AIA

BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

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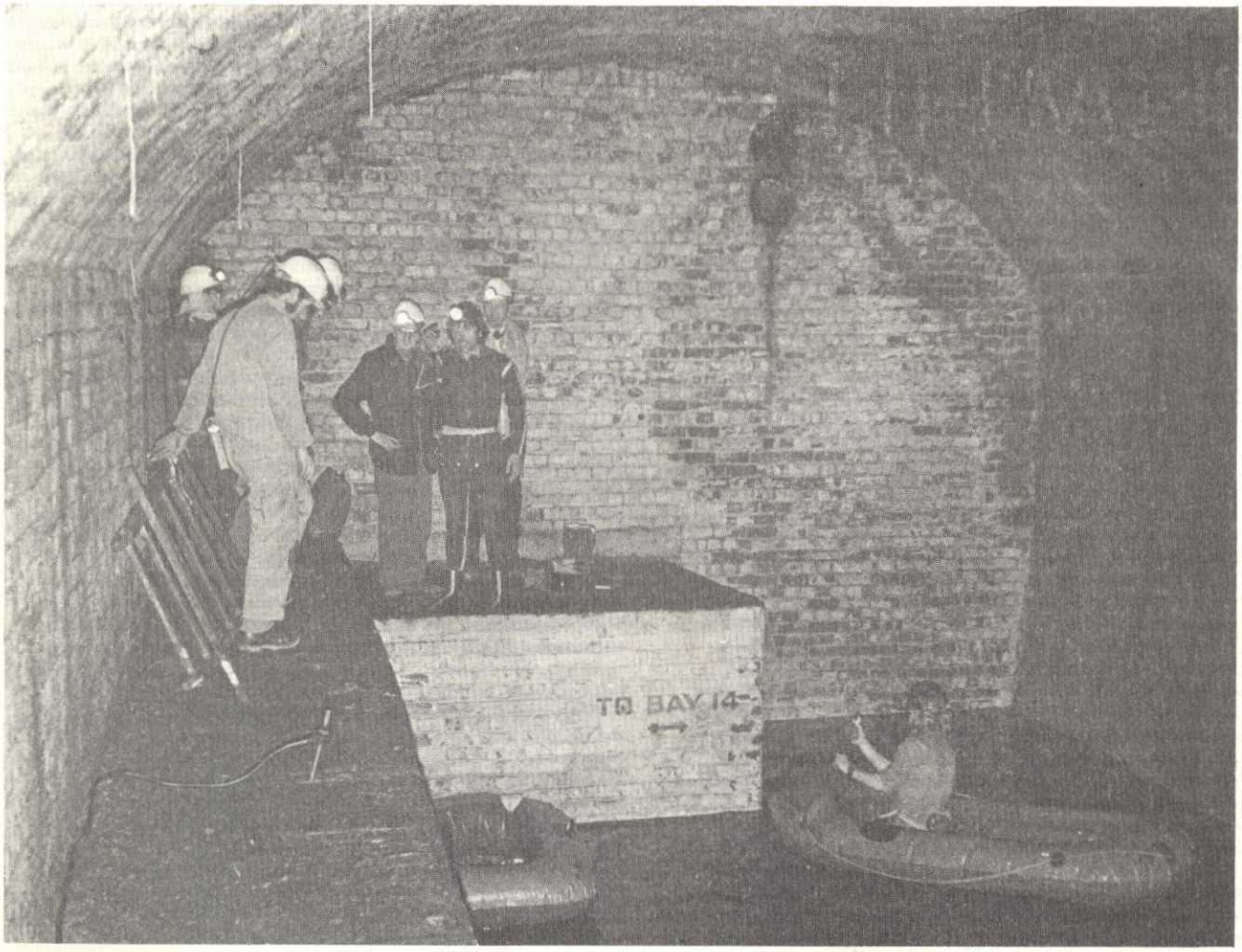

