanelly. Completed in 1903, this is now the oldest rolled steel joist headframe surviving in Wales.

Next came the engine brake and safety gear. Hugh Bramwell stated at a discussion on the prevention of overwinding at a meeting of the South Wales Institute of Engineers that none of his engines had safety gear because nothing available met his requirements. However, Frank Leonard Whitmore, a prolific inventor of mining machinery, soon afterwards designed a 'safety device for preventing overspeed and overwinding' that obviously satisfied Bramwell, and the engine still has this equipment with its brass plate announcing 'Patent Applied For'. Whitmore made his patent application in December 1904 and it was granted in February 1905, so the device that survives on the Hetty engine, acting upon a Whitmore steam brake by H.J.H. King of Nailsworth, may well be both the first and the last of its type.

Then came the drum. Bramwell wanted to change from flat wire rope to round wire rope, but the engine had been built with narrow flat rope reels (narrow because flat rope coils on top

of itself) so there was not enough room for a conventional cylindrical drum on which round rope coils like cotton on a reel. Bramwell designed and built a parallel drum on which the rope coils back on top of itself. This had previously been thought impossible, because of the friction and consequent strain on the rope at the point at which the drum is full and the next coil has to rise to coil over its predecessor. Bramwell solved this problem by making the barrel of the drum of grooved cast-iron sections and also grooving the

flange of the drum to guide the rope up and over the previous coil. This drum, built in 1909, was the first of its kind in the UK.

Last came the cylinders. The two old 40" cylinders working at 60psi with Cornish drop-valves were replaced over Christmas 1910 by two new 34" cylinders working at 120psi, with piston valves and expansion valve-gear by Worsley Mesnes of Wigan. Hugh Bramwell was an admirer of G.J. Churchward and it would be interesting to know if this decision owed anything to Churchward's experiments first with compounds and later with piston valves working expansively.

The engine wound coal until 1926 and raised a total of over 12 million tons in its working life. Then the Hetty lived on in quiet semi-retirement as the 'second way out' for Ty Mawr colliery until the closure of that pit in 1983. George Downes the last engineman signed off by painting his name on the wall on 26/11/83, only a few yards from – but 107 years after – 'Hetty Snow'.

The work of volunteers over 16 years has restored the engine to working order, and a building preservation trust has just reached an agreement with the landowner, the local borough council, to take the site on a 30 year lease. Much remains to be done, particularly on the headframe and the adjacent fan-house which it is hoped could accommodate an air compressor or even a boiler.

Volunteers work on the site every Sunday afternoon, and visitors are welcome. Each September a portable air compressor is hired and the engine is run for local school groups and for the general public.

In 2017 the engine will be running and open to the public on Saturday 22 September from 10 to 5 and on Sunday 23 September from 11 to 3.



The Hetty engine, cylinder end

photo Brian Davies

To Charge Or Not to Charge? AIM Launches Admissions Charging Research

New research published by the Association of Independent Museums (AIM) will help museums understand the impact of charging for admission, or not, on all aspects of operating a successful museum.

The revealing results dispel some myths that persist around this issue and will enable museums to make evidence-based decisions in this sometimes contentious area – but one that is vital to museums' future sustainability. The research report is accompanied by a practical guide that museums can use to help them make decisions about whether an admission charge is right for their museum and if so, what price they should set.

The report and practical guide are now available to download from the AIM website.

What a museum charges has no effect on the diversity of its audience – both charging and free-entry museums have similar demographic profiles for their visitors.

Spend in shops and cafes, as well as donations from visitors, are more influenced by other factors than whether a museum charges for admission or not.

The research is very timely as an increasing number of museums are thinking about introducing admission charges, in response to reductions in local authority funding. However, it also has valuable information for museums considering introducing free admission and for those that already have an admission charge – where the research showed there was usually little impact in terms of visitor number or diversity when prices were increased and a wide range of charging structures, some very innovative, are highlighted.

The key headlines

It isn't really possible to define a particular group of museums that charge or allow free entry by how they are run. One in three independent museums allow free entry whilst one in three local authority-operated museums charge for admission.

Whether a museum charges or not has no effect on the diversity of its audience. The social/demographic mix of audiences is very similar in museums, whether they charge or not. The ability of museums to attract donations is not enhanced by allowing free entry – other factors are much more important.

Secondary spend on retail or catering is not reduced by charging admission – other factors such as the quality of the offer have much more influence. Visitors to museums that charge entry are more likely to visit the shop and café than those visiting free-entry museums. Dwell time of visitors is longer in museums that charge admission.

There is evidence that charging entry improves the quality of the visitor welcome and enables museums to capture valuable information about audiences.

Free entry museums report that the policy has a positive impact on stakeholders, local communities and their reputation, while charging museums say there is understanding among these groups about the rationale for charging.

If a museum is considering making changes to its admission policy such as introducing or increasing entry charges, experience indicates that communication is vital so that the reasons for any change are clear. Staff and volunteers need to be confident about explaining the change to visitors.

Birmingham Museums Trust introduced charging for its heritage sites in 2011 and found that the response of staff to charging being introduced was critical, with some being positive about charging, and others being apologetic. The trust worked hard to ensure that the culture was positive about charging, with an emphasis on quality and value for money. More recently, it introduced a charge of £3 for children with no

negative comments or drop in numbers. At Thinktank, the introduction of charging for entry to the planetarium reduced queues, and created a sense of exclusivity and extra value, improving visitor experience and raising income.

Elgin Museum moved from charging to free entry in 2013, aiming to make the museum more accessible. The museum arranged corporate sponsorship support to help offset the lost admissions income initially. Visitor numbers almost doubled. The implementation of a proactive donations strategy (including effective use of donation boxes, building on good practice guidance) helped to offset much of the lost admissions income, which alongside ongoing sponsorship has put the museum in an improved financial situation. Greater engagement between the museum and the local community was another positive, exemplified through the increase in the numbers of visiting children.

Westbury Cement Works



Westbury cement works chimney, 7am 18 September 2016

photo Peter Stanier

A major Wiltshire industrial landmark was demolished at 7am on Sunday 18 September, watched by a very large crowd which had been assembling since before first light on and around the White Horse hill at Westbury. The landmark cement works chimney (hardly 'iconic') was just 1m shorter than Salisbury cathedral spire, and it was gone in seconds once the demolition button was pressed by a local schoolgirl. The cement works was opened in 1962 and when fully developed had two rotating steel tube kilns about 150m long. The first kiln was the largest of its type when installed, and Westbury was at one time the sixth largest cement works in the country. The location of the plant was well-planned, with sidings alongside the main line railway providing distribution throughout the region. The main raw materials were Kimmeridge clay dug from pits next to the works and chalk from the escarpment above. Great care was taken to protect the escarpment and its famous White Horse by

locating the large chalk pit just behind the skyline and screened by trees. The quarried chalk was ground at the pit and sent as a slurry down to the works by pipeline. The cement works was a major employer in Westbury, where it was loved or hated, and produced around 25 million tonnes of cement during its existence. The owner Blue Circle was taken over in 2001 by Lafarge, becoming Lafarge Tarmac in 2013 and then just Tarmac.

Apart from its slender chimney, the large cement works was somehow dwarfed in the landscape when viewed from the White Horse. Now lost, it is a prime example of an industry which has come and gone within living memory, but perhaps too recent to be considered as 'archaeology'. Big news for Wiltshire, but outclassed just 11 days earlier by the demolition of the Grain A power station chimney in Kent, said in the press to have been the largest concrete structure ever demolished in the country.

Peter Stanier

Helmshore Mills Museum

Bale opening



Helmshore Mills Museum was closed by Lancashire County Council at the end of September. The photos show the Lower Spinning Mill (Whitaker's) which was the last to spin cotton by condenser mules (similar to wool) using cotton waste, on historic machinery installed here in the 1920s.

Card clothing



The Helmshore Mills Museum consists of the Higher Mill: a water-powered fulling mill that has some of the older machinery in the collection, and is owned by a trust, and the Lower Mill: a spinning mill which Lancashire County Council bought when L. Whitaker & Sons was going to close, and added it to Higher Mill next door. The two interconnect and the displays, for example a genuine Arkwright water frame, were recently revamped with HLF support.

First cards

The Lancashire Museums website includes the note: *There has been an expression of interest from a potential new operator. We will keep you updated on progress.*

Mules



All photos Mark Watson

Railway Heritage Trust Report



Stoke on Trent downside entrance

photo Railway Heritage Trust

The Trust receives income, largely from Network Rail, for supporting projects on the rail network which could not be justified on purely commercial grounds.

In 2015/16 the Trust supported 46 projects with grants totalling £1.8m. The grants funded repair and restoration work carried out on the heritage aspects of buildings and structures in Network Rail's ownership. In addition the grants drew in £4.5m of external funding.

Of the two largest grants for £250,000 each, one went towards the restoration of C H Driver's stunning gothic wall on the south side of London Bridge Station, and the other to improve the lighting in the Dark Arches under Leeds Station. At the other extreme, the Trust gave a grant of less than a thousand pounds for a new bench at Ridgmont Station in Bedfordshire.

Grants of over £50,000 each were made for:

- Cambridge Station: Cable removal & tidying up £207,000;
- Cleethorpes Station: Refurbishment of central block of MS&LR building £50,000 into cycle workshop & store;
- Leeds Station: Dark Arches; lighting improvements for conversion to retail use £250,000;
- London Bridge Station: Restoration of Driver arches on St Thomas Street £250,000;
- Manchester Victoria Station: Heritage works £75,000;
- Newark Castle Station: Main building restoration £79,250;
- Stoke on Trent Station: Works to downside entrance building £75,000;
- Aberdour Signal Box: Conversion to studio £66,929



New bench at Ridgmont Station, Bedfordshire

photo Railway Heritage Trust

Repairs at Wilton Windmill

Wilton Windmill near Great Bedwyn, Wiltshire, became sail-less after the two patent and two common sails were taken down in early August and sent away for repairs by millwrights at Mapledurham. They required some attention having been on the windmill since its restoration from dereliction to working order in 1972-76. The brick tower mill dates from 1821 and has a notable fantail for keeping the cap and thus the sails turned into the wind. The mill is owned by Wiltshire County Council and run by the Wilton Windmill Trust who produce flour here when the mill is working. It is a prominent landmark from the south when travelling on the A338 between Burbage and Hungerford. Wilton village is near the Crofton beam engines on the Kennet & Avon Canal and Great Bedwyn, also well worth visiting.

