

A LIME BURNING REVOLUTION

The influences of the Industrial Revolution are apparent in many aspects of the archaeology of the eighteenth to twentieth centuries. Industries like iron smelting and cotton spinning were swept along early by the 'Revolution', but its influences on others took longer and came about in different ways. The production of lime was one activity slow to change, remaining for most of the eighteenth and nineteenth centuries mainly a small-scale business, with little technical innovation. However, a process industrialisation did occur. Recent work at one important lime producing site in the Pennines provides a microcosm of developments which affected the industry in the late nineteenth and early twentieth centuries.

In May and June 1989 the site of the Langcliffe Limestone Quarry and kilns, near Settle in North Yorkshire, was the subject of an archaeological survey in advance of proposals to develop the site as a tourist attraction. The survey was carried out by the Lancaster University Archaeological Unit on behalf of the Ribblesdale Trust, according to a brief outlined by Robert White of the Yorkshire Dales National Park. The aims of the survey were to provide a detailed inventory and survey of remains on the site, and to construct a preliminary account of its development using physical, documentary and oral evidence.

The use of lime grew rapidly during the Industrial Revolution. It was the major ingredient of mortar for building, it was used widely as a fertilizer, and it had a crucial role as a flux in iron production. Other uses were in tanning, bleaching, disinfection, glass manufacture and paper making. There is little published work to establish the historical development of lime burning, either in the Pennines or nationally. However Arthur Raistrick, in *Old Yorkshire Dales*, suggested that the lime industry of the region reflected general trends. For the medieval period he identified the existence of temporary kilns for building, and scattered and intermittently operated kilns for agricultural use. Improvements in agriculture in the sixteenth to eighteenth centuries led to expansion of the lime industry. However, Raistrick suggested that the scattered pattern of lime burning in the Dales remained much the same into the nineteenth century, with the important addition of clusters of 'selling' kilns where limestone was adjacent to coal supplies.

In the Settle area, there seems to have been a well established lime industry by the mid nineteenth century, producing lime mainly for

local consumption. But 'Revolutionary' changes came as an immediate consequence of the construction of the Settle and Carlisle Railway, which connected the area with large external markets. The Langcliffe quarries and works, three miles north of Settle next to the newly constructed southern section of the railway (SD 824 663), were one product of the expansion.

The Langcliffe complex consisted of two neighbouring but independent limeworks, both of which began in 1872-3, transporting large quantities of quicklime to Bradford and Sheffield on the new railway. The larger of the two was the Craven Lime Company, formed by the long-standing partnership of John Clark and Michael Wilson; the smaller was the company of Thomas Murgatroyd.

Murgatroyd built a traditionally designed, if massively scaled, set of three draw kilns for burning the lime. However the Craven Company decided on an even more massive

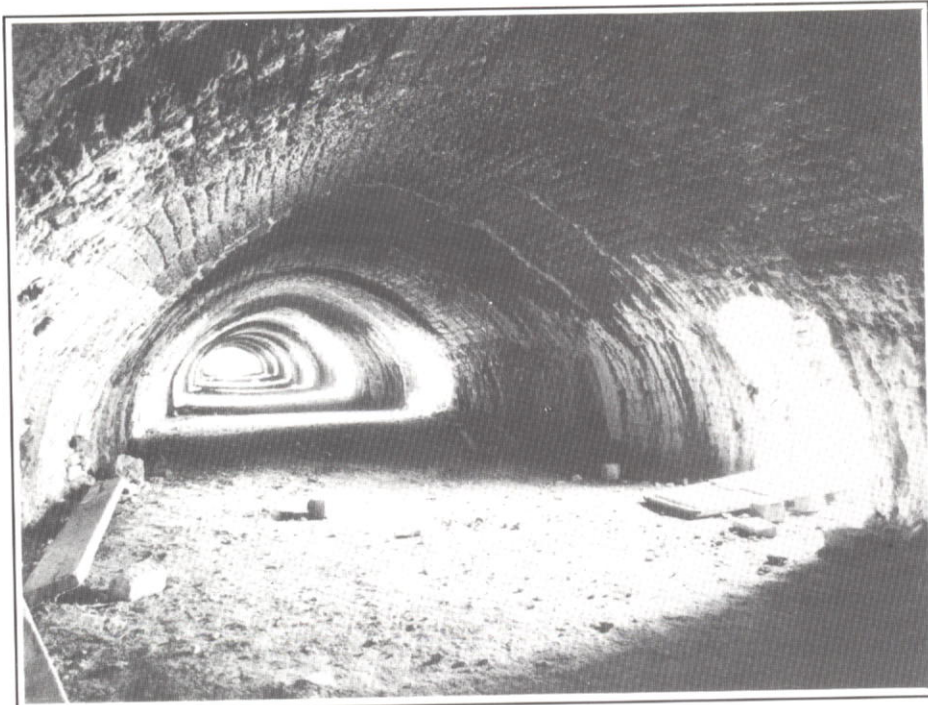
Hoffman-type kiln which today is a Scheduled Ancient Monument. The kilns survive substantially intact together with the base of a later, vertical steel kiln and associated quarries, transport systems and ancillary buildings. The Murgatroyd works had closed by 1907, but the Craven works were in production until 1939. After the war the site passed through several ownerships before becoming a rubbish dump.

An aerial view (*below*) shows that substantial parts of the layout and structures of both limeworks survive. On the Craven site the latest phases of quarrying, above and left of the refuse tip. Within these areas and leading to the processing area can be traced some of the site's tramway network. This included weighing machines, a tunnel under one of the spoil heaps, and at least two inclined planes--the most prominent surviving above the oval Hoffman kiln, complete with drum housing. Between the quarries and the mainline railway



Aerial view of the Langcliffe limeworks

Photo: Robert White, Yorkshire Dales National Park



Inside the Hoffman kiln at Langcliffe

Photo: LUAU

the 'Stainforth Sidings' provided the link that brought coal in and took lime and limestone away. The buildings here are now the County Council refuse depot, but old photographs and Ordnance Survey maps indicate that some were workshops and offices dating from several phases of operation. A stone crusher was also probably used in this area.

Thomas Murgatroyd's main quarry lay at the far left of the photograph with, possibly, a second quarry to the left of the kiln bank. The large rovelment wall of the kilns and their charging holes can be made out just above the railway, with a line clearly shown leading down from its base. An inclined plane raised coal from the sidings to the charging ramps.

The remains of the three kiln types used at Langcliffe are visually impressive as well as representing distinct stages in limekiln technology in the 'industrialisation' phase of the trade. The three large draw kilns of the Murgatroyd works represent the earliest stage of kiln technology on the site. This type of kiln appears to have developed in the early to mid eighteenth century as a refinement of the primitive flare kiln. Burning was a continuous process with limestone and coal being fed in alternating layers from the top of the kiln into an inverted cone. A 'burning zone' was maintained at the approximate centre of the kiln and burnt lime was extracted from the draw hole at its base.

The operation of the Hoffman kiln was, by contrast, a horizontal process. Limestone was packed into a continuous tunnel, usually in two separate stacks at opposite ends of the kiln. Coal was fed from the top through a multitude of 'feeder holes'. Draught was provided by a chimney through a network of flues. A fire was maintained in both limestone stacks, the

advancement of which was controlled by opening and shutting the flues and varying the quantity of coal fed from above. Fresh limestone was continually packed ahead of the 'burning zone' and lime extracted from behind it. This type of kiln was capable of producing large quantities of lime, could be repaired without halting production, and was reputed to produce a very pure lime.