A LOST CANAL – REDISCOVERED

Ken Howarth, Museum Assistant at Bury Museum, has provided details of a recent exploit beneath the streets of central Manchester, when he and a number of associates set out to explore the route of a canal tunnel, now unused but evidently still in good repair, which provided an important junction cut between the Rochdale Canal and the River Irwell. Ken also provided the photograph which accompanies his account of the expedition :-

> "In April this year a team of people visited and recorded a 'lost' canal under Manchester. The party led by myself (Ken Howarth, Bury Museum), consisted of Richard Hills (Manchester Museum Science & Industry), Chris Makepeace (Greater Manchester Council), Dorothy Wildgoose (Manchester Local History Library) and Roger Lorenz (Canal Historian). Our back-up team included Cliff Gardner, a colliery official trained in gas detection, and a group of brave lads in wet suits, led by John Barton, Youth and Community Relations Officer for Bury (South) who was responsible for the dinghies.
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> In 1839 the Manchester and Salford Junction Canal was opened to traffic and was doomed to failure. The MSJcC linked the Rochdale Canal to the River Irwell just five furlongs away. Across the Irwell was the entrance lock to the Manchester, Bolton and Bury Canal, who wanted a link with the Rochdale Canal which in turn was linked to the Ashton,

Huddersfield (narrow), Peak Forest and Bridgewater Canals, giving route over the Pennines to Yorkshire, west to Liverpool and south through the Midlands. The Duke of Bridgewater was not idle however, he also linked his nearby canal to the Irwell at Hulme, making the MSJcC all but redundant.

The MSJcC after its junction with the Rochdale Canal dropped over 30 ft by locks into a tunnel, itself approaching 500 yards in length. In 1873/4 Cheshire Lines Central Railway Station was built over the lock site, sealing the tunnel entrance. The lower end of the tunnel was used as late as 1922 to carry corn from the Irwell to the Great Northern Goods Warehouse on Deansgate. Finally the tunnel was sealed and drained, blastwalls were fitted and it was used as an air-raid shelter during the last war.

The team travelled up the canal tunnel from the river end in two-man dinghies. Progress was painfully slow, as each blastwall had to be circumnavigated using a narrow gap penned in between three walls. The last section was particularly narrow and difficult, but to the team's surprise it was found that it was possible to walk on a raised section to the end of the tunnel. Throughout the tunnel a substantial towpath was in evidence, unfortunately blocked at regular intervals by the blastwalls. Most of the tunnel was of brick arching and as we neared Deansgate, chisel marks in the red sandstone were apparent. There were also a few wartime reminders - posters, old bottles, an old helmet and an Elsan !

The section of the canal underneath the warehouse at Deansgate proved to be much larger than we had expected. Both hoistwells were traced and an iron bollard for mooring up boats was still there set in the towpath. The original 1838/9 entrance to the tunnel was partly obscured by the foundation wall of Central Railway Station, though Richard Hills was able to assess its diameter at around 34ft 6in. Other measurements taken include the following:

Average tunnel width - 20 feet including towpath : Towpath width - 4 feet : Height of towpath above base of canal - 7ft 6in. : Wide chamber under Deansgate Warehouse - Width 39ft, Length 126 feet, Lift passage 8ft wide.

The tunnel was photographed and other notes taken of its construction. The party returned to the surface without any serious mishap, except for the team leader arriving in a soggy state after the dinghy sprang a leak !".

SOME WORDS OF ADVICE TO THOSE GIVING EVIDENCE BEFORE A PUBLIC ENQUIRY

For those who have never attended such an event before it will come as a surprise that the Inspector takes down all the evidence in longhand. As a result improvised and discursive opinions from those giving evidence waste a great deal of time. You will be doing the enquiry a service by having your evidence available on paper so that placing a copy in the hands of the Inspector saves him the chore of writing it down while you present it. It will also help to give a copy to your own side and one to the advocates of unrighteousness. Wait until the actual moment of giving your evidence before handing round your 'copies'. If the opposition lawyers get an advance view of it, they will have the chance to dream up awkward questions.