Peter Stanier



Wilton Windmill after the sails were removed for repairs in August 201

photo Peter Stanier

A warm welcome to our new members

Paul Collins, Stourbridge
John Outram, Stowe
Chris Slater, Chester
Brian Temple, Helensburgh
David Wood, Swansea.
John Copping, Warwick
Joanna Layton, Puvlerbatch
Richard Godley, Chesterfield
Hugh Howes, Chorleywood
Chris Slater, Chester

Whitechapel Bell Foundry



Whitechapel Bell Foundry front door

photo Mark Watson

On 1 December 2016 Alan Hughes, proprietor of the Whitechapel Bell Foundry Ltd announced: "... with regret, by May 2017 the foundry will cease its activities at the Whitechapel Road site that it has occupied since its move there in 1738. The company intends to complete work on all projects presently in hand during the coming months. It will not be entering into new contracts for the time being whilst discussions with the company's staff and other interested parties regarding the future direction, ownership, and location of the company are ongoing.

The following brief account of the history of the foundry has been drawn from the Survey of London.

The Whitechapel Bell Foundry has been a remarkable survival. Its business cards claim it as 'Britain's oldest manufacturing company' and 'the world's most famous bell foundry' – the first not readily contradicted, the second unverifiable but plausible. It has been said that the bell foundry 'is so connected with the history of Whitechapel that it would be impossible to move it without wanton disregard of the associations of many generations'. The business, principally the making of church bells, has operated continuously in Whitechapel since at least the 1570s. It has been on its present site with the existing house and office buildings since the mid 1740s.

It is said to have first been in Essex Court (later Tewkesbury Court, where Gunthorpe Street is now) and there the great (5¼ ton) clock bell for St Paul's Cathedral was cast in 1716.

From 1701 Richard Phelps was in charge. When he died in August 1738 he was succeeded by Thomas Lester, aged about 35, who had been his foreman. It has been supposed that within the year Lester had moved the foundry into new buildings on the present site on Whitechapel Road.

The seven-bay brick range that is 32 and 34 Whitechapel Road is a single room deep with three rooms in line on each storey. It was built to be

Lester's house and has probably always incorporated an office. The Doric doorcase appears to be an original feature, although the shopfront to the east end is of the early nineteenth century,

Ownership of the property remained divided among descendants of Lester and in 1810 Thomas Mears was still trading as 'late Lester, Pack and Chapman'. On a promotional sheet he listed all the bells cast at the foundry since 1738, – 1,858 in



Rare timber wall crane

photo Mark Watson

total, around 25 per year – including some for St Mary le Bow in 1738, Petersburg in Russia in 1747 and Christ Church, Philadelphia, in 1754.

In 1846 the foundry was enlarged with a new furnace by enclosing the south end of the yard; this was for the making of an 11.5 ton bell for Montreal Cathedral. Another furnace was added two years later and in 1850 Benjamin Price built a 62ft-tall chimney up against the south wall. Rudhalls Gloucester foundry was taken over in 1835 and closed in 1848 and its tuning machine was brought to Whitechapel and housed in a specially built room that ate further into the yard; the smithery to the east was adapted to house a steam engine. The tuning room's largely glazed north-facing wall stands little altered, and the timber beam that housed the head of the tuning machine remains in situ below a lantern-lit roof, the machine itself having been replaced around 1920.

The back foundry was damaged during the Second World War. Proposals to rebuild entirely behind the Whitechapel Road houses emerged in 1958 by when the foundry was already protected by listing. The workshops were considered expendable, but even then it was suggested that the timber jib crane on the east wall should be preserved. The first plans were shelved and a more modest scheme of 1964–5 was postponed for want of capital, although plant and furnaces were replaced. A move entirely out of London was considered. The GLC's Historic Buildings Division became involved in trying to maintain what it considered 'a unique and important living industry where crafts essentially unchanged for 400 years are practised by local craftsmen'. But plans came unstuck again in 1976 when the GLC conceded it was not in a position keep the business in situ. Even so, in the same year the UK gave the USA a Bicentennial Bell cast in Whitechapel. A large new engineering workshop was built in 1979–81 at the back of the site, it was faced with arched yellow stock brick on conservation grounds. In 1984–5 the GLC oversaw and helped pay for underpinning and refurbishment of the front buildings. The shopfront was grained and the external window shutters were renewed and painted dark green.

Arthur Hughes became the foundry manager in 1884 and took charge of operations in 1904. In 1997 proprietorship passed to Arthur Hughes's grandson, Alan Hughes, and his wife, Kathryn. The foundry has continued to manufacture, but not without growing concerns as to its tenability in Whitechapel.

IA News 181 will include a description of the process of bell founding.

Rylands Mill May 1971



Rylands Mill, Wigan May 1971

photo R Carr

Rylands Mill is now on the Victorian Societies list of endangered buildings (*IA News 179*). This photo was taken from a train window over 40 years ago when the mill was in a happier state. Designed by George Woodhouse in 1866, it became an annexe to Wigan Technical College in 1985 but was closed in 2007. It is now in danger as a target for arsonists.

Marks and Materials: Identifying IA Artefacts

Back in 2000, I found myself leading the University of Brighton's short-lived Conservation of Industrial Heritage ('CIH') MSc course. We had assumed that our students would have an understanding of cataloguing techniques, but the practical object-analysis seminar showed that the natural analytical abilities of some individuals were counterbalanced by the inability of others to 'see' an object. Consequently I was asked if the twenty-page 'identification techniques' hand-out could be enlarged to answer some of the difficulties that had been encountered.

John Walter

I had spent many years cataloguing the products of industrial processes, ranging from razor blades, cutlery and edged weapons to tools, scientific instruments and firearms, and it was anticipated that we could recruit individuals who could contribute details of lubricators, pressure gauges, carburettors, planimeters, slide rules, steam whistles and countless other industrial artefacts. The goal was to create a centralised repository of information.

In 2004, I submitted an outline for a postgraduate degree: 'Archiving Industry. An investigation into the classification of industries and their products, and the creation of a publicly-accessible database'. No progress was ever made, so the basis of the idea became the Archiving Industry website. I still hoped that the identification handbook would be useful to anyone with an interest in industrial archaeology!

Materials

Dating of objects has been greatly improved by the introduction of highly sophisticated diagnostic tools. However, these are often expensive, invariably confined to the laboratory, and require special training to use effectively. Consequently, they cannot help the novice unless specialist support is available. It is also true that usefulness in a recent historical sense can be limited: carbon dating, for example, may be of real value to the palaeontologist, but inherent inaccuracy (insignificant if the timescale is measured in millions of years) undermines precise analysis of items from the much more recent past.

Spectrographic analysis can be helpful, giving an accurate guide to the constituents of individual items; it is possible to correlate mineral inclusions with specific geographic locations, but, unfortunately, the great diversity of manufacturing industry—a habitual importer of raw material—reduces the significance of data. Pre-mediaeval metalwork is still often identified more by reference to samples of known provenance or attribution than to spectrometric yardsticks.

None of this helps inexperienced researchers, collectors or enthusiasts to establish the nationality, age or material of an item. All we have are the principal senses: sight, smell and touch.

Unfortunately, smell and touch rarely assist us in the identification of artefacts, which leaves only visual inspection as a useful tool. Yet many metals look very similar—'steel grey', 'silverish'—and electro-plating, usually with nickel or chromium, can often disguise the base material. Wood can be stained, varnished or lacquered, hiding its true colour; and synthetic material can be made in virtually any hue a client specifies.

What is left? To prevent compromising the object, basic non-destructive and non-interventional identification techniques must be used. And, to suit these to a novice, they must use readily available tools.

One answer was found in 'specific gravity' ('SG'), but there can be many complications. The density of wood taken from the same tree can vary, depending on whether it is heart- or sapwood, or even on the environmental factors that shaped its growth. Figures obtained from pure metals are not the same as those that come from alloys, and the density of castings rarely duplicates samples which have been forged or rolled. And results are easily distorted by the presence of impurities.

However, specific gravity provides a comparatively easy way of eliminating possibilities. Consequently, an item with a specific gravity above 2.5 will be metal or metal alloy, and anything in the 1–1.5 range is likely to be synthetic...however much it looks like wood or bone.

Markings

Makers' plates are among the most important sources of information. Many of the earliest bore information which was either cast in relief or engraved into the surface by hand or pantograph. Etching became commonplace in the twentieth century, as it was not only cheaper than engraving (being much less labour-intensive) but also capable of handling complex designs.

Etched maker's marks have been particularly favoured for cutlery, bladed tools and razor blades, and the aluminium-sheet plates that have been applied to electrical equipment or aero-engine components, any application, indeed, where the strength of a thin metal plate or blade can be compromised by stamping.

Marks may be cast integrally with components such as machine-beds or casings. However, though they may often include a date, serial numbers are normally absent; number-groups, assuming they are not dates, are more likely to refer to the 'pattern number'—identifying either the category of the machine or an individual casting pattern to guide replacement.

Simple marks could be stamped, either letter-by-letter, painstakingly, or in a single strike; alternatively, they could be rolled into the surface in one pass or embodied in castings. Unfortunately for the researcher, manufacturers' markings of these types can be very difficult to



This interesting plate, found on a single-cylinder Corliss horizontal engine once installed in Hôpital Emile Roux, Paris, but currently owned by the British Engineerium, Hove, has a considerable tale to tell. The manufacturer's name at the time the plate was made was 'Crepelle & Garand' of Lille, in north-eastern France, successors to 'V. Brasseur'. Brasseur (a maker of American-style engines with Corliss and Wheelock valves) had succeeded the 'former operations' (anciens Ateliers) of Le Gavrian. A check of the catalogues of the 1889 Exposition Universelle reveals that the Grand Prix had been awarded to Brasseur. This in turn shows not only that the hospital engine post-dates the change in company structure, but also that this change dates later than 1889.

distinguish from those applied by retailers, distributors and individuals.

Plates may be made of plastic; others have been printed on tin or tin-foil; and a few have even been manufactured from paper or card, as durability can sometimes be more of a handicap than an asset.

Trade soon became extremely competitive, and so artefacts displayed their makers' names in large painted letters; others relied on transfers, and a few had designs printed onto the thin metal-plate of fuel or coolant tanks. None of these methods were especially durable, and could easily be covered by repainting. However, though printing, painting, silk screening and transfers were essentially flat, they still had a measurable thickness unless carefully removed before refinishing.

Colourful transfers, once popular on stationary gas and oil engines, bicycles and motorcycles, can still be obtained largely as a result of the enthusiasm of individual restorers. They can acknowledge little more than a brand name and the manufacturer, or, alternatively, may be accompanied by a wealth of detail. In addition, lettering styles may give a clue to date...but it has to be remembered that type-founders, at least until swept away by photosetting from the 1970s onward, were notoriously conservative. 'Master letters' of the most popular styles were habitually used for decade after decade.

The language in which a mark has been phrased is often a most important clue to identification, but the task can be complicated by the unfamiliar style of the lettering. Conventional ('Latin') type is most commonly encountered in the English-speaking world, of course, but many other ('non-Latin') forms will be found. These include Arabic, Chinese, Cyrillic, Bengali and

Siamese. Only rarely can these be read by the investigator, though, often with surprising ease, their origins can be identified from characteristic letter forms or numbering systems.