The circular form of the kiln was patented by Friedrich Hoffman in 1858 for brick making. Many improvements followed and the first use for lime burning presumably dates to this period. Hoffman himself, in 1870, patented a nearly rectangular version that became the more usual design. The Langcliffe Hoffman kiln, which dates from only three years after the second patent, is an unusually large example, with a tunnel just under 800 feet long.

The second kiln at the Craven Works was of a

family of kiln types still in use today. 'Vertical' kilns seem to have been a steel-clad development of the draw kiln with the essential difference that fuel was fed directly into the burning zone. There were many variants: the Dietzch kiln, for example, was developed for cement manufacture in 1884 and later adapted for lime, and others included the Aalbr Smidth and Spencer kilns. The exact make of the Craven example is not known, although Spencer kilns were in use nearby. Its date of construction is also unknown, although it was clearly in use by 1907.

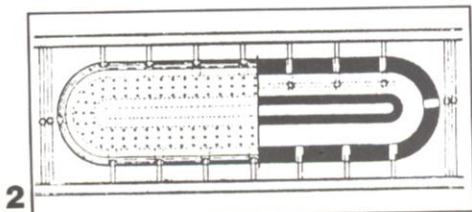
The Langcliffe site is important not just because of the scheduled Hoffman kiln. The draw-kiln and steel-kiln types illustrate stages of technological development in the late nineteenth century, when important advances were chiefly of foreign origin. With its transport system and many ancillary buildings, the site constitutes a valuable document of the most revolutionary stage in the development of the lime industry as well as of the industrial history of the Yorkshire Dales.

The investigation of the site will continue, and publication of the survey and oral history research is planned. The authors will be grateful for information about comparable or contrasting sites elsewhere, and in particular about other Hoffman limekilns. No methodical survey of Hoffman kilns has yet been attempted, but others are known to survive at Ingleton in North Yorkshire, Llanymynech in Powys, and Minera in Clwyd. Two kilns survive closer to their technological origins as part of a museum project at Witten in the Ruhr. Three examples, now demolished, stood near Buxton in Derbyshire and two more near Betchworth in Surrey. Communications should be addressed to Michael Trueman at the Lancaster University Archaeological Unit, Bailrigg, Lancaster, LA1 4YB.

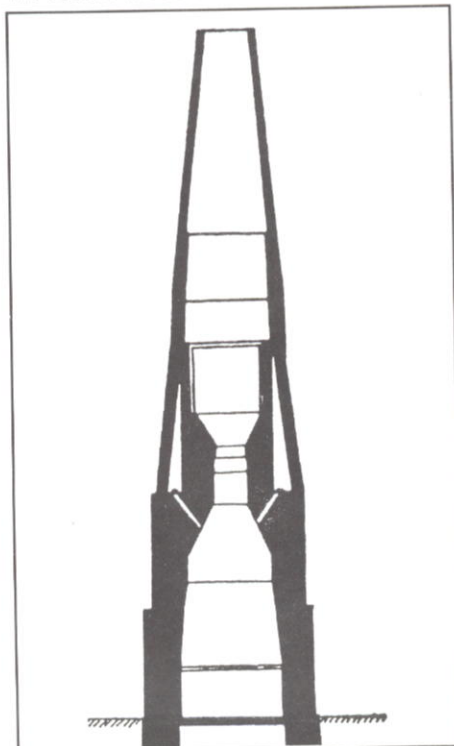
Michael Trueman
Lancaster University Archaeological Unit

HELP! TO ABSTRACT OR NOT TO ABSTRACT

The AIA Abstracting Service has now been operating for several years. Its purpose is to keep members informed of articles on industrial archaeology and allied subjects which appear both in local society publications and in the national and technical press. The abstracts appear at the back of each issue of *Industrial Archaeology Review*. The scheme is that abstracts be sent in on a regular basis by a network of contributors. Special forms are issued, and little work is involved. Unfortunately, the number of volunteers participating is currently very small, and this is reflected in the fairly narrow range of publications which are normally quoted. New volunteers are therefore urgently needed who are willing to keep a watching brief on journals to which they may already subscribe or which they can readily see. Undertaken properly, this could be an extremely valuable service, summarising some of the myriad articles which are relevant to industrial archaeology but which even the most dedicated could not possibly keep abreast of alone. Supplies of forms and other details are available from John Powell, The Library, Ironbridge Gorge Museum, Ironbridge, Telford, Shropshire, TF8 7AW (095245 2751). If more volunteers do not come forward, it may be concluded there is not sufficient interest to justify continuing.



2 Hoffman kiln in plan, from A B Searle, *Limestone and its Products*, 1935



1 A vertical steel kiln, from A B Searle, *Limestone and its Products*, 1935

ANCOATS CONSERVATION AREA

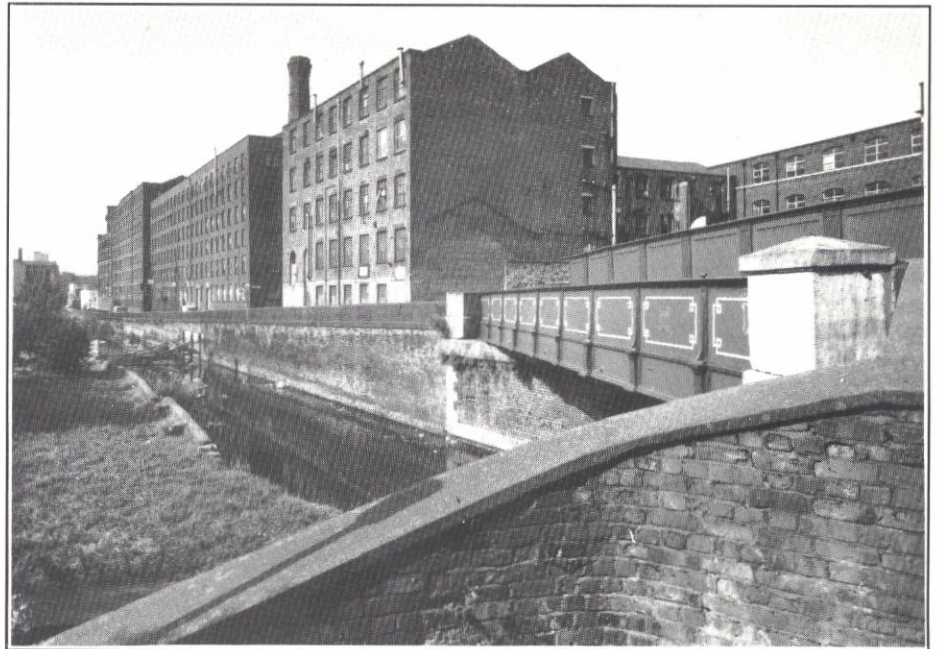
In 1986 the Manchester Literary and Philosophical Society held a seminar to discuss ways of conserving Manchester's heritage. Following this, a group of concerned individuals from a wide variety of amenity societies formed 'Ancoats Past and Present', a loose association which determined to press for Ancoats to be declared a conservation area, with the intention of preserving not just the fabric of the area but the spirit of the community which has evolved. The group carried out an extensive survey of all remaining buildings. It presented its case to a sympathetic planning department and in September 1989 the City Council agreed to grant conservation area status.