Be prepared to be questioned. Have the courage of your convictions and do not allow yourself to be browbeaten. Remember that you as the local expert have the advantage over any lawyer from outside. Your presence at the enquiry gives you the right to question opposition witnesses or lawyers, so do not feel that your only function is to give your evidence and then fade away. If you are low in the batting order keep an eye open for any point that has not been made and add it as an appendix to your evidence making it clear to all concerned that it is not included in your script.

Your evidence may be primarily concerned with the industrial or commercial importance of the monument in question, but since enquiries pay particular attention to architectural and historic virtues, if you can establish a point on either of these grounds take care to high-light it.

The likelihood is that at some stage the Inspector will want to visit the site. Again this is an opportunity to make a valuable contribution to the cause by drawing the assembled company's attention to the virtues it has. Do not be surprised if the Inspector is uncommunicative, since he is in honour bound not to show any partisanship during the enquiry. He is sure to be non-committal, even monosyllabic or completely silent.

Finally make your evidence brief, factural and deliver it with conviction.

Michael Rix, University of Birmingham.

ADAPTIVE RE-USE

Some of our more enlightened architects and planners have for years been advocating that the claims of some industrial buildings for conversion rather than demolition should at least be given serious study. The conversion of Perth Waterworks into a visitor centre, and the adaptation of Telford's and Hardwick's St. Katharine's Dock into a trade/residential/yachting complex near the heart of the City of London are but two well-known examples of successful pursuit of this policy in recent years. The recently-published survey 'New Uses for Old Buildings' (see AIA Bulletin 2:2) provide many more case-studies from Britain and overseas.

Granaries and maltings, with their habitually symmetrical and dignified exterior detailing and their uncluttered floor spaces inside, lend themselves readily to conversion for multi-purpose use. At **Bishop's Stortford** the Triad arts centre is housed in a converted riverside maltings, and the successful conversion of the maltings at Snape in Suffolk into a concert hall and arts centre is too well-known to merit description here. The former brewery at Kendal has similarly come to life again as a community and arts centre, and at Freshford in Somerset the brewery buildings, after nearly twenty years of neglect, now form a distinguished and spacious headquarters for an architectural practice.

The success of these and similar conversion schemes has led architects and designers to attempt redevelopment of what may seem at first sight to be the most intractable of buildings. At **Calstock** in Cornwall the engine house of the Cotehele Consols copper and arsenic mine, situated in the Danescombe Valley has been leased to the Landmark Trust and now forms an attractive and much sought after holiday home. Not far away at Bodmin, the former county gaol now houses a restaurant and nightclub. At **Abingdon** the Vale of White Horse District Council has set an enlightened example in financing the conversion of the early 19th century gaol into a leisure centre. The proposal was aired nearly five years ago as a classroom exercise for architectural students of the Royal College of Art, the results of which were displayed at an exhibition in the town's guildhall in 1972. Council members were so impressed by the proposals put forward that they asked the R.C.A. to proceed with detailed plans. The building, although of typically massive proportions, was in a poor state structurally and a good deal of expensive concrete and stainless steel 'knitting' was necessary to make the foundations and main structure safe. Extensions in modern materials were added to accommodate a swimming pool and a new sports hall, but these were faced with stone from some of the demolished inner walls of the prison to preserve architectural congruity.

At **Houghton le Spring** in County Durham a handsome four-storey maltings known as The Old Brewery, unused for several years, is currently being refurbished by J. W. Cameron and Company for use as a public house, restaurant and banqueting hall. An external grain elevator housed in a projecting wooden lucam will be retained as a distinguishing feature, and Tyne and Wear County Council has agreed to contribute towards the costs of restoring the grain elevator. The building is an unusually large one to be constructed of magnesian limestone, and the segmented heads to the window apertures are of shaped brick. The building is listed and stands within the Houghton West Conservation Area; it occupies a prominent position near to a major roundabout, and this was doubtless one of the factors which encouraged the present tenants to undertake the extensive adaptations required to make it sufficiently comfortable to attract diners-out. Inside the building, cast iron columns support timber joists and floors, and these features will be retained and highlighted as part of the building's conversion.