Patent Marks

Patent marks are another important source of information. There can be important pointers. For example, a major change was made to the British patent system on 1 October 1852 when English, Scottish and Irish patents were numbered together for the first time in annual sequences so the year is also required. A British trademark registry was created in 1875, applying marks from 1 January 1877 onward. In 1902, an Act of Parliament ensured that at least some investigation of claims of novelty was made before patents were granted; by 1907, all British patents had been abridged and assessed in 146 classes occupying more than a thousand volumes—wonderful sources of information, but now rarely seen in their entirety.

The 1852-type grant system continued until the end of 1915; from 1 January 1916, however, a new series began at '100001' to run on, supposedly sequentially, without regard to



An engine indicator, assumed from manufacturing details to have been the work of Hannan & Buchanan of Glasgow c. 1890, displays RICHARDS PATENT NO. 10411. But there are obvious problems, as the relevant patent was actually no. 1450 of 1862. Had the indicator been made by the principal licensee, Elliott Brothers, it would be the 10411th made under the terms of the original licence (and made c. 1877). It is more likely to have borne a number linked to Hannan & Buchanan's order-book.

calendar year. A mark PATENT 12345 on an artefact of British origin, therefore, can have several interpretations:

Registry in England before 30 September 1852, the last remnant of a cumulative non-specific system begun in the eighteenth century. (Note: numbers were applied retrospectively.)

Registry in any of the years between 1853 and 1915. In this case, but not infallibly, the marks should be found as PATENT 12345/67—the 12,345th of 1867—as the year date should be included.

An agreement by which a particular patent has been licensed to a manufacturer, common in cases where the inventor lacked suitable finance or production facilities. The mark PATENT 12345



This letterhead of the 1950s is conventional two-colour letterpress. Ephemera are often overlooked as sources of information. Yet, in this case, addresses and the name of directors are confirmed (often a key to dating), and a telegraphic address can be seen. The logos are less helpful: the National Scheme for Disabled Men dated from September 1919, and the Society of British Aircraft Constructors had been formed on 23 March 1916.

would be the 12,345th item to have been made in accordance with the licensing agreement, and, therefore, would not refer directly to the protecting legislation.

Our 'Patent 12345' cannot have been obtained after 1 January 1916, as the new series began at 100001. Progress was initially slow, as only 2812 specifications were accepted in 1916 when ten times this number could have been expected.

Brand names are another obvious source of information. They can appear on a broad range of interrelated items: not only on the artefacts themselves, but also on supporting literature and advertising material. Some marks are easy to identify, particularly if they are either universally known or effectively the same as the name of the user; others can be identified by association with the company name, perhaps found elsewhere on the name plate or cast into a component.

Identifying trademarks is often more difficult than brand names. With a few important exceptions, words are easy to define, categorise and index; but the interpretation of pictorial marks and monograms can be much more subjective.



An accompanying invoice showed that this U.S.-made Swingline stapler had been purchased in 1981. However, the acknowledgement of two U.S. Patents indicate dates of 1960 and 1965. The later date is, therefore, the earliest the tool could have been made. Acquiring a copy of the older patent revealed the name of the inventor.

More information

The CIH course hand-out has become Archiving Industry: identifying items by marks and materials, which, shows how specific details can be used to assist identification. These include constructional materials, language, national identifiers, abbreviations and acronyms, names and numbers, patents, brand names and trademarks. A hundred copies—144-page paperbacks, illustrated largely in colour—will be available in May 2017, price £16.95. More information will be found on the Archiving Industry website or by contacting me directly (johndouglaswalter@gmail.com). I'm still hopeful that, somewhere, what was once a very limited hand-out could prove to be a useful course textbook!

Would you like to edit *Industrial Archaeology Review*?

While the takeover of Maney by Taylor & Francis has caused AIA serious problems in membership administration, which have been explained elsewhere in IA News, it has brought significant benefits in terms of the publication of our journal, *Industrial Archaeology Review*, which is growing in readership and status. T&F, through their Routledge imprint, are probably the world's largest publishers in the field of archaeology and many thousands of individuals and institutions around the world now subscribe to the on-line version of our journal, making it the leading international publication in industrial archaeology. In 2015, there were almost 13,000 downloads of articles from IAR and the editors now receive many unsolicited proposals for articles from the four corners of the world.

Mike Nevell, who co-edits the journal with me, will be taking over as AIA's Chairman in September 2017 and will therefore not be able to continue his editor's role, so we are seeking a replacement. Experience over several years has shown there is great benefit in having two editors of the journal, not just in sharing the workload but also in providing a broader view on editorial matters and, at times like this, providing some continuity when an editor has to stand down. If you are interested in taking on this rewarding role, do please get in touch, initially by e-mail, and then I will be happy to talk to you to explain what the job entails. Previous experience of writing and/or editing academic publications will be an advantage, but is not essential. The process for selecting the new editor will be agreed at the next AIA Council meeting in March, with a view to having Mike's replacement in post by September 2017.

Ian West co-editor,
Industrial Archaeology Review,
ian@ianwest.co.uk

Kerbstone Marks

The Association received this letter in November: Please find attached a GIF of the 170 or so letters chiselled into old Victorian granite kerbstones on a 20-minute walk from my front door (London NW6). They occur every few paces but with no apparent system. Similar letters can be found on old kerbstones all around the country. So far no-one has a definitive theory of why they are there. If you are able to ask your members to see if anyone knows of a historical document that can conclusively explain them it would be much appreciated. Thank you.

Nathan Hartshorn

In a lengthy article on The Geological Society's website, Peter Dolan, Kerbstone conundrum, follows his description of the marks with an analysis of the possible reasons for them:

"On a purely 'first principles' basis the marks could signify one of three things:

Pedigree: The quarryman, quarry or quarry company.

Supply Chain: Distributing haulier, destination or customer.

Local Information: Relating to such things as nearby or buried services, specific use of the adjoining carriageway (eg market stalls), characteristics of nearby dwellings (which brings to mind the red crosses on plague infected houses in 1665)."

He rejects the Pedigree and Supply Chain and focusses on Local Information:

"Supporting this explanation is the geographically widespread use of particular marks,



One of a myriad – what are they for?

like arrows or arrowheads (as previously noted), irrespective of rock type, suggesting they carry some generic meaning. Also, the presence of several marks on a single kerbstone indicates a possibly more complex message than their being a representation of origin or author. The variable quality of marks implies to me that they were made by road-workers and, being often rather poor, unworthy of a Victorian sett-maker. In a few instances, combination marks may lie cheek-by-jowl on the ends of abutting kerbstones suggesting to me that they were marked after laying.

"In contrast to this, examples of marks being cut through a length of kerbstone which has been shortened demonstrates that some marks pre-

date laying. However, these could be cases of reused kerbstones, a common practice indicated by the 'hotch potch' of different kerbstones found in some areas.

"Persuasive though these observations are that the marks relate to local circumstances, there is one fly in the ointment. This is that, in central London (and maybe other city centres), there are often long runs – several hundred yards – of uniform kerbstones with no marks. If, in such affluent areas where the local residents surely enjoyed all contemporary 'mod cons', no marks were used, does this suggest that they are not related to utilities and, indeed, may not be essential to the road engineer? The conundrum persists."

He concludes:

"I believe on balance that the marks are imparting information related to the primary site of use of host kerbstones and have nothing to do with source and/or transportation. It is tempting to say, that E, g (rare), w (rare), T, respectively stand for electricity, gas, water and telephone. But if so, what are all the 'non-letter' symbols, and why are there often combinations and multiples of the same symbol? "

AIA member Mark Watson adds land ownership to the list: "..... others, I think, are about land ownership, feu-hold superior or leasehold, which is particularly complex in London."

If any member can add to this discussion please get in touch

New life for the Zollern colliery machine hall



Erected in Dusseldorf for the 1902 Industrial Exhibition, the Zollern machine hall was dismantled and moved 100 km to Dortmund where it was re-erected with the famous Jugendstil entrance. Photo: LWL – Industriemuseum

With its impressive red facades and opulent gables, the Zollern colliery, built between 1898 and 1904 in Dortmund-Bövinghausen by the 'Gelsenkirchen Bergwerks Aktien Gesellschaft', is one of the finest examples of the industrial heritage in the Ruhr region and in Germany. Because of its exceptional mix of styles (eclecticism and art nouveau) and huge dimensions, the machine hall (the central part of this colliery) has been called the 'industrial cathedral of the Ruhr'.

It was also the first coal mine of the region

powered by electricity and important parts of the original technical equipment in the hall can from now on be demonstrated for visitors. The power hall has another particularity: it was built for the important Industrial Exhibition in Düsseldorf in 1902 and designed by Bruno Möhring. The hall was removed soon afterwards and re-assembled about 100 km away. The relocated hall is an early example of such an operation, about 50 years after the London Crystal Palace, the first 'mobile building' in the world composed of prefabricated structural elements.

The Zollern mine was closed in 1966, like many other collieries during the economic recession of the 1960s and 1970s. "Civil associations and experts prevented the demolition of this exceptional ensemble and saved this industrial monument in 1969, a crucial moment in the cultural history and heritage conservation in Germany. That year can be considered as the start of the industrial heritage movement in the Ruhr-region and in Germany", explained Alex Föhl, one of the keynote speakers during the opening ceremony held on 4 September this year in the fully restored Power Hall. The ceremony was enhanced with miners' choirs and by the expressive sounds of a solo saxophone player. Axel Föhl said: "In 1981, the Zeche Zollern II – IV was the first large scale industrial ensemble of Germany, listed as a historical monument".

Later on the mine was integrated in the network of the LWL – Industriemuseum, www.lwl-industriemuseum.de also called 'Westfälisches Landesmuseum für Industriekultur', one of the leading industrial and technical museums in the world. This fully restored monument can start now its second youth.

Patrick Viaene

Reported in TICCIH Bulletin No. 74,

Restoration grant for cinema organ



Melotone consol

One of the smaller grants that the AIA were pleased to make in 2016 was to the Penistone Organ Trust towards the cost of restoration of the rare Melotone unit, part of the 1939 Compton cinema organ in the Gaumont, Camden Town. Sadly, most of this instrument was broken up in the 1960s but by chance, the organ console (keyboards & stops) were rescued, along with the Melotone unit. The Melotone was, in effect, one of the world's first electronic organ units. It was designed by the John Compton Organ Company and was installed on a number of its cinema pipe organs as an extra musical effect.

Out of the 60 or so Melotone units made, only a handful survive, most in unplayable condition. The Trust's Melotone unit is complete

but required restoration, together with some re-wiring to make it safe and operational once again. Once this is done and the console restored it will be playable. At present the unit and the console are housed at the Astoria Centre in Barnsley – The National Theatre Organ Heritage Centre.