Ancoats was a planned industrial suburb of eighteenth-century Manchester and is a microcosm of the city's industrial revolution. Farm-land outside the city was divided into building plots in the 1780s and the area soon became a focus for huge steam-powered cotton mills, engineering works and related trades. Some of the country's most successful entrepreneurs were based in Ancoats, including the cotton spinners A. and G. Murray and McConnel and Kennedy, and the engineers Fairbairn and Lillie. Industrialisation was dramatic even by Manchester standards, and by 1849 it was said that 'Ancoats is to Manchester what Manchester is to England'. Industry was attracted by the availability of building land close to the region's commercial centre and also by the completion of the Rochdale Canal with its network of branches and basins.

The canal was the essential artery for the transportation of coal, raw materials and finished products, but also provided water for steam power, enabling the mills to be packed closely together without reservoirs. The development of industry was matched by a great influx of population. By 1821, 21,000 people were crammed into the area, the vast majority living in appalling conditions. In 1849 Ancoats was described in the Morning Chronicle as **thousands of by-lanes and squalid courts [where] the staked-up piles of undrained and unventilated dwellings swarm with the coarsest and most dangerous portions of the population**. In the 1880s conditions were ameliorated by sanitary improvements and the construction of Manchester's first municipal housing.

Surviving structures include a major group of early cotton mills which have been the subject of detailed study by the Royal Commission on Ancient Monuments in England and the Greater Manchester Archaeological Unit mill survey. Other industrial and community buildings also survive to bear testament to the area's past, including the original street pattern and parts of the canal network. The cotton mills have all been listed and many other structures are thought to be of listable quality.

Manchester was the world's first industrial city and Ancoats is the only area which still epitomises this primacy. There can be few areas in the world which so graphically illustrate the development of an industrial community from the beginning of the industrial revolution. The Ancoats group believe that this unique urban landscape is a positive resource from which the revitalisation of industry and community can proceed. As a group, it is aware that designation as a conservation area is no guarantee of preservation. Indeed, many of the



Ancoats conserved: Murray's and McConnel and Kennedy's cotton mills, the oldest extant mills Manchester, from the Rochdale Canal.
Photo: copyright RCHME

structures surveyed are in a poor state of repair. We can only hope that this first step will be supported by investment. The Ancoats group will endeavour to monitor 'progress' and

contribute in any practical way it can.

*Mike Williams, RCHME/GMAU Mill Survey
Carol Whittaker, Museum of Science and Industry, Manchester*

LETTERS TO THE EDITOR LABOUR EXCHANGES

Dear Sir,

Preservation is a remarkable thing, particularly when one realises that the majority of it is voluntary. Unfortunately, the numbers of volunteers are declining. Have would-be volunteers joined the armchair majority? Or is it possible that there is simply a lack of knowledge of where volunteer help is needed?

Most private traction engine owners, lucky fellows, probably have all the help they want to look after their engines. The railway preservation movement does quite well for helpers also, though they could probably wish for more. However there is another outlet for frustrated steam engineers: the stationary steam engine. These huge engines powered the mills and factories, pumped the water we drank and took away the waste we all created. The stationary engine preservation movement is small and very enthusiastic, but frustrated for lack of volunteer help. There must be large numbers of people who would love to get involved if they knew where to go.

AFFILIATED SOCIETIES

Secretaries of Affiliated Societies will already have received details of the spring Working Weekend which are being sent out with this programme for other members of the Association. As you will see, we have a varied programme, with something to interest everyone. I do hope that many of you will join us. If you have never been to these meetings, I can assure you that those who come along usually find them enjoyable and instructive. As well as providing the opportunity to hear speakers on many topics, the gatherings offer a chance to meet both members of other Societies, and Officers, Council and members of the AIA. I hope to see you in Ironbridge in March.

By the time you read this, the questionnaire sent out to Affiliated Societies should have

I feel the time has come to set up a 'help line'. Engine owners and preservation societies could register themselves when they needed help. Enthusiasts could then call in and be told of projects needing help in their area. The list of projects is long: Armley Mills Museum in Leeds would like more volunteers, as would the small society who look after the engine in Bancroft Shed, Barnoldswick in Lancashire, the Northern Mill Engine Society at Atlas Mills in Bolton, and Mr Peter Stuart-Blacker, the owner of Keith Bank Mill at Blairgowrie in Perthshire. The list is long, the help short!

Chris Evans, Pickering

Most members of AIA will know of preservation schemes in their areas and can contact them directly. However, a more wide-reaching service might well prove fruitful. If any member wishes to take on the role of registering needs and giving information to prospective volunteers, perhaps on a trial basis, the AIA would consider ways in which it might be able to assist.

been returned, and after processing, incorporated into the updated Local Societies List, which it is intended to publish in the spring. We hope that it will be a valuable aid to local groups, and also to individuals. It has been very pleasing to learn that the number of societies affiliating has increased, and to those who have just joined us, welcome! I will repeat my plea for 'Society Profiles': if you can send me a short piece giving details of your group, it can be included in the *Bulletin*. I would also be pleased to hear from societies if they have any ideas regarding ways the AIA might help them, or any suggestions for topics or speakers for future Working Weekends. Do write: the address is 20 Stourvale Gardens, Chandlers Ford, Eastleigh, Hampshire, SO5 3NE.

Pam Moore

CONSERVATION AND THE H2OWNERS

Among the considerable assets which their new share-holders can now contemplate, the 'ten water companies of England and Wales' have an architectural legacy which includes some of the outstanding steam engine houses in the world, as well as water towers and dams of powerful and ingenious design. The multiple beam engine palaces of the mid-nineteenth century are among the finest products of a collective mind awash with the architectural styles of the past, built by a nation newly conscious of its civic dignity and national wealth. The great halls built to house the towering wedding cake triple expansion engines from the 1890s are swagged and decorated with typical Edwardian pomposity. Through highlands from Wales to Scotland the new industrial conurbations appropriated valleys to create reservoirs with a Wagnerian eye, whilst across lowland Britain water towers mushroomed in styles from the Greek revival to the Arts and Crafts.

These buildings constitute the principal architectural forms of the water industry, an uncatalogued expression of the urbanisation of Victorian Britain. In a book planned for later this year, SAVE Britain's Heritage are hoping to make both the general public and the new

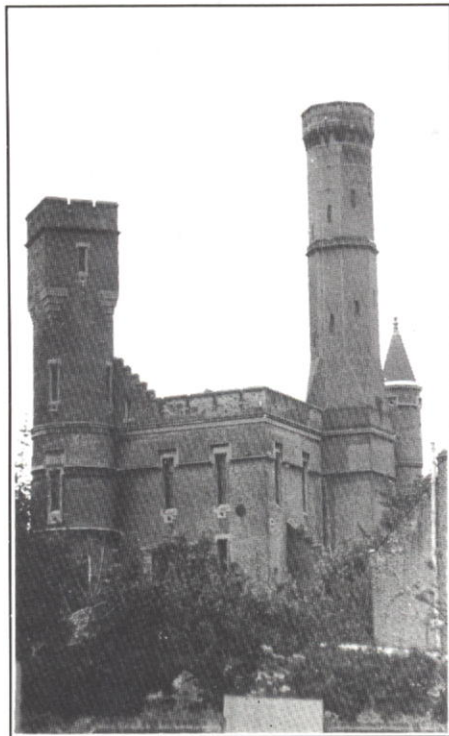
architectural legacy, so that the development which is bound to follow privatisation does not obliterate structures whose value may be missed if only viewed on a balance sheet. The old water authorities, despite some lapses, like the demolition of Elkesley in Nottinghamshire, were usually sympathetic, valuing amenity and maintaining buildings to a high standard. The pressures on the new companies, both from customers fretting about clean tap water and from profit-anxious stockholders, will be quite different, so they should at the very least be properly informed as to the importance of their buildings and the value we put on them.