Near the A483 road between Wrexham and Chester stands **Rossett Watermill,** a low breast-shot mill remarkable for the antiquity of its structure and machinery. Passers-by have recently been concerned to note the progressive deterioration in the building's condition, all the more alarming because of the very combustible nature of the structure. A plan to convert the mill into a restaurant held out some hope for its redemption, albeit at the possible expense of some tarting-up of the original installation. This scheme was defeated, largely because of the fears of local residents that such a development would lead to rowdiness and noisy car movement late at night in what is predominantly a rural area. Now comes news that another buyer has been found, who has commissioned an architect to restore the building for use partly as residential accommodation and partly for the retail of antique furniture. We are assured that the machinery will be completely restored to working order as part of the rehabilitation scheme. Compared with the redevelopment of early nineteenth century prisons and mine engine houses, a watermill perhaps presents less problems for the architect; it is to be hoped that in this case no short cuts will be sought in retaining the mill's essential exterior and interior characteristics while re-equipping it for a new working life, which is after all the only way in which most of our industrial buildings can hope to survive if they are thought worth preserving beyond their working lifespan.

CANTILEVER JIB CRANE AT HYDE WHARF ON THE PEAK FOREST CANAL

During restoration of the Peak Forest and Ashton Canals in 1973/74, the whole length of the two canals was walked to make a photographic record of the restoration work and of any buildings and structures of historic interest.

It was noticed that several of the wharves along the two canals featured stout timber posts stiffened by iron bars and hoops and surmounted by a cast iron cap. The purpose of these posts was then unknown, until an old photograph of the wharf at Whaley Bridge in Derbyshire came to light. This showed that the posts where the remains of timber cranes in which the jib pivoted about the cast iron cap on top of the post.

As always, the last section of canal to be walked was literally on the doorstep and the last surviving crane was found at Hyde Wharf and threatened by the M67 motorway.

Research showed that locally these cranes were known as beam creanes and that technically they were described as cantilever jib cranes. Further research showed that besides being the last on local canals, it was one of only a handful left in the country.

The crane at Hyde probably had a SWL of 5 tons and it is known to be not less than 87 years old and could date from the early or mid nineteenth century. Its last reported use was in circa 1946 when it was used to lift coping stones and rubbish from the occasional maintenance boat. One boat which must have called here was the LNER maintenance boat 'Joel' which has now been restored by a group of enthusiasts from the Peak Forest Canal Society who operate the boat under the name of Ashton Canal Carriers.

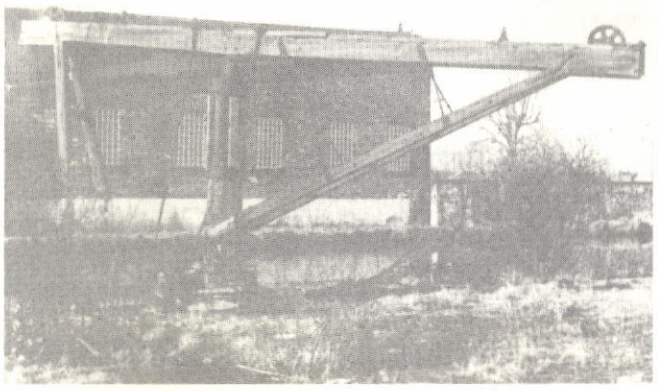
Following a letter in the Design Council's magazine 'Engineering' in August 1974 concerning the restoration of a timber crane at Burbage Wharf on the Kennet and Avon Canal and a chance discussion with a colleague, the matter of restoration was raised at several meetings of the Civic Trust. In the summer of 1975 a boat rally was held at Ashton and representatives of the new Tameside authority passed the crane by boat. They independently realised the historic importance of the crane and they discovered that the old Hyde authority had prepared a drawing of the crane.