The trust is currently working on a new project, to install the Compton from the Astoria, Purley, in its own premises. The premises will be the UK's first dedicated Theatre Organ Heritage & Restoration Centre. Situated on the outskirts of Barnsley, only a mile or so from the M1, the venture will provide an auditorium containing the Compton together with displays and items related to the history of the Cinema Organ in the UK. The centre will be unique in providing dedicated workshop facilities for Cinema Organ restoration which will be available to other groups or individuals.

The 'Astoria Project' has been generously supported by many individuals, since being given the Compton last year by the Sheffield Theatre Organ Society. They had had to vacate the City School, Sheffield which had been their base for the past 40 years. At the end of 2010, the Penistone Cinema Organ Trust were successful in being granted substantial funding from South Yorkshire Community Foundation. The grant of



Melotone unit

£5,000 has been awarded to provide the restoration centre with workshop tools and equipment, which will be used in connection with Cinema Organ restoration.

120 Stirling Engines on display



Stirling engine manufactured by Hayward-Tyler Ltd of Luton, 1898, to the Rider-Ericsson patent. Owned by Aubrey Burge of Pewsey in Wiltshire.

The Waterworks Museum, Hereford and the Stirling Engine Society worked together throughout 2016 to celebrate the bicentenary of the Stirling engine. In 1816 the Rev Robert Stirling, a Scottish clergyman, filed his patent with a complete drawing of a new type of engine working purely on the heating and cooling of air. Within two years he demonstrated a working engine. The hot-air engine was born and, following rapid development on both sides of the Atlantic, had its heyday in the

1890s becoming known as the Stirling engine in honour of its inventor.

Last summer Hereford became the hub of celebrations in Britain culminating in the largest gathering of Stirling engines in October. There is a rally every year in Hereford but this was something special with more than 120 Stirling engines on display. They ranged from miniature engines which worked from the heat in the palm of the hand to full-size examples from the late Victorian period. Exhibitors came considerable distances, from Barnstaple to Norfolk, and from Halifax to Penzance. The rally was blessed with fine weather enabling the larger engines to be displayed working safely in the Museum grounds.

There is a marked resurgence of interest in the modern practical applications of Stirling engines. They are now much more efficient and can be made silent in operation. The Stirling cycle under which they operate can, intriguingly, be put into reverse. By rotating the engines mechanically they can produce very low, even cryogenic, temperatures. In this guise miniature versions are used to cool the magnets of MRI scanners.

The Museum has become a national centre of information and explanation of Stirling engines. New displays were installed last spring with colourful explanatory panels, interactive working models and a new video film illustrating Robert Stirling's pioneering work. The Museum itself has two full-size working Stirling engines manufactured by Hayward-Tyler of Luton in the

1880s. In addition, experimental thermo-electric generators, developed at Harwell in the 1960s and based on the Stirling cycle, are on display.

This magnificent gathering of Stirling engines really caught the public imagination and the visitor numbers far exceeded those for any previous autumn event at the Museum. On Sunday 8 October 2017 we look forward to another rally of Stirling engines at Hereford.



A visitor from the Forest of Dean is intrigued by a Stirling engine operating from the heat in the palm of her hand. (Engine courtesy of Kontax Stirling Engines).

AIA Council Meeting 7/8 October, 2016

As is usually the case, the final Council meeting of the year was held at Coalbrookdale and the following are highlights of the discussions and decisions taken.

Electronic publication of the seminar proceedings

Council considered that the proceedings of both the 2015 Brighton seminar and the 2016 Telford one were important enough to be published to a wider audience. Subject to permissions from the speakers, it is hoped that they can be disseminated electronically in due course.

Taylor & Francis negotiations

The current contract with T&F expires at the end of 2018, and there needs to be careful thought regarding any future membership management. They are the only logical company for the publication of the IA Review because of the importance of the Routledge imprint.

Membership Drive

It was agreed that a good quality display should be available to show at relevant training courses, conferences and events around the country. Depending on the venue, local IA societies may be able to help man the stand.

Industrial Heritage Support Officer

Ian Bapty left this post in July and Shane Kelleher has been appointed in his place. Shane has produced a development plan and an application for future funding will be made to Historic England. It was agreed in principal that the AIA should provide some financial support.

Heritage Sites under threat

It is comforting to have well respected IA people such as our President Marilyn Palmer, Chairman Keith Falconer, Vice-Chairman Mike Nevell and Sir Neil Cossons our Vice-President fighting our corner over the fate of preserved sites, museums, and the threats to the archaeology of historic industrial sites.

Treasurers' Report

Despite all our travails over lost members, the treasurer is pleased to be able to project a healthy surplus for the current financial year. However, NatWest Bank have written to advise that after November free banking will be withdrawn from charities with a turnover greater than £100,000. Ways of avoiding future banking charges have to be considered.

Conference Reports

Thanks to the hard work of David de Haan, Ian West, Steve Dewhirst, Shane Kelleher, John Powell and John McGuinness, the Telford conference was a great success, and numbers attending exceeded those for at least the last ten years. Copies of Barrie Trinder's book were distributed free to all those attending, and members who did not attend conference will have received a copy in the post.

Preparations are proceeding smoothly for the South-East Midlands conference at Moulton College, Northants, in August 2017. Caithness will

be the venue for 2018's June conference and AGM. There will be a one-day event, somewhere central, in August or September 2018 for holding a practical day and for the presentation of awards.

Bridgewater College has been identified as a suitable venue for the 2019 annual conference.

Gazetteers are an important part of the AIA's charitable work and would continue to be produced whenever possible, but unfortunately, not for 2017.

It was noted that mobility was becoming a problem on post-conference tours, and organisers should consider providing some tours that catered for this.

Affiliated Societies

It was agreed that an e-newsletter should be developed for communicating with affiliated societies, and that this, and other social media matters would become a standing agenda item.

Heritage of Industry tours

Spring Tour Holland 15 – 21 May 2017

The programme for this tour was enthusiastically discussed (a notice will be found on page 22)

Four Country House Comfort & Convenience tours are planned for 2017, all repeats of previous tours. Details will be found on the Heritage of Industry website.

Restoration Grants

At the beginning of 2016 there was a balance of £216k on the account, payments and commitments amount to £214k, leaving a small balance available of just under £2K.

All Party Parliament Group on Industrial Heritage

The important task of convenor of this APPG is Council member Tony Crosby. Tony has produced a draft of a proposed Manifesto on the Values and Benefits of Industrial Heritage and also suggested some names of speakers for the proposed evidence sessions to be held by the APPG-IH Group.

Creative Re-use Awards

There were three entries this year and the winner, King Edward Mine was announced at conference. They will receive a plaque, the other two entries, the Sack house in Wantage and Ryze Trampoline Park, Glasgow were sufficiently good to receive certificates. Criteria for the award have been agreed and will be put on the website. The closing date will remain 31 May at least for 2017. So far, only one entry has been received for next year.

Publication Award

An application for a Peter Neaverson Award for Outstanding Scholarship has been received for The Technology of the Country House, authors Marilyn Palmer and Ian West. This means that two neutral judges will be required!

British Archaeological Awards

The awards ceremony was held at the British Museum in July. It was good news for industrial

archaeology this year; David Gwyn, former editor of IA Review, won the best archaeological book award with Welsh Slate, while our Vice-Chairman, Mike Nevell and his team from the University of Salford were short listed for the Best Community Engagement Project – Dig Greater Manchester.

Endangered Sites Report

Since the last report presented to Council there have been 796 cases on the CBA's data base plus several referrals from other sources. Approximately 47 of these were potential industrial sites and comments have been made by the AIA on 16 of those cases. It was proposed that Keith Falconer should remind Historic England about works relating to Scheduled Ancient Monuments; these proposed works do not come up on the CBA website.

Industrial Archaeology Review

Issue 38.1 appeared in June, and by mistake T&F printed it all in colour (but at no extra cost to the Association). This resulted in favourable comments both on the content and image quality. Our current contract gives us 16 pages in colour over the two issues, it was agreed to increase the number to 32 over the two issues.

Mike Nevell will succeed to the chair of the Association at next years' AGM and, as a result, will stand down as co-editor of IAR; potential candidates for a new co-editor are being sought.

Bruce Hedge

Patrick Nott

1936 – 2016

We are sorry to report the death of Patrick Nott on 15 November. He will have been familiar to many members as a regular attender at the annual AIA conferences for many years and was with us at Telford in 2016.

Patrick was born in Grantham, Lincolnshire into a family who were blacksmiths, carpenters and pattern makers. One of his grandfathers had been a driver for the LNER. Patrick received a scholarship to Queen Mary College to read Physics, and went on to King's Cambridge to read education for a year. He came to the Isle of Wight and taught Physics at the Isle of Wight Technical College and then taught courses in the engineering department. This was when he became interested in the history of science and wrote a significant book with Paul Gustar on the life of John Milne, the pioneer in the study of modern seismology.

These interests brought him into the Island Industrial Archaeology Society, for which he was programme secretary for many years. He always amazed the membership with the sheer diversity of his annual programme. In recent years he has been writing the history of the area of Ryde in which he lived.

*Martin Light and Mark Earp
(IW Industrial Archaeology Society)*

Endangered Sites Report for 2016

As was to be expected, 2016 was a busy year for industrial sites and buildings under threat, and there has been quite a variety of cases. Applications can take a long time to go through the planning process so some of those mentioned below were the subject of comment by the AIA in 2015. It should perhaps be pointed out that more cases are looked than those upon which comments are made as it is not always considered necessary or appropriate to comment.

A loss will be the Herbert Morris Crane Factory, Loughborough whose demolition the AIA objected to in November 2015. Permission to demolish was granted but fortunately with the condition that a record is to be made at Level 3 (Historic England's second highest level at which a site or building is recorded). The permission to demolish and the AIA's objection reached the local press.

Textile mills have not fared well either with a number suffering disastrous fires, including as recently as December, Maple Mill in Oldham – not listed and therefore not one upon which the AIA will probably comment. In contrast the AIA did object to proposed demolition of Beehive Mill in Bolton. Permission to demolish was granted. In 2015 the AIA objected to the proposed demolition of the unlisted Bailey Mills, Delph (Oldham). Permission was granted but with a recording condition. However, the mill was unusual in that the floors were of double height (two sets of windows, one above the other on each floor). Perhaps not surprisingly the mill was then listed, but in October of 2016 a Listed Building Consent application to demolish was submitted following a disastrous fire. Given what remained of the building, objecting to demolition was not appropriate. Whether it was recorded is another matter. Another mill subject to fire and vandalism was Lane Close Mills, Bartle Lane, Bradford. The AIA object to demolition but permission was granted.

