

## FACING UP TO THE PRESENT

In late Spring 1991 the manufacture of compound fertilizer will cease at ICI Billingham after almost seventy years. With it will go parts Teesside's industrial landscape, possibly including the 'Nitram tower', in which nitrate of ammonia is granulated on the same principle as a lead shot tower. This raises the question of how well traditional industrial archaeology is fitted to record and document 'modern' industries, and the often very rapid changes in technology, design and landscape which they bring about.

The Government bought the Billingham site in 1917 on the advice of the chemical firm Brunner Mond, to build a munitions factory which in peacetime would make fertilizer. Munitions were never produced there, and in 1920 the Government sold the site—two farms, some huts and land—plus relevant patents, to Brunner's.

Ammonia was first produced on site late in 1923, based on the synthesis of nitrogen, steam and water gas by the Haber Process, pioneered in Germany before the war, and obtained by Brunner's after the war by blatant espionage! From an early date 'waste' gases were re-used in other processes, and the factory expanded rapidly and became increasingly integrated. It also introduced to the area new demands in high quality engineering able to withstand the high pressures required in synthesis—250 atmospheres by the 1930s—and the need for new skilled process workers.

In 1926 Brunner Mond became part of Imperial Chemical Industries. By 1929, Billingham employed over 7,000 people and produced 134,000 tons of ammonia, and 456,000 tons of its sulphate. Anhydrite, an essential raw product, was being mined from under the site, and the Company had built 2,000 houses for its workforce. The Wall Street crash of the same year caused the collapse of the fertilizer market, and Billingham was forced to diversify, to oil from coal, and a new plastic, Resin X, or Perspex, both invented and developed on site. Caustic soda and cyanide were also produced, and workers with their families moved *en masse* from out-dated works in Glasgow and Tyneside.

The Billingham site still occupies a vast area, although now with large gaps. Its workforce is only 4,000, from a peak of about 19,000 in the early 1960s. A number of structures survive from the 1920s, such as cooling towers and the huge concrete and steel parabolic silos built to match the shape taken naturally by piles of sulphate or nitrate granules. In some cases they survive because they are too close to existing plant to be demolishable; others may go soon.

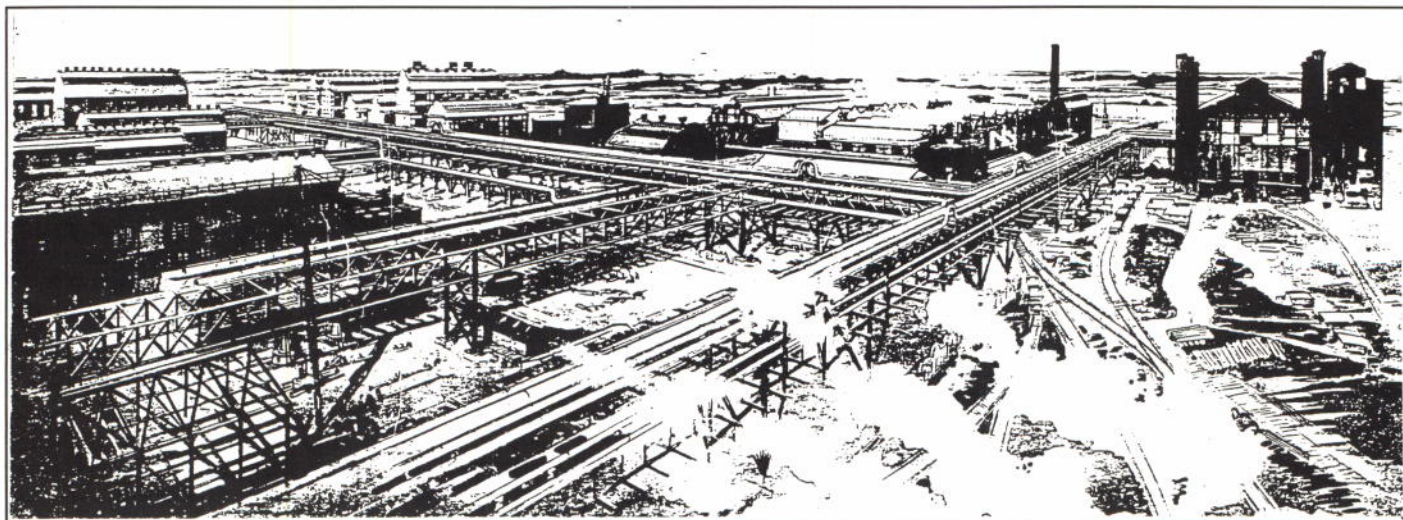
There may be a good aesthetic and architectural argument to have a silo listed, but sadly not a practical one. ICI clearly is not in the position or of the mind to conserve its past in this particular way. Billingham is still developing—as compound fertilizer making ends, the new Monomer 8 plant, at the forefront of chemical technology, is being erected. To its

credit, staff are at last collating the fine collection of photographs of the works dating from the 1910s to the 1990s, and adding to the collection daily, and an archivist works on the site.