Subsequently, Tameside offered the crane to William Kenyon & Sons Limited, who had previously restored the historic Newton Hall. A new site for the crane was chosen close by Newton Hall bridge on the Peak Forest Canal.

A survey of the stone foundations and timber was made by the Peak Forest Canal Society and it was a bitter disappointment to find that the timber post was rotten around the foundations and that the jib was also in poor condition. Professional advice is now being sought on the timber and the future of the crane largely depends upon the advice received.

Four cantilever jib cranes are known to be extant in the country: Bumblehole Basin, Dudley Canal. Burbage Wharf, Kennet & Avon Canal. Hyde Wharf, Peak Forest Canal. Tardebigge Maintenance Depot, Worcester and Birmingham Canal.

P.J. Whitead (AIA) William Kenyon & Sons Ltd., Chapel Field Works, Dukinfield, Cheshire.



STEAM ENGINE ARCHAEOLOGY

Laurence Ince has drawn our attention to the following report in **The Engineer** for 2nd January 1862, page 63. It demonstrated that even though industrial archaeology is a recent development, the spirit of concern for industrial monuments has a long history !

> "The time will come, we think, when old steam engines, imperfect and uncouth though they be, will be regarded with a far greater amount of interest than at present, an interest akin to that which now so generally attaches to ancient buildings and other early works of construction and art. We may say at once, therefore, that it would afford us pleasure to receive and record brief notices of antiquated engines, the whole or portions of which are still in existence. There are many engineers who would be glad to go far out of their way to visit one of Newcomen's, or Smeaton's, or Watt's engines; and even the early locomotives, such as the Globe of Hackworth, the Rocket of Stephenson, the Liverpool of Mr. James Kennedy, or the Eclipse of Dr. Church, would, although none of them are forty years old, be looked upon with much antiquarian interest. Many of the old atmospheric steam engines are, we do not doubt, still in existence, and it may be that some of them are still working. It is not many years since nearly all the winding engines in Staffordshire were atmospheric engines, all having beams, their connecting rods, with their huge balance weights, being shaped more like fiddles than anything now made for the transmission of power. Near a place known as Park Bridge, which is in the neighbourhood of Ashton-under-Lyne, there is we believe, a veritable ruin of a steam engine, the old walls of the engine-house having long since become overgrown with ivy. This Ancient Briton was once employed to pump a coal pit, but either the coal was finally worked out, or else gave into water, when the wheezing old machine at last stopped. The owner of the property on which it stands will not allow it to be disturbed, but gives the iron-work a coat of gas-tar, now and then, and leaves it to itself as if it were a relic of feudal times. Old machinery is so readily convertible into merchantable castings or forgings, that we cannot look for any general imitation of the conservatism to which the existence of the ruin in question is due, but there are, we hope, cases here and there of a like regard for the efforts of the earlier engineers.
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> The atmospheric engine erected by Smeaton to pump water for the supply of the City of York was working only a few years ago. It stood close to where the girders of the Lendal Bridge lately fell over. The cylinder was cast, we believe, at Coalbrookdale, and bore the year of its construction, 1753, in large figures. It would be interesting to know what has become of this old engine. Another of Smeaton's engines, on the atmospheric plan, was working not long since at the Carron Ironworks, near Grangemouth, Scotland, where it was erected sometime, probably, between 1760 and 1770, a pig of iron in the gable of the casting house bearing the date of 1759. This engine was employed for a singular purpose; the machinery of the works was driven by a water wheel, but occasionally, in the summer, Carron Water run low, when the steam engine was started to pump up the discharge from the tail race to flow again over the wheel.
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> The old engine at Killingworth colliery, repaired by George Stephenson was working not long ago, and may be still in existence. Its cylinder was 6ft or 7ft in diameter, and at some time subsequent to its original construction it was "compounded" by applying two cylinders of about 20in. diameter, one on either side of the large cylinder, the three pistons being connected to the same cross-head, and having, therefore, the same stroke. This was also an atmospheric engine, the top of the cylinder being open and the piston being covered with water.
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> Messrs. Combe, Delafield, and Co., have at their brewery, in Castle-street, Long Acre, the second steam engine erected by James Watt, in London. It is still in good running order, and is worked occasionally whenever a newer and more powerful engine on the premises is being repaired. The old engine originally had a wooden beam and connecting rod, both of which have been changed for others of cast iron. The original sun and planet wheels of brass are still retained, the fly wheel making two revolutions for every double stoke of the piston. The cylinder is 24in. in diameter and the stroke 6ft. The steam pressure to which the engine is worked is 10lb. per square inch.
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> We have understood that the first engine erected by Watt in London, at Whitbread's Brewery, is still in existence. The pair of fly-wheel pumping engines erected at the East London Waterworks at Old Ford, in or about 1807, are still in good working order. We do not doubt that a little inquiry and communication among engineers would disclose many an example of very old engines, some of them, perhaps still at work, and as we have already said, we would be much pleased to hear from such of our readers as can supply authentic particulars of such engines.