Applications have affected buildings which have been or will be part of the AIA's annual conference. This year (2016) it was the Flaxmill at Ditherington, Shrewsbury. An application was submitted on behalf of Historic England to open up the mill's original windows, except for those altered when it was converted to a maltings. Also, part of the proposal was a change to the banner signage across the front of the building from 'Albrew Maltsters Limited Shropshire Maltings' to 'Shrewsbury Flaxmill Maltings'. Although the AIA was supportive of the changes to the fenestration, it did object to the change to the signage! This minor objection also reached the local press and local people, especially those who had worked at the maltings were pleased that such an objection had been raised. The application has now been approved. (The signage is currently hidden by scaffolding.)

In 2017, at the annual conference, one of the proposed visits is to the Wolverton Railway and Carriage Works. An application was received in 2015 to demolish all the historic buildings on the site with the exception of a section of existing wall



Ditherington Mill with the signage before it was obscured with scaffolding

photo Amber Patrick

to Stratford Road and part of the lifting shop. The AIA followed the Victorian Society's lead and objected. In 2016, further submissions have been made and the proposed replacement buildings are better designed but the historic buildings will still be demolished. No further comments have been made by the AIA as our original one still applies.

Another site, seen on the 2014 annual conference, was the former lead works and shot tower in Chester. The AIA was largely supportive of the application but requested a recording condition.

It is perhaps surprising to find that Bath, known for its Roman Baths and elegant crescents and terraces, was home to the world renowned crane makers Stothert and Pitt. Their premises were sandwiched between the Lower Bristol Road and the river Avon but have long been empty. There is still a good road frontage but behind there is just the foundry and boiler house. The proposed regeneration of this area involves the loss of these two remains of Stothert and Pitt. Although visible from across the river, from an area also undergoing works, and, if one is lucky, from the train as it leaves Bath Station for Bristol, they are not visible from the road. In theory it might be possible to retain the foundry but in the process the building's integrity and evidence of its former use would be lost. As the regeneration of this area of Bath is essential it is to be hoped the new developments will reflect the importance of this piece of Bath's engineering past and its World Heritage status.

Other sites upon which comments have been made include Walton works, Factory Street, Chesterfield where there is an example of early fireproofing in the main mill. The AIA expressed concern at the demolition of the 1937, 27 bin, silo tower extension of the Shredded Wheat Factory, Welwyn. There was no objection to other parts of the application. The AIA objected to the demolition of the Cosalt Building, Fish Dock Road, Grimsby but it was allowed and also to the conversion of Darley Mill, Darley, North Yorkshire on the grounds that there was insufficient information on which to

make a decision. There was no separate heritage statement and therefore it was difficult to determine the extent of the impact on features of the conversion. Finally, despite the poor condition of The Tannery, Eastland Road, Yeovil, Somerset, the AIA objected to its demolition. The building had belonged to the Goldcroft Glove Company and is a survivor of Yeovil's once important glove manufacturing industry.

Amber Patrick, Endangered Sites Officer

Want to buy a brewery?

Highgate Brewery Sandy Mount Road, Walsall, WS1 3AP is for sale at a guide price of £850,000. It failed to sell at auction.

According to the agent's particulars the 1.14 acre property is freehold and includes a double gated entry leading to a large yard with access to offices, a former brewery building over some four stories, storage, delivery and collection bays.

Information from elsewhere indicates that the building contains riveted coppers and wooden mash tuns.



Walsall Tower Brewery for sale

North West Industrial Archaeology Conference 2016

The 2016 CBA North West Industrial Archaeology Panel conference took the form of a training session on how to campaign to save local heritage, and industrial sites in particular. Run jointly with the South Trafford Archaeological Group and based at the 1900-1 Altrincham Town Hall (designed by Charles H Hindle), 45 of us gathered from across the north west of England. There were two strands to the day; first, what the heritage resource was and how this was being eroded, and second, how to support, campaign and lobby for industrial heritage.

The first speaker was Gary Hart from the UK Parliament Outreach & Engagement Service. This is a free service from the Houses of Parliament that is politically neutral and aims to increase knowledge and engagement with the workings and processes of Parliament. Gary provided an overview on how to engage with Parliament. This included advice on contacting your MP or a member of the Lords, engaging with legislation, petitions and Select Committees, and the role of All Party Parliamentary Groups (APPGs).

Andrew Davidson, Principal Inspector of Ancient Monuments North West, outlined the scope and challenges facing industrial heritage in the North West and the role of the Heritage At Risk register.

The Heritage At Risk Register is an important tool in assessing the risk to SAMs, Grade I and II* buildings. Overall in England there are 5,341 entries on the Register. As an awareness and advocacy tool the registry works: 25% of the 2010 entries were rescued by 2015.

Norman Redhead, chief planning archaeologist at Greater Manchester Archaeological advisory Service (GMAAS), looked at the workings of the Historic Environment Record. In Greater Manchester, as an example, for the year 2015-6 there were 18,445 planning applications; GMAAS was consulted by the ten Local Planning Authorities on 291. 129 applications had archaeological implications resulting in recommendations for programmes of archaeological work and conditions.

Ian Miller of Salford Archaeology, University of Salford, provided several case studies on how industrial sites and buildings have been recorded through this planning system in the region.. A key approach was the targeting of particular aspects of these sites, such as power or transport systems, rather than wholesale excavation. Furthermore, often the developer paid for the dissemination of the results through open days, information boards and popular publications.

Members of the Leigh Building Preservation Trust who are restoring the horizontal steam engine at the Grade II* Leigh Spinners Mill in Leigh, Greater Manchester described how volunteers need training and support in a variety of areas but their passion can help give such large industrial buildings and objects a future.

However, all of this archaeology planning work is dependent upon access to and maintenance of a Historic Environment Record

(HER) at local authority level with advice from local authority-supported planning archaeologists. The system fails if one or more of these three elements is removed, as was threatened in Lancashire early in 2016. As Norman Redhead observed HERs are not statutory in England. Local government cuts have led to a 32% cut in county and local authority planning archaeologists over the last eight years. This increases the danger of the unrecorded loss of archaeology, uncertainty and risk to developers, the lack of a balanced view on significance and mitigation, and the loss of contractor jobs and skills, making sustainable development impossible. National government does not enforce NPPF and there is a relentless pressure on the planning system, including permitted development for brownfield sites and the removal of pre-commencement planning conditions (undermining the archaeological planning process and the NPPF).

This brought us to the second strand of the day; the support, campaigning and lobbying for our industrial heritage.

Lydney Jones, of Museum Development North West, described an initiative supporting North West museums. This is Arts Council England funded until March 2018 and is managed by the Manchester Partnership and Cumbria Museums Consortium. There are 145 accredited museums across Cheshire, Cumbria, Greater Manchester, Lancashire and Merseyside with over 6.5 million visitors annually. So far the scheme has seen the number of children visiting increase by 20%. North West museums employ just under 1,000 people, and contribute £143m annually to the regional economy. The scheme offers training support in working with volunteers, fundraising and resilience, health and safety, managing large working objects, marketing, engagement, interpretation, asset transfer and sustainability.

Shane Kelleher, Industrial Heritage Support Officer for the Ironbridge Gorge Museum Trust, described the support scheme which was designed specifically for the industrial heritage sector. It is supported by Historic England, the Association of Independent Museums and the AIA and is based at Ironbridge. Its creation was prompted by declining volunteer recruitment and retention, an ageing volunteer base, and limited technical skills transfer. The scheme has been helping these groups to adapt to the modern world through training on subjects such as funding, visitor engagement, conservation, best practice, governance, health and safety.

Rob Lennox of the CBA then talked about planning and advocacy and why it matters to the future of industrial archaeology. The Local Heritage Engagement Network (LHEN) is a CBA initiative providing more in-depth information, access to training materials and advice on specific issues. There are a huge number of ways that advocacy can be of importance: raising profiles, building networks, understanding and engaging with processes as well as effecting change. Rob

focused on the understanding of the planning system and the development processes, how to raise your own profile and bang the drum for heritage and why to speak regularly with your representatives, and how to use the media. All of this advice is backed up with guidance documents from the CBA that are downloadable from the CBA website: new.archaeologyuk.org/local-heritage-engagement-network.

Finally, Andrea Grimshaw of Dig Discover Enjoy finished the day with a case study on how to build heritage engagement and advocacy using the online social media from inclusive archaeology and campaigning to petitioning to save Lancashire's archaeology service. She dealt with concerns around using social media. Where do you start? What if the information goes viral? What if I can't delete what I've written? Social media provides instant information, makes links with people and finds new audiences. Furthermore, she noted that other people can help promote your cause for you, and you can easily update and share information with your supporters.

Yet the fact that this advocacy conference was being held on the very day that Lancashire County Council closed five of its museums, including two industrial sites of international importance, was not lost on the delegates. Now more than ever we need to speak up for our industrial heritage.

Mike Nevell

Brexit issues

At the first in the series of roundtable meetings Culture Secretary, Karen Bradley, and Minister for Exiting the European Union, Robin Walker, stated that Britain's world-class museums, galleries and theatres will play a key role in promoting the country abroad post Brexit.

Karen Bradley said: 'Arts, museums and heritage are not only a fundamental part of our national identity, they make a significant contribution to the UK both culturally and economically. We will continue to be an outward-looking country post-Brexit, and promoting our world-leading arts and culture will be hugely important as we champion the UK abroad in the coming months and years. This meeting, and the series of roundtables I am chairing attended by key representatives from our sectors, will help ensure they have a strong voice as we prepare for negotiations to exit the European Union.'

There was a further meeting on 24 January at which the Heritage Alliance (of which the AIA is a member) met the Secretary of State to discuss the issues presented by the UK's exit from the European Union.



D6332

photo Peter Foster IDMA

D6332

This is about a landmark 'Barnfind.'

It is the last operable engine from five kinds of locomotive, the Scottish built North British Locomotives (NBL), infamously scrapped by June 1980, and the Blue Pullman Units, the engine being inspiration for the HST. It is the last such unit built in Scotland.

One of the locos was bought for preservation in 1971. It would have been the first Diesel preserved; it was cut up in error. Another languished at Barry Scrapyard, unloved and unwanted by steam enthusiasts and used by them as a toilet.

While steam locomotives gain Lottery funding, the 'Diesel era' is somewhat of a poor cousin. The era really started in the UK with LMS 10000 in 1948, and the 'Modernisation Programme' of 1955 signalled the demise of steam, and revolutionised railway transport. The NBL locomotives drew on 10000 design and had a certain style. They had many steam era fittings, including spoked wheels and a steam boiler (to heat the coaches).

The Scottish diesel story began in Glasgow, a long forgotten story that merits wider recognition – and ended abruptly with the bankruptcy of the North British Locomotive Company in 1962-3. All the groundwork for diesel locomotive design was actually done by Beardmores in the 1920s, then copied and improved upon by many others.

The NBL Type 2 and 800 more locos were scrapped after the infamous 'Beeching Axe' closed the lines they ran on.