Such information is an important supplement to the statutory controls on development, since as Oliver Percy and Peter White have recently pointed out in Conservation News, '...neither scheduled monuments or listed building controls provide a totally satisfactory basis for controlling works to historic plant'. The position of buildings like water towers which may, through their singularity of function, be viewed as plant, is notoriously uncertain, and it is a relief that English Heritage are sympathetic to the potential problem.

Faced by a building no longer in use, what should the new companies do? Full preservation in operating condition is obviously the ideal solution, and for the likes of Abbey Mills, every effort must be made by public and private

groups towards this end. Alternatively, plant can be mothballed, as at Maply Brook, Chorley, while the building continues to house replacement electric pumps. New uses have been found which provide for repair and maintenance costs, and these spacious and well-lit buildings can often be adapted, for instance as orchestral rehearsal rooms, or even for living.

In the case of demolition, full records have to be made, though it is hoped that by recognising the importance of the industry's collection, losses may be minimised. The first step must be to carry out a comprehensive stock-taking, since preliminary research seems to show that there is nowhere a complete list of the historic buildings of the water industry. The author of the SAVE study is appealing for information, particularly about those buildings most likely to be overlooked and which local knowledge might pick up, and for contact with people already recording and protecting structures linked to the supply of water and the removal of sewage. SAVE has an excellent record of raising awareness within the public, the media and private organisations of the need for conservation, and this is a good opportunity for industrial archaeology to advance its undervalued case for protection and preservation. Please write to James Douet, 16 Crowndale Road, Knowle, Bristol BS4 2DZ (0272 776316)



Gothic Horror at Green Lane pumping station, Harringay
Photo: James Douet

companies appreciate its beauty and importance, and to help the best parts to survive the most drastic changes since the extinction of the great steam engines with the coming of the compact electric pump.

The record of conservation in the water industry has been generally good, many of the finest engine houses becoming museums or being run intact by voluntary trusts. The most glaring exception is the finest of them all however, Abbey Mills in east London, which continues to languish in Hammer Horror splendour under a veil of dirt. The new study will aim to highlight those buildings most in need of the kind of care that has been provided by the best examples of active preservation, such as at Ryhope, Brighton and Kew.

Equally it will try to produce a coherent picture of the extent and diversity of the industry's

THE CBA DI CARDI LECTURE 1989

'Industrial Archaeology: present problems and future directions' was the theme chosen by Dr Neil Cossons, Director of the Science Museum, when he addressed a minuscule audience at the University of Birmingham in December.

Dr Cossons began by remembering the beginnings of industrial archaeology under the aegis of this very university in the mid 1950s, when Michael Rix and others began to examine and define industrial monuments in the unloved post war landscapes of the west midlands. The Council for British Archaeology's Industrial Archaeology Research Committee had been a powerful influence since 1959, and the Industrial Monuments Survey which it fathered had, through its thematic and county surveys, been of inestimable value in identifying key sites and securing their protection.

Industrial Archaeology had not, however, secured recognition in itself, and still had to achieve three things before it can be said to have come of age. First, more practitioners are needed to develop the particular skills required and to formalise studies of industrial landscapes. The academic 'critical mass' has not yet been reached, and industrial archaeologists trained by postgraduate studies need to find employers. Second, there are still not enough resources to tackle the demands of industrial archaeology; it missed out on the funding of rescue archaeology in the 1960s, and has never attracted the resources to develop a proper record on the lines of the Historic American Buildings Survey and Historic American Engineering Record in the United States.

Third, attitudes to industrialisation have not been changed. It is not yet possible to have the processes which normally preserve monuments of the distant past applied to monuments of the industrial age; instead industrial archaeology accepts the diminishing processes of adaptive re-use, even for monuments of undoubted world significance. If the basic problem is financial stringency, perhaps there should be some de-accessioning of early

guardianship sites. But to take on, for example, St Pancras would mean the loss of a lot of long barrows in Wiltshire. Old sites in rural areas are cheap to run, and the archaeological establishment is not equipped to deal with the scale of monuments later than the post-medieval.

Neil Cossons went on to outline three initiatives which could tackle these shortcomings. It is time to accept that a legitimate breed of industrial archaeologists does exist, and ensure that these rare beings can train others. This initiative will only be successful if there are places to employ industrial archaeologists, and various institutions—English Heritage, the Science Museum, Ironbridge, the Black Country Museum—should make an act of faith and use such people to further their work. Then academic industrial archaeology needs some academic homes to house and develop the breed; in one or two university departments of archaeology, which currently oversupply the earlier period skills but produce no-one to further industrial archaeology. The Ironbridge Institute, founded on industrial history and a preservation ethic, he said, needs a stronger archaeological root.

Finally, English Heritage needs a new method of 'guardianship', involving local enthusiasm, management agreements, and a partnership in funding. About forty important industrial monuments are currently in the care of 'enthusiast' groups, but what happens when the enthusiasts can no longer manage? Dr Cossons spoke of Queen Street Mill, the last steam-driven textile mill in Britain, where the traditional form of guardianship is a non-starter because the process of persuasion is too difficult, and where the real dilemma is the lack of local enthusiasts. As the old skills die out, it is a dilemma which might be assisted by a sort of National Trust for Industrial Archaeology, providing expertise, management and site custodians on a regional rather than a site basis. By these three developments the two branches of industrial archaeology—the recording of period archaeology and the preservation of its sig-

CONSERVING A CLIFF TOP LANDSCAPE

As with many former industrial processes, archaeological evidence relating to the production of alum on the North Yorkshire and Cleveland coasts has all too quickly disappeared. This is true in spite of the fact that there were more than thirty sites producing alum in the vicinity of this stretch of coastline. The loss of evidence is striking in such a rural area, especially when one considers that the last works, at Boulby, ceased production only in 1871.