It is our impression that Timothy Hackworth's locomotive - the Globe - turned out in 1829, and the first ever made with inside cylinders and a crank axle, has not passed entirely out of existence. A year afterwards Edward Bury, or, it may be more just to say James Kennedy, built the Liverpool with a crank axle, inside cylinders and 6ft driving wheels, and it was not until after the Liverpool had been run for some time on the Liverpool and Manchester line that George Stephenson delivered his first inside cylinder engine. Whether either of these engines has been preserved from the scrap heap we do not know, but the Rocket, built in 1829, and which was the nineteenth locomotive made by George Stephenson, besides being the second made by him for the Liverpool and Manchester Railway, is still treasured up at the Forth Street Works at Newcastle. We had a description not long since, from an American paper, of an old engine built by Stephenson for the Camden and Amboy Railroad, in the United States, and it appeared that, although one of the first run in the States, it was still in good state of preservation. The first locomotives ever run in the States were built at Stourbridge in 1828, and had the old single-flue boiler of the period. As they were not found to answer their intended purpose, we doubt if any respect was paid them, and probably nothing is now left of them. A correspondent was good enough, not long since, to give us the present whereabouts of Dr. Church's tank locomotive, the Eclipse, made in or about 1835.
Unlike many of the works of mediaeval and ancient times, the primitive steam-engines were not at all excellent in their way. No practical profit could now be derived from studying them, whereas something might be made by consigning them to the cupola and the forge. There will, we nevertheless hope, be found some lovers of the old and curious who will make it their business to preserve the few examples still extant of the steam engineering of a former century, for, in prespect of this measure of time, historical truth does not allow us to speak in the plural".

It is interesting to speculate whether the engine mentioned here as being near Park Bridge was the pumping engine known locally as "Fairbottom Bobs", a Newcomen engine thought to have been built about 1750. Its subsequent history is obscure, but the engine is believed to have been re-erected at Fairbottom Valley, Lancashire, about the end of the 18th century, where it drained the Cannel Mine until about 1827. After it stopped work, the engine gradually fell into ruin, but was still substantially intact when photographed in 1860. Later the wooden beam fell on its side. Some of the original metal components and a reconstruction of the beam are now to be seen at the Henry Ford Museum at Dearborn in Michigan, with a contemporary wrought-iron haystack boiler alongside.

VICTORY FOR RESIDENTS

The residents of Victoria Road, Mortlake, London have been successful in their bid to prevent Richmond Council from demolishing two concrete cottages. These cottages may be unique examples of artisans dwellings built in the Industrial Revolution and GLIAS's correspondent for Richmond, Mrs. Elizabeth Wood is pleased that the retention of the buildings allows the Society to investigate their history further.
The Local Council wished to demolish the houses in order to straighten the road and thereby increase road safety. The residents countered by asking how the Council proposed "to improve on nil accidents?".