D6332, our found loco, was trialled from Glasgow to Edinburgh and Gretna Green, then moved South to Swindon. Initially running in Cornwall, on everything from single coach branch trains to double heading the Cornish Riviera Express, and then Devon and Somerset, perhaps

on the Beatles film train. It was rebuilt at Swindon, design flaws modified, and used as Paddington pilot and for freights around London and Oxfordshire. The hydraulic transmission was initially labelled eccentric, but many modern units have a similar Voith powertrains and are successfully used around Britain today.

As well as the Power Unit, I have sourced, bogies, wheelsets, brakes, and a boiler from one of these hydraulic locos.

The difficult part is to gain funding. I have met with industry insiders and propose to form a Community Interest Company, and to run the loco both in Scotland and the West Country. The experts will advise on mainline running, but, to give you an idea of costs, this would double the outlay!

So I am interested in serious pledges, and the more involved and pledging, the stronger the case for HLF funding.

Please do not hesitate to phone on 07470035647 or email northbritish6332@gmail.com if you wish to know more.

Dr Dave Kew

Whitechapel Bell Foundry to Close

Sad news from London is the announcement that the Whitechapel Bell Foundry, the country's oldest manufacturing company, is to close. The Company started business in 1570. When the current master bell founder retires this May the works will probably be sold.

If this Bell Foundry closes it is to be hoped that before closure a record will be made. An inventory ought to be compiled, and ideally the recording work should if possible include a measured survey, still photography, video, and oral recording.

Robert Carr

George Crutcher

AIA members will be sorry to learn of the death of George Crutcher on 15 October 2016. He was an unassuming man and I probably met him and his wife Lesley most often at Brewery History Society meetings. However, for me, he was one of my most valued correspondents for Endangered Sites referrals in the Home Counties, always providing me with detailed and well-argued responses as was the case with the Shredded Wheat Factory at Welwyn.

*Amber Patrick,
Endangered Sites Officer*

Memorial Event for Dr Edwin Course

On 8 October, more than 50 people gathered at Bursledon Brickworks Museum to remember Dr Edwin Course, who died in February (see obituary IAN 179). It was an appropriate venue given that most of Edwin's extensive library will be going to the Brickworks site, as Hampshire Buildings Preservation Trust are establishing an Industrial Heritage Centre in its Gatehouse.

Pam Moore opened the session by reminding those present of Edwin's life and career and Dr Martin Gregory spoke about Edwin's contribution to the Twyford Waterworks Trust. Peter Keat took as his topic, Gosport Railways, and was followed by Terry Gould on the Itchen Navigation. After a break when people could chat about their memories of Edwin and share them with his widow, eldest son and daughter, Prof Ray Riley lightened the mood with witty reminiscences of Edwin based on their long association working in Adult Education. Pam Moore was the final speaker, covering other topics close to Edwin's heart, such as the Hampshire Farm Buildings Survey, Hockley Viaduct, Southwick Brewery and the excavations at Brownwich Farm, Titchfield. Pam closed by showing a selection of pictures of Edwin mainly taken on the remarkable field trips which he organised over many years.

The afternoon was a warm tribute to a remarkable career.

**Contributions
for IA News 181
welcome – copy
date 31 March**

The 2016 Historic England Angel Awards



Clevedon Pier

In 1979 in a leading article in *AIA Bulletin*, volume 7 number 1, Clevedon Pier was brought to our attention by Douglas Hague. In passionate prose he extolled the beauty of this important historic engineering structure, first opened to the public in 1869, and deplored the fact that its imminent destruction was very likely at hand – unless the most energetic protests were organised.

Happily the gloomy predictions of 37 years ago did not come to fruition and last October at a glittering ceremony in the Palace Theatre in London the Clevedon Pier and Heritage Trust received the Angel Award for the Best Community Action Project. Following the Pier's restoration a new visitor centre, close to the Pier, was opened in Clevedon in May 2016. The pier is now listed grade I, a status it achieved in 2001.

The Palace Theatre in London was promoted by Richard D'Oyly Carte and opened in 1891 as the Royal English Opera House – perhaps the English answer to Bayreuth. English Grand Opera did not prove commercially viable, however, and the Theatre soon became a Palace of Varieties. From the 1960s the Palace has been notable for long running musicals. The current production is the stage play *Harry Potter and the Cursed Child* which has been performed there since July 2016. It was jokingly remarked that a wide-eyed young person outside the theatre had exclaimed "gosh! – they have built Hogwarts in London for the play!" In 1950 John Betjeman wrote that it was "the only theatre architecture of the last 60 years which climbs into the regions of a work of art". It was listed grade II* in 1960.

Along with Andrew Lloyd Webber the presenters of this year's Angel Awards were Fiona Bruce, Lord Fellowes, Philip Mould, Dr Bettany Hughes, Emma Bridgewater, George Clarke and Duncan Wilson, all of whom made short speeches. And of course Sir Laurie Magnus, Chairman of Historic England, also played a prominent part in the Ceremony. This year

industrial archaeology was very much to the fore, perhaps surprisingly so, and this article deals exclusively with the Awards which have industrial archaeological interest.

It had been the intention that Tracey Crouch, the Minister for Sport, Tourism and Heritage, would be present at the Awards Ceremony but she was obliged to send her apologies. That evening in Parliament the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict was being debated. The UK, along with Andorra, Ireland, and the Philippines is one of the very few states that has not ratified this convention. It was clearly essential that the Minister be there and it is the intention that the UK will now ratify the 1954 Convention.

So it was that the 2016 Angel Awards Ceremony took place without the Minister. Returning to the business of the presentations at the Palace Theatre, three more first prizes went to schemes with an industrial archaeological flavour. The town of Goole owes its existence to the Aire & Calder Navigation and now that canal traffic is almost extinct, the town has suffered severe economic hardship, the centre becoming run down and decayed. In this dark situation a ray of light has been focussed on the restoration and reuse of several prominent buildings in Aire Street. The Station Hotel, a former Bank and the Lowther Hotel have been put back into use and given an economic purpose. The people behind this wonderful renaissance are Julie and Howard Duckworth and on 31 October they received the Angel Award for the Best Rescue of a Historic Site.

Well over a hundred years old, the houses in Port Sunlight now require restoration and care. The Port Sunlight Village Trust and Wirral Borough Council have worked in conjunction to implement the Local Listed Building Consent Order (LLBCO) and this work has been seen as a case study for other local groups and councils to learn from. The

Award for the Best Research Project went to Wirral Borough Council and the Port Sunlight Village Trust.

The Award for the Outstanding Contribution to Heritage went to Carlo Diponio for his work at Dudley Zoo. Carlo is the construction supervisor there and has become expert in the restoration of the Zoo's Tecton buildings. Dudley Zoo has the world's largest single collection of them. In 2009 these buildings were granted World Monuments Fund status, the same status as the Taj Mahal. Since 2014 Carlo has used his expertise in the field of concrete, at times devising his own tools, to restore these iconic modernist buildings, his work being aided by Heritage Lottery Funding.

Robert Carr

Neighbourhood Planning Bill

The Government has published its response to the consultation on measures in the Neighbourhood Planning Bill on the use of pre-commencement planning conditions, and plans to prohibit the use of other types of planning conditions.

The Consultation asked for comments on the proposed prohibition of pre-commencement conditions where a local authority did not have the written agreement of the applicant.

Approximately 25% of the responses, mainly from local authorities, and archaeological and environmental bodies, stressed the importance of ensuring that certain pre-commencement conditions could still be imposed, for example, by exempting them from the requirement to seek the developer's agreement altogether.

The Government states that, "these proposals will not restrict the ability of local planning authorities to seek to impose conditions that are necessary to achieve sustainable development, in line with the National Planning Policy Framework."

The proposed measures build on current Planning Practice Guidance, which clarifies that it is best practice for a local planning authority to agree proposed conditions with an applicant before a decision is taken, and as early in the planning application process as possible. The Government states that the requirement for the local authority to seek the agreement of the developer to pre-commencement conditions, is intended to place that best practice on a statutory footing. "It should be the responsibility of the local planning authority to choose the most appropriate time to seek agreement of the applicant to any pre-commencement conditions."

The Government will explicitly prohibit six types of planning conditions which will be set out in draft regulations and will also issue a further consultation on the draft regulations, and prepare updated guidance to support this measure, should the Bill provisions come into force. It is not clear from the Response whether the guidance itself will be included in the consultation.

Site of former Snibston Discovery Museum to be sold



Site of former Snibston Discovery Museum to be sold off for housing

The site of the former Snibston Discovery Museum in Coalville will be turned into housing if planning permission for a £1.4m redevelopment goes forward. The interactive museum of industry and technology based around an old coal mine was closed in July 2015 and demolished in May this year. Leicestershire County Council said the museum's £780,000-a-year running costs were too steep to maintain.

The council is hoping to make £1m from selling off the 2.5 acre site, which it says can accommodate up to 133 new houses and apartments. This appears to ignore the costs of closure thought to total nearly £1/2m (see IAN 177). It is reportedly in talks with the National Coal Board to overturn a covenant that the land should only be used for recreational purposes.

The surrounding country park and Century Theatre, Britain's oldest surviving travelling theatre, remain open. The council plans to use the money from the sale and a £400,000 investment from its own budget to fund a redevelopment of the country park, including a visitor centre and café, car park, heritage and BMX trails, and picnic, play and exercise areas.

The spokesman said, "Our proposed £1.4m investment in the Snibston site should enable people to learn about the historic colliery buildings and make more of the country park."

The country park and visitor centre will cost £146,000 to run annually, which should be covered by the £160,000 income that the visitor centre and car park bring in, according to the spokesman.

The Friends of Snibston group, now renamed Snibston Mine and Park Guardians, campaigned to keep the museum open, but their proposal to run the museum as an independent trust was rejected by the council last year. Brian Vollar, the former chairman of the Friends group, said the council's plans have confirmed the "worst fears and predictions of campaigners and the community following the closure and demolition of the much-loved former Snibston Discovery Museum. It represents contempt for local democracy and the will of the people and for a proud tradition of mining heritage."

Vollar expressed concerns that the site's headstocks and colliery building, which are scheduled ancient monuments, would be fenced off with public access denied if the plans go ahead.

A council spokesman confirmed that the public do not currently have access to the cultural heritage area for site security reasons. However, the council's report proposes public access, as well as a heritage self-trail and interpretation displays.

Mark Sissons

Walsall Leather Museum fights for survival

The museum is at risk after Walsall Council, which is facing cuts of £86m over the next four years, put forward plans to either close it completely or move it from its current location to Walsall Central Library, where just a fraction of its collection would be displayed.

The museum tells the history of Walsall's leather industry, which is still a central part of the town's economy today, and features examples of local craftsmanship and workshops where visitors can watch leather makers at work.

Michael Glasson, the senior museums curator at Walsall museum service, said: "We have had massive support. People love the leather museum – it's been a big part of their lives for 30 years."

The council's budget consultation offers respondents the opportunity to propose other ideas and suggestions, and Glasson said he was urging people to use this to ask the council to keep the museum in its current home.