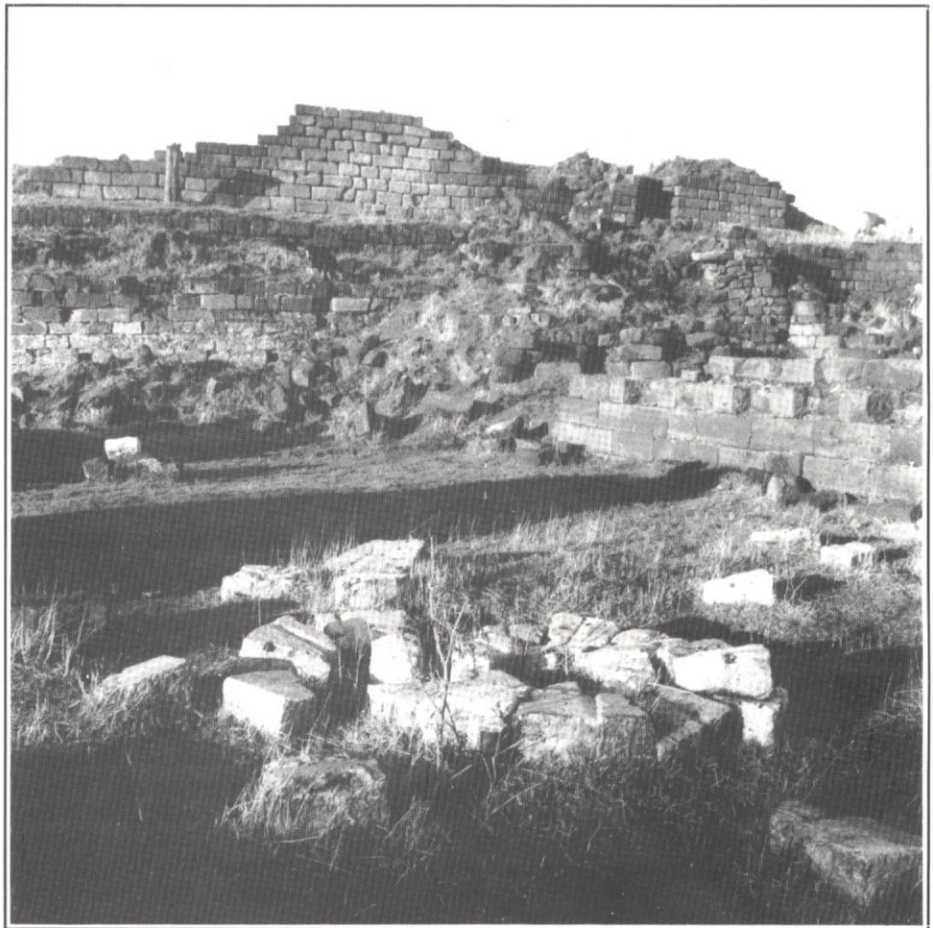
Before the introduction of a cheaper manufacturing process in the mid nineteenth century, Yorkshire and Cleveland alum was widely used as a mordant for dyeing textiles and as a preservative when tanning leather. The industry has a fascinating history which began in Britain with the attempts of Thomas Chaloner to produce indigenous alum around 1600 as a means of bypassing the monopoly held by the Pope over its production and distribution. Then for much of the seventeenth century the industry was crippled by a royal monopoly and stifled by failure to perfect techniques of production. It did not become profitable until the second half of the seventeenth century, when the monopoly was removed and technical limitations were overcome. Management agreements in the eighteenth century bear witness to the fact that alum production was becoming increasingly profitable. Output in 1774 was limited to 2,400 tons shared between 14 works with a combined capacity of 4,200 tons.

The production of alum has had an unmistakable impact upon the landscape. Huge scars caused by the quarrying of alum shales are characteristic of the coastline between Scarborough and Whitby and beyond to Saltburn. The quarried shale was built into enormous calcining clamps and roasted before being steeped in water to dissolve the alum salts. Most sites were based on the coast for ease of transport and to take advantage of outcropping alum shales. The main processing plants where the resulting 'liquor' was boiled and refined were usually situated dramatically on the cliff edge. Raw materials, including coal and human urine, could be brought in by boat and the resulting alum shipped to London, Hull and Newcastle.

Much of the archaeological evidence relating to alum production has been lost due to demolition or as a result of coastal erosion. At Ravenscar in North Yorkshire, however, where the Peak Works produced more than 60,000 tons of alum on an intermittent basis between 1650 and 1862, there is still sufficient evidence for the industrial archaeologist to be able to trace the processes involved. The main processing plant belongs to the National Trust, together with the associated quarries, waste heaps and inclined tramways linking the works with a rock-cut dock at sea level. It is undoubtedly one of the best preserved landscapes created by the alum industry and perhaps the only site where its production can be fully comprehended.

continued from page 4

significant monuments—might be revitalised. The Chair was taken by Professor Rosemary Cramp, of Durham University Department of Archaeology and newly elected President of the CBA. A lively discussion ensued, partly on the vision of industrial archaeology as a period



Windswept walls at Peak Alum works: the main processing site for breaking alum crystals into 'flour', with grindstone fragments in the foreground
Photo: Gary Marshall

In view of its significance the National Trust is committed to preserving and presenting this cliff-top processing site and its setting. The main foundation walls illustrating the arrangement of reservoirs, cisterns, boiler houses, coolers and warehouses involved in the production of alum, together with associated structures including a winding house, inclined tramway and cottages housing part of the workforce. This is to form the focus of a major consolidation programme in 1990 which aims to stabilise the surviving evidence through a combined strategy of repointing and rebuilding using skilled masons trained to work under archaeological supervision, whilst also protecting exposed foundations and sealing archaeological layers with topsoil and turf.

The approach is perhaps unusual in applying to a fairly recent industrial site responsible and cautious recording and archaeological protection techniques which are normally reserved for more ancient sites like abbey ruins and Roman forts. Detailed survey work using rectified photography, levelling and elevation-drawing is being carried out in advance to ensure the accuracy of subsequent reconstruction.

It is intended that the public will be able to view the site and observe the consolidation work in 1990. At a later stage it will be possible to explore the processing plant and gain an insight into the manufacture of alum. The

evidence is to be explained by a series of interpretive panels relating the archaeology to contemporary descriptions of alum production. Sponsorship is to be sought for this aspect of the project with a view to developing the site as an interpretive centre describing the historical development of the works and placing it in its regional context. It is a scheme which it is hoped will be an example of some of the approaches discussed and supported at the recent AIA-sponsored conference on metalliferous mining (reported in *Industrial Archaeology Review* XIII.1, Autumn 1989): in particular those concerning the importance of relating monuments to their surrounding landscape, combining archaeological evidence with documentary sources, and realising tourist potential.

Gary Marshall



Calke Abbey; from the AIA Fieldwork Award winning entry by Gary Marshall and James Walker. See page 6.

study, and partly on the present changes and opportunities in the subject. Some of the audience may have departed to examine their consciences—and a December Friday evening in the middle of England may have shown that something desperately needs to be done about industrial archaeology.
John Crompton

NEWS ITEMS

COURSE FISHING

The Ironbridge Institute's courses in industrial archaeology and heritage management have now been established for several years. These are taken by students full-time over one year, part-time over two, or on a modular basis over four years. However, for the first time this year, the Institute is making it possible for people to angle for just the elements they are particularly interested in, and throw the rest back. For fees of around £700 to £1000, depending on the module, students can join in with other participants in the Institute's main postgraduate programmes. The courses run for about three weeks each. They are on the evolution of modern industrial society and its archaeology (which started on 15 January), analysing historic buildings and landscapes (starting 1 October), the management of heritage resources (starting 8 October), the archaeology of the industrial revolution, and marketing the heritage (both starting 12 November).

IA MEETS IFA

This year's conference of the Institute of Field Archaeologists in Birmingham, on 23-5 April 1990, will include a substantial session on Industrial Archaeology for the first time. A whole day session is being given over to industrial archaeology on 24 April, in parallel with other sessions. The main themes will be the differences between industrial archaeology and traditional archaeological disciplines, new fields of enquiry in the subject, and the nature of industrial archaeology as a period study. Separate groups of papers during the day will be on industrial archaeological sites and their relation to surrounding landscapes, the scope of industrial archaeology, and industrial archaeology as a resource. Speakers will include Marilyn Palmer, Kate Clarke, Stephen Hughes, Adam Sharp, Jonathan Drake, Mark Watson and David Higgins. The keynote to the session will be given by Neil Cossons, who is also giving a keynote address to the IFA conference as a whole. Other sessions during the conference will include the subjects of recording standing buildings, site evaluation, presenting the past, dating methods and scientific archaeology. Details are available from the Assistant Secretary, Institute of Field Archaeologists, Minerals Engineering Building, University of Birmingham, PO Box 363, Birmingham B15 2TT (021 471 2788).