THE AIA SCHOOLS COMMITTEE

It is known that a number of local groups are preparing educational packs for schools on various aspects of industrial archaeology. The committee feels that, even if this material is produced with a specifically local area in mind, much of it might be of assistance to schools in other areas even if only as a guide to show them what to attempt in their own vicinity. In view of this, the committee is anxious to compile a list of these educational packs and would be most grateful to hear from anyone who has information about any, or who can send copies, together with details about how teachers should apply to get copies, price etc.
The committee is also anxious to publish a list of historical novels which have an industrial background. These can often give an extremely good sense of period to adults as much as to children. As an example we would quote 'Black William' by Robert Neill which paints well the period of the early wooden waggonways in North East England. We would be glad to have suggestions for books to be included on our lists, if possible stating whether for adults or for children and perhaps giving a few comments on technical accuracy.
Please send all information to Christine Vialls, 30 Red Post Hill, London SE 24.

SITES TO VISIT

KEW BRIDGE BEAM ENGINES, Kew Bridge Road, Brentford, Middlesex.
Open Saturdays and Sundays 11.00 a.m. – 1.00 p.m., 2.00 p.m. – 5.00 p.m.
1820 Boulton & Watt Engine, Harvey 100" engine, forge and workshop and museum of London's water supply.

EARBY MINES RESEARCH GROUP MUSEUM, Earby, West Riding
Museum contains collection of mine tubs, photographs, mine plans, small exhibits, mining machinery, miner's personal belongings, etc.

HEREFORDSHIRE WATERWORKS MUSEUM, Hereford.
Open first Sunday each month, 11.00 a.m. – 5.00 p.m.
A winner of the B.P. – AIA Industrial heritage scheme, a worthwhile preservation of a Victorian waterworks. In steam on the weekends 29/30 August and 25/26th September.

LLWERNOG SILVER-LEAD MINE, Ponterwyd, Aberystwyth, Dyfed.
This site, of over four acres, run by the Mid Wales Mining Museum Ltd., allows the industrial archaeologist to explore the water supply and power, mining techniques and ore dressing. Well worth a visit.

LEICESTERSHIRE MUSEUM OF TECHNOLOGY, Abbey Pumping Station, Corporation Road, Leicester.
Leicestershire Museum of Technology announce the following steam days in 1976 :-
7/8th August – Steam Shovel: 18/19th September – Beam Engine: 18/19th December – Beam Engine:
Admission: Adults 25p, Children and OAP's 10p.
Open 2.00 p.m. – 5.30 p.m.

WHATS COOKING AT BEAMISH ?

This is the title of the 1976 publicity brochure from the North of England Open Air Museum. Attractions this year include the working replica of Locomotion, the reconstructed Rowley Station, an electric tramway, steam navvy and restored farm. Open every day (except Monday) 10.00 a.m. to 5.45 p.m. Enquiries to the Museum Director, Beamish Hall, Beamish, Stanley, Co. Durham.

THE JOURNAL INDUSTRIAL ARCHAEOLOGY

Most members of the Association will know that the Council have no connection with, and responsibility for, the journal **Industrial Archaeology.** The Association's Editor, Dr. John Butt, in fact resigned as editor of the journal **Industrial Archaeology** with effect from 31 January 1975. He left two issues with the publishers, West of England Press, one for November 1974 and the other for February 1975. To the time of writing this neither of these has appeared.
The Council are most concerned that members should not consider that they have any responsibility in the matter, and all enquiries relating to the journal **Industrial Archaeology** should be directed to the publishers, West of England Press, Publishers, Ltd., 1 West Street, Tavistock, Devon.

AIA Bulletin is published six times a year by the Association for Industrial Archaeology. The Association was established in September 1973 to promote the study of Industrial Archaeology and encourage improved standards of recording, research, publication and conservation. It aims to assist and support regional and specialist survey and research groups and bodies involved in the preservation of industrial monuments, to represent the interest of Industrial Archaeology at a national level, to hold conferences and seminars and to publish the results of research. Further details of the Association and its activities may be obtained from the Secretary, Association for Industrial Archaeology, Church Hill, Ironbridge, Telford, Salop, TF8 7RE, England (095-245 3522).