"There is a whole range of options that haven't been considered. It just seems terribly sad that the council – for understandable reasons – are giving local people a very limited choice."

"The museum is very much rooted in working class life," he said. "But it's not a community who tend to shout loud – they don't feel they have the right to protest."

The council is slashing cultural provision across the city; a further proposal to cease funding for the New Art Gallery, Walsall has generated significant controversy.

Four of the council's five museums have already closed in recent years, and the leather museum also cares for and displays items from their collections.

A final decision will be made on the museum's future on 23 February 2017.

Reach a wider audience

Submissions are now being accepted for the next issue of the TICCIH Bulletin. Contributions on any subject which will interest our members around the world are welcomed.

James Douet, Editor, TICCIH Bulletin t: +34 935320017, email: editor@ticcih.org

Isle of Wight Stagecoach

English Heritage has announced that the Victorian stagecoach known as 'Civility' has been given to the Isle of Wight Bus and Coach Museum where it will be conserved and put on public display.

The 'four-in-hand' horse-drawn coach was built in the 1880s by the Richard Bird Cheverton carriage works at 48/50 Lugley Street, Newport, to the order of Albert Vanner. It could carry up to 16 passengers and was primarily purchased for use on a daily service between Ryde and



'Civility'

Newport. The coach also provided a 3-day tour from Ryde on a circuit of the Island, allowing visits to Ventnor, Blackgang and Alum Bay, with overnight stops.

The coach was amongst the possessions belonging to the late Miss Audrey Russell, a descendant of the Vanner family, who bequeathed her estate of Stenbury Manor to English Heritage. It is hoped that the coach will go on display when the museum re-opens in April 2017.

Withdrawal of A-level Archaeology – The Chartered Institute for Archaeology responds

On 12 October, the AQA exam board announced that it would be dropping the A-level Archaeology course from next year. This decision, which came out of the blue, is extremely damaging for the sector, particularly as there is a noted shortage of archaeologists to meet the demand created by the growth in national infrastructure projects.

The reasons given for the decision include: 'the specialist nature of the topics, the range of options, difficulties in recruiting experienced examiners, and limited entries'. This statement does not mention that a revision of the specification for the course, which would bring it into line with Ofqual's standards, following a Government consultation in the summer, has recently been completed and was due to be submitted for assessment shortly.

ClfA Chief Executive Pete Hinton said, "It is a great disappointment that AQA have unilaterally decided to stop offering the A-level programme in archaeology mere months after a range of improvements had been designed following a Government consultation. The A-level in archaeology is an important route into the archaeological profession and therefore represents a set-back for the sector, which has made strides towards improving diversity and skills in the workforce."

Tim Loughton, MP, introduced a Westminster Hall debate, 'That this House has considered the future of A level archaeology'.

In response Nick Gibb, The Minister for Schools, responded that the Government had 'left no stone unturned' in the hunt for a new provider for Archaeology A-level but had been unsuccessful.

The Minister went on to say, "Many universities will expect students to arrive already having had work or volunteering experience in museums or on heritage sites, or having had practical experience in the field. Organisations such as the Council for British Archaeology which runs almost 70 Young Archaeologists' Club branches all over the UK, and industry magazines such as Current Archaeology offer a wealth of volunteering opportunities around the country."

In response to a question in the Lords, Lord Nash, the Parliamentary Under-Secretary of State for Education, replied that, "The option for an exam board to develop qualifications in this subject in future will remain open. Archaeology A-level is not a pre-requisite for degree level study in the subject, and it is taken by a small number of students – 340 in 2015/16."

Discovery Masts and Rigging



RRS Discovery at Discovery Point, Dundee

Dundee Heritage Trust is undertaking essential work on RRS Discovery's masts and rigging which will involve the ship being partially de-masted. The work will take place off-site at the yard of master shipbuilder Tommi Neilson of Gloucester who specialises in the conservation of historic ships. It is hoped to complete the work by June 2017

The total project cost is £350,000 and RRS Discovery has secured £40,000 towards the project with a crowdfunding public appeal.

Members attending the 2013 Dundee Conference will remember the barbeque held at Discovery Point when we were able to tour the ship as she lay alongside.

Millennium Mills

The £3.5 billion regeneration of the derelict Silvertown site in the Royal Docks has been given the green light after the developers agreed to build more than 1000 affordable homes.

The 62 acre industrial wasteland centred on the vast 1930s Millennium Mills building has now cleared its final planning hurdle. It already had outline planning consent but Newham council has now approved the detailed plans for the construction of 3000 homes. Work has already started on the development including the removal of more than 500 tonnes of asbestos.

The mills, originally built by William Vernon &

Sons of Birkenhead in 1905, were partially destroyed in 1917 by the Silvertown explosion at Brunner Mond's munitions factory nearby. The grain silos and flour warehouses were among the 17 acres of buildings affected.

In 1920, Vernon & Sons, including the Millennium Mills, was taken over by Spillers Limited. Spillers was an established flour milling business founded in 1829, which subsequently went into the production of dog food and animal feeds. The mill was rebuilt as a 10-storey concrete art deco building in 1933. The Spillers name remains prominent on the east and west wings of the building.



Aerial view of the Millenium Mills after 1933 reconstruction

Graces Guide

Plans for another Forth rail bridge

Two engineers' drawings have been found in a microfiche file among a box of historic documents and show a new bridge alignment and a 'reconstructed' bridge profile. The annotated plans are dated 22 January 1945 and are attributed to the 'Engineers Department Edinburgh'. The second rail bridge would have been built downstream of the existing bridge and very close by.

The drawings formed the basis of an April Fools joke by VisitScotland, Network Rail and The Daily Record, which reported that plans for a 'Fourth Forth Bridge' were in the pipeline. While there are no plans to create a new railway bridge, the 71-year-old designs are genuine.

Network Rail has commissioned an artist's impression of what the fourth Forth Bridge would have looked like and where it would have been situated.

The ambitious design – the equivalent of building three Sydney Harbour Bridges back to back – shows arches 110 metres high and four masonry towers at 70 metres.



Artist's impression of the 'fourth' Forth Bridge
Network Rail

Dr Miles Oglethorpe of Historic Environment Scotland, speculated that the plans were to replace a bridge damaged in war or to cope with increased demand for trains.

He said, "It's possible it was in anticipation of potential damage through enemy action. But my theory is simply that they were anticipating more rail travel. The existing bridge was being very heavily used and they were thinking ahead."

Pledge to rebuild Euston Arch

In a speech to the Independent Transport Commission, Minister of State for Transport John Hayes has called for beauty in transport infrastructure and pledged to rebuild the Euston Arch as a statement of 'revolt against the Cult of Ugliness'. The doric Euston arch was demolished in 1961 despite a hard fought campaign by The Victorian Society.

While the speech has attracted controversy in the press for its dismissal of so-called brutalism, it heaps praise on heritage transport buildings such as Great Malvern and Huddersfield stations and states that there should be 'No more demolition of our railway heritage'. The shift may provide opportunities for the sector to enhance or save heritage transport structures.

The Linz Railway Bridge – Demolished!



Linz railway bridge

photo Lorenz POTOČNIK, 2016

Many years of expert effort and citizens' action groups to prevent the demolition of the Linz Railway Bridge failed (see TICCIH Bulletin #62). The demolition started in August 2016. The bridge fabric was largely authentic. The bridge had survived World War II without any destruction.

The 400 metre bridge, built between 1897 and 1900, was completely riveted. As the last example of historic Danube bridges in Austria, it was protected by Federal Law (following a 2003 decision of the Monuments Authority). Although Rolf Höhmann from Germany, as an international expert, recommended the preservation of the bridge in 2010, underlined by written evidence from independent and experts of the Advisory Board for the Preservation of Monuments in 2013, the Federal Monuments Authority issued the 'permission for destruction' without further consultation in September 2013.

The Linz Railway Bridge carried both rail and road transport but in recent years road traffic had increased heavily. When a train passed over the bridge, road vehicles were stopped by traffic lights. This 'multimodal' use was very rare but resulted in heavy corrosion problems following

the use of salt to defrost the road. The City of Linz was responsible for road maintenance, and refused to pay for preservation of the bridge. A public poll was undertaken in Linz in September 2015, when 68% of the voters opted for a completely new bridge for all modes of transport rather than a solution with clear separation of the transport modes by a combination of conservation of the historic bridge and a new bridge.

An architectural competition was held in 2014. The jury chose the design of Marc Mimram Architecte from Paris. The costs of the project are estimated at €47m, the demolition up to €3.5m, while the complete costs including financing will reach €60m. At the moment the cost allocation between the City of Linz and the state of Upper Austria is still under negotiation. Austria has lost its last original bridge across the river Danube.

The bridge combined three lattice-girder 83m bridge spans with curved top members crossing the river, and four 26.6m and 36.3m lattice-girder bridge spans with parallel top members.

Guenter Dinhobl

Reported in TICCIH Bulletin No. 74,
4th quarter 2016

Riga trams

In Riga in Latvia the older Tatra trams still collect their electricity by means of traditional trolley poles, a feature now relatively rare. This photograph taken near the railway station in September 2016 by Peter Hall shows a misty early morning in the City. The building in the background is one of the five WW1 Zeppelin shed conversions which now serve as covered markets and visited by the AIA during the Riga tour in 2007.



Robert Carr

Riga trams

photo Peter Hall

AIA Spring Tour

The Randstad — North and
South Holland and Utrecht
15 – 21 May 2017

Organised by Heritage of Industry

This tour is now fully booked

Railway & Canal Historical society

Ninth Waterways History
Conference

'Waterways Research'

Saturday 24 June 2017
1000 – 1630

The Noble Room, The Staff House,
University of Birmingham
(Adjacent to University Station)

£22 inc coffee and lunch

Programme includes

Researching the People

Researching the Waterways

A Way Ahead for waterways Research

Details from Fabian Hiscock
fabianhiscock@virginmedia.com
01167 831924

Driven by Water

Exmoor Water-power Heritage
Weekend

24/26 March 2017

Simonsbath House Hotel, in the heart of Exmoor National Park, will be running another of its 'Water-power Heritage Weekends' in 2017, providing an opportunity to explore the area's heritage of mills and other water-driven sites and machinery. Guests at the hotel will visit six beautiful and historic water-powered mills, including two of the last remaining water-driven sawmills in the country as well as a working flour mill and three other restored mills. They will learn about the challenges of restoring and managing these wonderful places, ride on a water-powered railway and visit a modern hydro-power generation site. A proportion of the cost of the weekend – which covers two nights' full board accommodation in the hotel and all entrance fees, transport and other charges – will help support conservation work at these sites.