LONDON'S CHUNNEL MANIA

Whilst the construction and finance of the Channel Tunnel itself is currently running into difficulties, problems of uncertainty are also apparent in redevelopment proposals to meet the new needs of the tunnel in London. Moves and countermoves over the location of terminals and the choice of routes continue, and many of these have implications for the capital's industrial archaeology.

The oldest part of Waterloo Station (platforms 16-21, Windsor lines), dating from a rebuild in 1885, is being transformed into a multi-storey terminal for the Tunnel and will handle traffic as soon as trains from the Continent start to run. These will reach Waterloo over surface lines via Brixton. One consequence will be the removal of the interesting hydraulic lift which raises carriages from the Waterloo and City underground railway line when they need to go away for repair. A deep-level car park will be constructed beneath the new Channel Tunnel terminal and eventually it will be possible to run carriages into this to be taken away by road on



Hydraulic railway carriage lift, Waterloo R J M Carr

low loaders. The lift, which incorporates a large hydraulic jigger, is due to be removed by early 1990. It dates from about 1989 when the Waterloo and City line was opened.

Second thoughts about the King's Cross redevelopment could mean railway lands at Stratford in East London being used instead for a Channel Tunnel terminal: the North London line would likely be used for access. The great expense of the proposed 15 kilometre long tunnel from King's Cross through difficult ground beneath South East London to Mottingham SE9 is enough to produce cold feet. However, for the original construction of the Great Northern Railway northwards from King's Cross, some of the land required was owned by St Bartholomew's Hospital. The hospital gave up what was needed for railway building on condition that when no longer required for railway use it would revert back. This is an additional difficulty for the King's Cross redevelopment scheme. It is understood the hospital will require a large sum of money to allow non-railway use.

If the long tunnel for Channel Tunnel trains from King's Cross to Mottingham is actually built, Bankside Power Station would make a good site for a working shaft or drift. Some of the walls could be retained to hide the unsightliness of the proceedings and spoil could be sent away by barge. Bankside only generated electricity from 1963 to 1981. However the power station, like Battersea, was designed by no less than Sir Giles Gilbert Scott OM, and in the words of Gavin Stamp is 'the Ultimate Temple of Power'. The Thirties Society are dismayed that it has not been possible to list Bankside. The former Financial Times building, Bracken House, is cited as an example of a recent building of comparable merit which does have such protection (see *The Independent* 11 October 1989).

R J M Carr

ENGINE FOR ADOPTION

Have you ever wanted your own stationary steam engine? The Bristol Waterworks Company is disposing of one of its engines, and is going to some trouble in order to find it a good home. Unfortunately, no-one has yet expressed an interest in taking the engine and it may have to go for scrap.

The engine is a 300 hp Lilleshall Company triple expansion engine. It and the building which houses it were constructed in 1924 at the Bristol Waterworks Company's Chelvey Treatment Works, near Backwell, Bristol. The engine is severely corroded but intact with auxiliary plant such as barring engine, feed pumps, dc

generator and large dc overhead crane still installed as it last steamed in 1956. The Company already preserves two beam engines at its Blagdon Pumping Station and intends to renovate a Hathorn Davey triple expansion engine at Victoria Pumping Station. The preservation of the Lilleshall engine is therefore not considered by the Company to be justifiable. Removal and rebuilding elsewhere would be viable and the company would give the engine away if a satisfactory proposal was made. By the time this notice is read, a home may have been found for the engine. If not, help is needed urgently, and serious candidates to remove the engine should make contact immediately by telephoning Mr R.J. Horn, Bristol Waterworks Company, PO Box 218, Bridgwater Road, Bristol, BS99 7AU (0272 665881).

FIELDWORK AWARDS FOR 1989

The presentation of last year's main fieldwork award of £100 was made by the Association's retiring President, Dr Marilyn Palmer, to Gary Marshall and James Walker at the Association's annual dinner in Huddersfield on 16 September 1989. The award was given for their survey of over seventy industrial archaeological sites located in the grounds of the National Trust property at Calke Abbey in Derbyshire. Much has been written in the national press about this magpie's nest of aristocratic treasures but such were merely the icing on the cake of the wealth-generating complex of brickfields, brickworks, limestone quarries, limekilns, and early horse-drawn railways that intersected the polite parklands. In this study documentary and archaeological work were combined to produce worthwhile interpretive results.

The labour of love undertaken by Michael Taylor in his outstanding drawings of Newmills Watermill on Black Isle, Ross-shire, was also recognised by the presentation of a new prize for initiative of £25 and a certificate.

Please send entries of work including any element of fieldwork for this year's awards to Stephen Hughes, RCAHM Wales, Edleston House, Queen's Road, Aberystwyth, Dyfed, SY23 2HP (0970 624381) by 16 March 1990.

DOROTHEA AWARDS

The AIA's annual conservation awards, funded by Dorothea Restorations, has been given for 1989 to the Staffordshire Narrow Gauge Railway Society for restoration work on the locomotive 'Isabel'. Built in 1897, 'Isabel' is the oldest example of the 7" class of locomotives constructed in Stafford by W.G. Bagnall Ltd. After a fifty-year working life at Cliffe Hill Quarries in Leicestershire, she returned to Stafford as a static memorial to the company, first in the works yard, and then outside Stafford station. In 1987 the Staffordshire Narrow Gauge Railway Society began to restore the locomotive to the 1897 working design. Hours of research have established a detailed history of the engine, and new work has patiently been recorded using photographs, drawings and video.

Chief Engineer of the project, Allen Civil, and Assistant Engineer, Roger Greatrex, were presented with the award plaque and a cheque for £600 at the AIA's annual conference dinner in September. Chairman of the judges, John Crompton, said that the standard of all the 1989 entries had been very high, but this was 'a truly excellent project, carried out with great care and dedication, and with a strong sense

of responsibility to the town of Stafford.' Two other projects received commendations from the judges, marked by certificates and cheques for £150 each. The Lowestoft-based Excelsior Trust has restored a rare steam winch, which is now in use on board the sail training vessel 'Excelsior'. The Tracked Armour Group of Airedale in Makerfield, Lancashire, has rescued a restored a forty-ton Churchill tank for the Armoured Corps Tank Museum at Bovington. The Dorothea Award is presented annually to unpaid groups or individuals for high standards of conservation. The closing date for entries for the 1990 awards is 31 May.

For further details and entry forms contact John Crompton, 112 Milton Road, Fallings Park, Wolverhampton, WV10 0ND.

BULLETINS A GO GO!

As a special offer, limited numbers of back issues of the AIA **Bulletin** are being offered for sale for the first time-ever! This could provide readers with the opportunity to fill gaps in their collection or to catch up on the wealth of intelligence about industrial archaeology that they have contained over the years. The back

issues are being sold in complete volumes for 99p plus 60p postage and packing and are available from the Assistant Secretary, Association for Industrial Archaeology, The Wharfage, Ironbridge, Telford, Shropshire, TF8 7AW. The volumes available are 1-11, 13 and 15. Single issues from any volume can also be supplied (although a few can now only be provided as photocopies) for 50p each plus 25p postage and packing. This offer will only be continued for a short time. Remaining stocks are low.