What industrial archaeology can do in such a case is uncertain. The company understandably is cautious of people photographing the site because of the terrorist risk. It is also hard to conceive a practical scheme whereby even part of the site could be conserved. A pumping engine, headstock or water mill is compact, largely safe (no potentially disastrous leaks of ammonia there), and transformed by time and our own conventions into being worthy of our nostalgic and emotional attention.

But such sites, like our time, are finite. We are lumbered with the self-proclaimed title of industrial archaeologists, though we do little to record current industrial practice. It is quite wrong to assume that modern-day industries are bound to be recorded somewhere or other. As in the past, the most familiar is often the least documented. Future generations, interested in our non-glamorous industries, will be denied the detailed account of, say, late twentieth-century chemical manufacture that we would love to have for eighteenth-century iron-making. We are lucky at Billingham that the company is doing some recording, but industrial archaeologists can not easily be involved.

If even a site so central to twentieth-century industrial history as this might disappear with little attention from industrial archaeology, and no attempt at conservation, what will be the



'A Portion of the Billingham Works of the Synthetic Ammonia and Nitrates Ltd., Stockton-on-Tees' from a drawing by Keesey, 1927

fate of our computer factories, our photo labs, our power stations? How many of our industries are being recorded seriously?

If we do not take a more expansive view of industrial archaeology, we may restrict it to a set number of restored or gloriously derelict sites. We may also restrict future interest in the discipline, and thereby support for the sites which do interest us. Could industrial archaeology become just one further passing phase of the fashion for nostalgia, which held sway for

two decades but which will surely soon go out of vogue?  
**Mark Rowland-Jones**

*A few industrial archaeologists and organisations, most notably perhaps the Royal Commission on Ancient Monuments in Scotland, have already been involved with recording the less-appreciated of contemporary industries—but interest in such subjects is far from widespread and certainly does not match the rates of loss. London's power stations, dis-*

*cussed by Bob Carr in this issue, raise similar problems. However, real hope of more attention for the chemical industries in the near future is provided by the formation of the AIA Chemical Industry Interest Group, reported below.*

*The Editor would welcome further discussion of the importance and problems of recording and conservation in similar industries, or, alternatively, of the arguments for concentrating scarce resources wholly on more conventionally appreciated subjects.*

## LOSING LONDON'S POWER STATIONS

Deptford East power station, constructed in the 1950s, is shortly due for demolition. Proposals for the area drawn up by architects Sheppard Robson and chartered surveyors Grimley J R Eve include 33,000 square metres of class B1 business space, 600 residential units, a 150 room hotel, a 2,250 square metre retail store and perhaps berthing arrangements for passenger ships. That so much new property can occupy the site of just one power station illustrates the enormous pressures for rapid redevelopment at London's power stations. In addition a leisure facility is proposed on land reclaimed from the Thames, which might be a museum based on a maritime theme. Greenwich Reach Redevelopment, a collaboration between ARC Properties and Arena Industries would be a £175 million project on a site covering four hectares.

The Deptford East station had seven coal-fired chain-grate boilers delivering steam at 62 bar, 482 degrees centigrade, to three 55-MW Metropolitan Vickers turbines. In the basement it was claimed some of the pumps were second hand from the PLUTO (pipe line under the ocean) project. Just to the south of Deptford East power station is the site of the world's first central power station, built for the London Electric Supply Corporation by Sebastian de Ferranti in 1889. Power was supplied to central London at 10,000 volts AC, 83 Hz (hint - divide 5,000 by 60). In the south wall of the

present East station red painted arches from Ferranti's pioneer building can still clearly be seen.

At the site of Croydon B power station, built a little before Deptford East, there were plans for a £300 million retail and leisure complex by the Carroll Group of companies. Ideas were to retain the two 300-foot high chimneys as a landmark and the boiler house was to become a 600-foot long shopping mall. In the adjacent turbine hall the single span roof would accommodate 200 speciality shops. The complete scheme would have provided 673,000 square feet of floor space. Other notions included a 200 bedroom hotel and a bus and coach station.