For more information please contact
Simonsbath House Hotel, Simonsbath, Exmoor,
Somerset. TA24 7SH; Tel: 01643 831259;
enquiries@simonsbathhousehotel.co.uk

The 45th AIA Annual Conference

25 – 30 August

Based at Moulton College, Northampton the conference will focus on the South Midlands with visits to important sites in Northamptonshire, Buckinghamshire and Bedfordshire

Understanding Industrial Assets Conservation & Management

A two day CPD course aiming at developing attendees understanding of industrial assets and their conservation and management.

18 – 19 September 2017

University of Leicester

£275 (with evening meal and B & B £375)

This course will examine issues around the conservation and management of Industrial Heritage. It will provide an understanding of a selection of industrial (and post-industrial) buildings and sites, the assessment of their significance, their protection, and the management issues faced by these kinds of heritage assets.

The course is aimed at local authority historic environment staff, other curators, and consultants responsible for assessing the significance of industrial heritage and looking for solutions for sustainable long term management. It will also appeal to other professionals who are called on to advise on the significance and management of historic industrial areas. Managers and trustees of historic industrial sites will also find the course of interest. By the end of the course delegates through presented case studies will have gained a greater understanding of the range of industrial (and post-industrial) buildings and sites, and the management issues faced by these kinds of heritage assets.

For provisional timetable and information on other Heritage Practice courses go to www.le.ac.uk/heritage-practice and for further information please call Pete on 0116 223 1987 or email us at heritagepractice@le.ac.uk.

Courses and Workshops in the Historic Environment

Oxford University Department for Continuing Education

is running a series of short practical courses designed to be of interest to a range of people, from historic environment professionals to members of the public interested in archaeology and historic buildings. There are 16 courses during 2017 with titles including:

Condition Surveys of Historic Buildings

Public Inquiry Workshop

Photographing Historic Buildings

Project Management in Archaeology

Archaeological Writing for Publication

Understanding Place

Courses are either one day (£215), 2 day (£375) or 3 day (£455) and are held in Rewley House in the centre of Oxford where accommodation is available.

For details go to conted.ox.ac.uk/cwhe

EMIAAC 92

Cromford Threads

Saturday 6 May

In conjunction with the Arkwright Society The North East Derbyshire Industrial Archaeology Society are organising EMIAAC 92 at Cromford Mill in the famous Derwent Valley World Heritage Site, described as the most important preserved textile heritage site in the world.

While the story of the mill itself is well known, this conference will explore some of the lesser known connections to the site. Speakers include Professor Stanley Chapman, Dr Lynn Willies, Peter South and Darrell Clark. The conference will start by placing Arkwright's Mills in the context of the World Heritage Site's buildings and power units, and then move on to look at early industrial espionage and the building of Germany's first water powered cotton mill – also called Cromford. It will continue with a study of Arkwright's water power - a lead mining sough with connections to the great 17th century water engineer Vermuyden, and to the life and times of the later generations of the Arkwright family.

For more information contact Cliff Lea at cliff@nedias.co.uk, or download registration details at nedias.co.uk

Local Society and other periodicals received

Abstracts will appear in *Industrial Archaeology Review*.

Greater London Industrial Archaeology Society Newsletter, 287, December 2016

Hampshire Industrial Archaeology Society Focus on Industrial Archaeology, 87, December 2016

Historic Gas Times, 89, December 2016

ICE Panel for Historical Engineering Works Newsletter, 151, September 2016

Merseyside Industrial Heritage Society Newsletter, 358, November 2016; 359, December 2016; 360, January 2017

Midland Wind and Watermills Group Newsletter, 116, December 2016

Northamptonshire Industrial Archaeology Group Newsletter, 140, Autumn 2016

North East Derbyshire Industrial Archaeology Society Newsletter, 64, November 2016

Piers: the Journal of the National Piers Society, 121, Autumn 2016

Somerset Industrial Archaeological Society Bulletin, 133, December 2016

South West Wales Industrial Archaeology Society Bulletin, 127, October 2016

Suffolk Industrial Archaeology Society Newsletter, 135, November 2016

Surrey Industrial History Group Newsletter, 212, November 2016

Sussex Industrial Archaeology Society Newsletter, 171, July 2016; 172, October 2016

Sussex Industrial History, 46, 2016

Sussex Mills Group Newsletter, 172, October 2016

Trevithick Society Journal, 43, 2016

Trevithick Society Newsletter, 173, Autumn 2016

War Memorials Trust Bulletin, 71, November 2016

WaterWords: News from the Waterworks Museum, Hereford, Autumn 2016

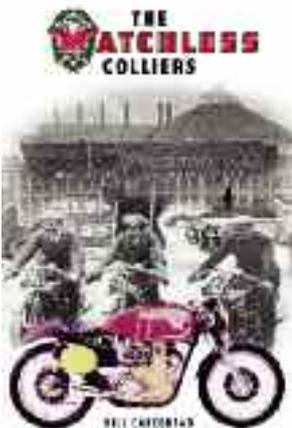
Worcestershire Industrial Archaeology and History Society Newsletter, 49, October 2016

Books

The Matchless Colliers, by Bill Cakebread, 2016. 160 pp, 104 illus, ISBN 978-0-9954510-0-1 published by One Track Publishing, The Paddock, High Street, Ninfield, Battle, East Sussex, TN33 9JR, one.track@btinternet.com, pbk £17.95.

This is the story of the Collier family who founded the Matchless Motor Cycle Company, later to become Associated Motor Cycles Ltd, at Plumstead Road, Woolwich. It covers the complete history of both the family and the Company itself from the birth of the founder in 1859 to the final closure of the factory 1969. The Company, once the largest motorcycle manufacturer in the World, was managed throughout most of its history by the father and his three sons and also ventured briefly into the manufacture of both a car and an aeroplane.

Bill Cakebread was an apprentice and later a designer at the Company from 1958 to 1966.



AIA Practical Day Forging Ahead Understanding the Iron Industry

**Saturday 8 April
10.00—16.30**

The focus of this AIA Practical Day will be the iron industry. A one-day workshop will provide introductory practical training and a broad understanding of the processes and buildings used in the historic iron industry.

The day will begin with a short introductory talk at Coalbrookdale focussing on processes, structures and landscapes; this will be followed by a walking tour which will take in the Old Furnace at Coalbrookdale, Bedlam Furnaces, Blists Hill Blast Furnaces and relevant sites of interest in between. This will develop the points raised in the introduction and work towards the aims and outcomes of the day.

The workshop will be led by Richard Hayman, an archaeologist and historian who is an expert on the historic iron industry, with assistance from local and not so local AIA members.

**£20 for AIA members and students
£25 non members**

**For more information and booking details
visit the AIA website.**

Transport Infrastructure the backbone of civilisation

**Institute of Historic Building Conservation (IHBC)
Annual School Manchester 2017
Thursday 22 – Saturday 24 June
Day School Friday 23 June**

IHBC's 2017 Annual School focuses on understanding the development and importance of historic transport infrastructure and the impact of new infrastructure on historic places.

Highlights include:

- Presentation on the regeneration of historic ports
- A visit to Preston bus station
- Presentations on historic railway infrastructure and impact of new developments such as HS2 and HS3
- Presentation on the management of canals by the Canal and River Trust
- Exploration of the impact of the development of roads and Pedestrian Infrastructure

8 April 2017

AIA PRACTICAL DAY

Ironbridge Institute Coalbrookdale
See page 23

6 May 2017

EMIAc 92

'CROMFORD THREADS'

Cromford Mills, Derbyshire
North East Derbyshire Industrial
Archaeology Society nedias.co.uk
See page 22

15-21 May

**AIA SPRING TOUR TO
RANDSTAD – NORTH &
SOUTH HOLLAND AND
UTRECHT**

See page 22

18-21 May

SIA ANNUAL CONFERENCE

Houston Texas
Julie Blair,
email: siaevents@siahq.org

11 – 13 May 2017

**INTERNATIONAL EARLY
ENGINES CONFERENCE**

Newcomen and colleagues achievements untainted by the smoke screens of Watt
Elsecar, South Yorkshire

22 – 25 June 2017

**INSTITUTE OF HISTORIC
BUILDING CONSERVATION
ANNUAL SCHOOL**

Manchester
Historic Transport Infrastructure –
the backbone of civilisation
See page 23

25 – 30 August 2017

**AIA ANNUAL CONFERENCE,
SOUTH EAST MIDLANDS**

Based in Northampton
Conference papers mailed with this
edition

6 – 10 July 2017

**BRIDGE: THE HERITAGE OF
CONNECTING PLACES AND
CULTURES**

Ironbridge
Historic Transport Infrastructure –
the backbone of civilisation

7 October 2017

**ESSEX INDUSTRIAL
HERITAGE FAIR**

Wat Tyler Country Park (former
Nobel explosives works)
essexiag@gmail.com

20 – 22 October 2017

E-FAITH WEEKEND

Barcelona

22 – 28 June 2018

**AIA ANNUAL CONFERENCE,
CAITHNESS**

9 – 16 September 2018

TICCIH CONGRESS

Santiago Chile
Industrial Heritage – making a
sustainable future by
understanding the past

Information for the diary should be sent directly to the Editor as soon as it is available. Dates of mailing and last dates for receipt of copy are given below. Items will normally appear in successive issues up to the date of the event. Please ensure details are sent in if you wish your event to be advised.

More Diary Dates can be found on the AIA website at www.industrial-archaeology.org



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Final copy dates are as follows:

- 1 January for February mailing
- 1 April for May mailing
- 1 July for August mailing
- 1 October for November mailing

The AIA was established in 1973 to promote the study of Industrial Archaeology and encourage improved standards of recording, research, conservation and publication. It aims to assist and support regional and specialist survey groups and bodies involved in the preservation of industrial monuments, to represent the interests of Industrial Archaeology at national level, to hold conferences and seminars and to publish the results of research. The AIA publishes an annual Review and quarterly News bulletin. Further details may be obtained from the Liaison Officer, AIA Liaison Office, The Ironbridge Institute, Ironbridge Gorge Museum, Coalbrookdale, Telford TF8 7DX. Tel: 01325 359846.

The views expressed in this bulletin are not necessarily those of the Association for Industrial Archaeology.



Are goats the solution?

Cliff Lea of NEDIAS visited the site of Morden Colliery on Vancouver Island last summer. The colliery was begun in 1912 but never prospered. Nevertheless splendid concrete headstocks were erected and these have survived in good condition. The Morden Mine Historical Society are endeavouring to preserve the remains but fight a continuous battle against the vigorous vegetation that grows all about. Lateral thinking led to goats – they rented 11 of these voracious creatures to clear the site and keep it close cropped. It was a great success.

Readers may be amazed to learn that RentAGoat has been a business since 2010, started by Matthew Richmond in North Carolina. The idea is flourishing in California where towns are using goats to clear land as fire breaks. Goats will eat pretty well anything, even thorns and thistles and particularly the dreaded poison ivy without coming to any harm. So far as we are aware there are no goats for hire in Britain.

Is this a subject for the next AIA Practical Day?