PORTS IN A STORM

Ports, like many magnificent and extensive monuments to the industrial era, suffer from great threats of destruction. However since the 1970s, following pioneering schemes in San Francisco and Boston, Bristol and London, they have been increasingly successful in attracting sensitive redevelopment programmes capable of returning prosperity without destroying their sense of place or their archaeological integrity. For these schemes to be truly successful in an archaeological and historical context, however, there still remain important problems to tackle; particularly as dockland development reaches

a peak of fashion. Barely any port in the country is likely to escape the oncoming storm of redevelopment.

In order to help to formulate answers to some of the problems bound to arise, the AIA is organising a seminar in conjunction with the National Museums and Galleries on Merseyside. This will take place on 1 and 2 June 1990. The conference will be modelled on the highly successful conference organised by the AIA last year on the subject of metalliferous mining (see **Bulletin** 16.4). It will bring together architects, planners, historians, developers and archaeologists concerned with the future of docklands. The aim of the conference is to establish the significance of Britain's port and dock structures as historical documents, and to discuss the feasibility of re-using docklands as a resource where industry, commerce and community can develop.

Full details can be obtained from Adrian Jarvis, Ports Survey, Liverpool Museum, William Brown Street, Liverpool, L3 8EN (051 207 0001).

REGIONAL NEWS

YORKSHIRE AND HUMBERSIDE

Leeds Development Corporation is going out to public consultation about plans to turn **Leeds canal basin** into 'the Camden Lock of the North', with shops, offices, markets and space for public events. The former granary would become a restaurant and museum, but some of the other workshops and warehouses would be demolished. The Corporation had also agreed to partially fund a study by English Heritage of the future of the Grade II+ listed **Hunslet Mill**. A listed tannery in Meanwood Road, Leeds, the **Sugarwell Works**, is to be converted to offices by developers, Alpha Estates.

The **National Fishing Heritage Centre** at Alexandra Dock, Grimsby, will be built around three themes: a journey on a fishing boat c1960, music and reminiscences of fishermen, and a display of crafts and other objects of interest.

Whilst Sharrow Snuff Mill in Sheffield is preparing for another 250 years of water power (**Bulletin** 17.1) Sheffield's other snuff mill, **Westbrook Mill** or Top Mill in Sharrow, ceased production on 1 October. Its owners, J. & H. Wilson, were set up after a quarrel in the Sharrow Snuff Mill family, but were latterly an Imperial Tobacco subsidiary. The 1830s mill building, with a simple pedimented facade, survives among later additions, and includes an unusual first floor stove room with a semi-circular barrel vault. It is likely to be converted to offices.

Some of the 'little mesters' of Sheffield's cutlery industry worked in domestic workshops, usually in the gardens behind houses. Latterly, most were in purely industrial premises, and few domestic workshops survive. A group of three workshops behind houses in **Broomspring Lane** is believed to be the last in use, with cutler Ivy James working there. It was threatened by a proposal to build flats on the site, but one of the workshops has been spot-listed and the development proposal has been withdrawn. The last remaining cutlery and silverware workshops in Sheffield city centre are being converted to shops and offices under the pressure of the city's commercial revival. Cutlery manufacturers Walter Trickett Ltd moved out of their listed **Anglo Works** in

Trippet Lane last summer, and it is to become offices, with some demolition, despite proposals to keep it as a cutlers' works and tourist attraction. **Leah's Yard** off Cambridge Street, also listed and producing stampings for silverware until recently, is (according to a local paper) 'awaiting the architect's magic wand' which will turn it into craft shops and it seem likely destroy its industrial character.

A more welcome conversion is turning **Aizlewood's Corn Mill** in Nursery Street, Sheffield, into 57 workshops. The mill is a listed six-story steam mill of 1861, which closed in 1984 and had become derelict. The conversion is being carried out by Sheffield Co-operative Development Group, and more than half the £2 million cost is being met by the European Regional Development Fund and English Heritage. In an unusual example of re-use, a 200 ft concrete chimney of the 1940s at **Wincobank**, Sheffield, has been bought by Cellnet as a transmission base. **Derek Bayliss**

EAST MIDLANDS

In Leicester, British Rail Property Board are offering the **Humberstone Road Station** for sale for just £1; the catch is that it has to be dismantled and rebuilt on a suitable site following spot-listing in October. The station was built in 1875 by the Midland Railway, only half a mile north of the main station, in an endeavour to generate suburban traffic in the newly developing Humberstone suburb. Long since closed, the elegant single storey block has many possible uses. The extensive area of coal sidings and turntables adjacent has been cleared and redeveloped for warehousing. Other unlisted railway structures in Leicester are in danger at the former **Great Central goods yard** on Bede Island. A comprehensive redevelopment scheme is proposed requiring clearance of office block, warehouses and power house built around 1900. The site is a Mecca for railway enthusiasts with the Vic Berry graveyard for locomotives and rolling stock stacked five cars high. Leicestershire Industrial History Society is keeping a watching brief on the proposals.

The Nottinghamshire Building Preservation Trust is negotiating the purchase of the **Bestwood Colliery** steam winder, now in the care of the Leen Valley Country Park. The twin

cylinder vertical winding engine, built in 1873 by Coupe's Worsley Mesnes Ironworks at Wigan, has been the subject of previous abortive preservation schemes. The Trust is also carrying out a feasibility study into a re-use for the Cattle Market Tavern in Mansfield. This building was spot-listed in 1988, and was designed by Watson Fothergill, the Nottingham architect responsible for many fine buildings in that city.

Papplewick Pumping Station has launched an appeal for £250,000 for a new visitors' centre, based on a 'buy a brick' scheme. The former Nottingham Corporation works possesses the last working pair of James Watt rotative beam engines to be built, and the ornate interior decoration of the house and engines is a fine example of Victorian municipal grandeur. **Peter Neaverson**

GREATER LONDON

Lack of financial confidence in recent months is diminishing many threats to items of industrial archaeological interest. The proposals for the redevelopment of the **New River Reservoir** area in Stoke Newington for housing on the site of the filter beds and West Reservoir are probably being shelved for the time being as the property market is in a depressed state. It remains to be seen if new ideas will be put forward.

Fairfield Works, Bow, in East London, the former Bryant and May match factory renamed Bow Quarter was being converted for domestic purposes (**Bulletin** 16.2). However the developers, Kentish Homes, also responsible for the **Burrell's Wharf** redevelopment in Docklands, ran into financial difficulties and work ceased with roof trusses exposed to the sky.

With buildings unroofed in winter, water is unlikely to be kept out and demolition will be inevitable. For listed buildings local authorities have powers to step in and make roofs weathertight. At least let us hope the London Borough of Tower Hamlets ensures that listed buildings at Burrell's Wharf (the launching site of Brunel's Great Eastern) do not go the way of 'C' Warehouses at St Katharine's, demolished in 1981. At **Battersea Power Station** rebuilding work has all but ceased with the building gutted and essentially only three walls and the chimneys standing. Plans for conversion to a theme park and leisure complex have been in doubt. **continued over**

February 19 1990

DISTURBING BODIES

The Ironbridge Lecture, by Professor Brian Morris on museums in the 1990s. It will be at the University of Birmingham in the early evening. Details from the Administrator, the Ironbridge Institute, Ironbridge Gorge Museum, Ironbridge, Telford, Shropshire, TF8 7AW (095245 2751).

March 10 1990

SERIAC 1990 CONFERENCE

On military engineering in the nineteenth century, at the Royal School of Military Engineering Study Centre, Gillingham. Topics will include concrete, ship-sheds and military railways, with site visits on the following day. Details from Medway IA Group, Old Brook Pumping Station, Solomons Road, Chatham, Kent, ME4 4AJ.

March 14 1990

CULTURE, HERITAGE, THE ARTS AND TOURISM

A seminar on the growth of cultural tourism in Britain, at the University of Birmingham. Details obtainable as for 19 February above.

March 16 1990

AIA FIELDWORK AWARDS

Closing date for entries for 1990. See AIA News in this issue for details.

March 30-April 1 1990

AIA WORKING WEEKEND

at Ironbridge, on the subjects of recording methodology, the use of computers by local societies, and public enquiries on industrial sites. Details from Pamela Moore, 20 Stourvale Gardens, Chandlers Ford, Hampshire, SO5 3NE.

April 6-8 1990

COMPUTING FOR LOCAL AND REGIONAL HISTORY

organised by the Association for History and Computing UK Branch at Wolverhampton Polytechnic. Details from Angela Brown, School of Humanities and Cultural Studies, Wolverhampton Polytechnic, Castle View, Dudley DY1 3HR (0902 313001 extension 2333)

April 23-25 1990

INSTITUTE OF FIELD ARCHAEOLOGISTS

at Birmingham, including a full day session on

industrial archaeology. See News in this issue for further information.

May 1 1990

PORT BOOKS

a seminar on the value of Port Books as an historical source, based at Wolverhampton Polytechnic and the Ironbridge Institute. Details obtainable as for 19 February.

May 2-3 1990

MANAGING CHANGE IN THE COUNTRYSIDE

a course on rural resource management, including archaeology and tourism, at Ironbridge. Details obtainable as for 19 February.

May 14 1990

BUILDING INTERPRETATION FOR MUSEUMS

a course on methods for interpreting buildings to the public, based at Ironbridge. Details obtainable as for 19 February.

May 17 1990

LEGISLATION FOR CONSERVATION

a course on topical issues affecting building conservation in urban and industrial areas, at Ironbridge. Details obtainable as for 19 February.

May 26-29 1990

EUROPEAN CONFERENCE ON HERITAGE TOURISM

In Canterbury, organised by ICOMOS on the subject of damage to the heritage by tourism and methods of control. Details from Jane Fawcett, ICOMOS UK, 10 Barley Mow Passage, Chiswick, London W4 4PH.

May 31 1990

Closing date for AIA Dorothea Conservation Awards, see AIA News in this issue for details.

May 31 - June 3 1990

SOCIETY FOR INDUSTRIAL ARCHAEOLOGY

19th Annual Conference, Philadelphia, USA. Details from Sally Elk or Carmen Weber, Philadelphia Historical Commission, 1313 City Hall Annex, Philadelphia, PA 19197, USA (215 686 4543).

June 1-2 1990

THE PORTS CONFERENCE

organised by AIA and the National Museums and Galleries on Merseyside, details from Adrian Jarvis, Ports Survey, Liverpool Museum, William Brown Street, Liverpool, L3 8EN (051 207 0001). See AIA News in this issue for further information.

June 13 1990

MANAGING TOURISTS AND VISITORS MORE EFFICIENTLY

a seminar at the University of Birmingham. Details obtainable as for 19 February. June 14 1990 Training Staff for Visitors at Heritage Attractions, a seminar at Ironbridge. Details obtainable as for 19 February.

June 14 1990

TRAINING STAFF FOR VISITORS AT HERITAGE ATTRACTIONS

a seminar at Ironbridge. Details obtainable as for 19 February.

June 16-23 1990

TOUR OF INDUSTRIAL ARCHAEOLOGY IN BELGIUM

being organised for members of the Southampton University IA Group. An invitation to join this visit is extended to all members of AIA. Details were enclosed with the November 1989 mailing.

September 7-9 1990

AIA ANNUAL CONFERENCE

at Guildford in Surrey. The additional programme continues until 13 September. Details are enclosed with this mailing.

October 19 1990

INDUSTRIAL HERITAGE LAW AND ITS LIMITATIONS

a seminar at Ironbridge. Details obtainable as for 19 February.

November 13 1990

ULTIMATE MUSEUM EXPERIENCE

a seminar on the problems of operating complex and dramatic industrial processes in museums, based at Ironbridge and Blists Hill wrought iron works. Details obtainable as for 19 February

September 13-15 1991

AIA ANNUAL CONFERENCE

with a pre-conference programme from 10 September, in the Black Country.

Information should be sent to the Editor as soon as it is available. Dates of mailing and last dates for receipt of copy are given on the back page. Items will normally appear in successive issues between notification and the date of the event.

AIA Bulletin

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Edited from the School of Humanities and Cultural Studies, Wolverhampton Polytechnic, Castle View, Dudley, West Midlands, DY1 3HR, and published by the Association for Industrial Archaeology. Contributions should be sent to the Editor. Local news and press releases should be sent to the AIA Regional Correspondents listed in alternate issues. Final copy dates currently are as follows:

- 15 March for June mailing
- 15 June for August mailing
- 15 September for November mailing
- 15 December for February 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 and research 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. Further details may be obtained from the Membership Secretary, Association for Industrial Archaeology, The Wharfage, Ironbridge, Telford, Shropshire, TF8 7AW, England. 095245 3522.

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

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From 1837 to 1844 **London and Birmingham Railway** trains from Euston were drawn up Camden Bank by cable. Two 60 hp stationary steam engines by Maudsley Son and Field were installed underneath the railway just to the North of the Regent's Canal. One lithograph by J.C. Bourne dated April 1837 shows the building of the engine accommodation, and another depicts the completed line with the chimneys on each side. When cable haulage was dispensed with the winding engines went to a Russian flax mill but the chamber they occupied is still there. Being a short walk along the canal towpath from trendy Camden Lock, this cavern has recently been considered for conversion to a wine bar!

The Brunels' **Thames tunnel** from Rotherhithe to Wapping is likely to come into increased railway use. Completed in 1842 after considerable difficulties as a tunnel for pedestrians, the money for the planned access for wheeled road vehicles not being forthcoming, it was converted for rail. Trains ran from the south to Wapping from 1869, using a connecting tunnel driven through the wet river gravels by Sir John

Hawkshaw. An even greater task was the construction of the line northwards through similar strata beneath the Eastern Basin of the London Docks to connect with the Great Eastern Railway at **Shoreditch**. This was done, with minimum inconvenience to the dock above, by the same engineer, and the through route was completed in 1876.

It is planned to construct a new linking line northwards from Shoreditch to connect with the southern end of the former North London Railway viaduct which ran from Broad Street to Dalston Junction. There would be a new interchange station with London Underground Ltd's Central Line at Bishopsgate. The construction of Broadgate (Bulletin 16.2) has meant the abandonment of a considerable length of railway viaduct with small businesses still being carried on in the railway arches beneath. The intention is also to extend the present train service, through the Brunel tunnel to New Cross, further into south east London using existing lines.

R J M Carr