However, despite these plans to re-use the Croydon B power station main building, it was demolished at short notice before English Heritage had time to pay a visit (see *The Daily Telegraph* 2 February 1991) and the site is now to be used by an IKEA furniture store. In late February only the chimneys and east wall of the power station remained, with considerable metal wreckage to the west. SAVE and the Thirties Society had campaigned to have the building listed.

Croydon B power station had eight Simon Carves pulverised fuel coal-fired boilers delivering steam at 41 bar, 454 degrees centigrade, to four Metropolitan Vickers turbo-generators which produced 52.5 MW each at 12 kilovolts. There were also gas turbine generating sets for

rapid increases in output. The building was steel framed, faced with good quality brickwork, and the roofs were of steel lattice-girder construction. Particular care was taken by the architect, Robert Atkinson, to ensure that the external appearance of the station was appropriate for the surrounding, partly residential area. For instance, on delivery coal was dropped into a pit beneath the station and carried to the top via internal bucket lifts instead of the usual external conveyors. Coal arrived by rail and the power station had its own fleet of steam and diesel shunting locomotives.

Acton Lane power station in Harlesden is likely to suffer a fate

similar to other London stations. It was one of the last CEBG stations to retain steam railway locomotives to handle incoming coal trains. The last two locomotives were both outside-cylinder 0-4-0 saddle tanks: *Little Barford* was built in 1939 by Andrew Barclay's Caledonia Works, Kilmarnock (no 2069), and *ED3 Birkenhead* was built by Robert Stephenson and Hawthorns Ltd in 1948 at their Newcastle upon Tyne works (no 7386). The name *Little Barford* originated from the power station of that name in Bedfordshire. The locomotive is now preserved at the Foxfield Light Railway, near Stoke-on-Trent. *ED3 Birkenhead* is at Southall motive power depot just to the south east of the station.

CEBG Acton Lane was built just after Deptford East. In the power station itself seven chain-grate coal-fired boilers supplied steam at 41 bar, 454 degrees centigrade, to five 31-MW Richardson Westgarth turbines. The generating sets were commissioned from 1954 to 1958. The turbine hall has a precast ferro-concrete frame rather than one of steel, which was expensive at the time of construction due to shortages. Like Croydon B, Acton Lane had cooling towers, unnecessary at the Thames-side sites. The latter had the additional advantage of direct delivery of seaborne coal.

The first generating station at Acton Lane, Willesden power station, was built for the Metropolitan Electric Supply Company in 1899 on a nine acre site. Part of this original site is incorporated in the present 16 acre power station site. At first, three vertical compound marine-type steam engines drove directly the two-phase 1.5-MW alternators, producing electricity at 500 volts, 60 Hz. Ownership was transferred to the London Power Company in 1927 and following installation of new plant the final capacity of the station was 155 MW by the time of closure in 1964.

At Battersea things seem still to be dragging on, but outline approval for redevelopment on sites near the power station has been granted (see *The Evening Standard*, 30 July 1990). In recent years only the B station at Battersea has been generating. From 1954, six pulverised fuel coal-fired boilers supplied steam at either 41 bar, 427 degrees centigrade, or 93 bar, 510 degrees centigrade, to four Metropolitan Vickers turbines or a 6-MW Richardson Westgarth turbine. The Metropolitan Vickers turbines had powers of 1.35 MW (two), 60 MW and 100 MW. The magnificent Egyptianesque A station control room at Battersea is reported to be safely secure, at least for the time being.

Power stations of the type described above, built from around the end of World War II, supplied 33 kV for local use and during peak periods 132 kV to the National Grid. The mixture of sizes and manufacturers for plant in London power stations of this period is reminiscent of British Railways' dieselisation programme.  
**R J M Carr**



## DISCOVERING THE LION SALT WORKS

Continuing examination of the Lion Salt Works site over the last twelve months as part of the project for the restoration of the works has discovered new documents relating the story its former activity. An office letters book was found on a beam in the blacksmith's shed. The book lists all correspondence to and from the works from July to November 1911. Also from the smithy, the remains of a diary dated 1896 gives names of narrow boats delivering coal to the Thompson's Sunbeam Works at Wincham.

From the attic of the small manager's office, two bundles of papers are now being studied. The first contained invoices for goods supplied to the works in 1910, the second letters sent from the Thompsons' Liverpool office between 1905 and 1908. The letters when

studied in association with the surviving account ledgers, deeds and correspondence will provide a detailed analysis of the trading practices of a small family salt business.

Between 1914 and 1918 salt was shipped to over seventy railway stations as far afield as Glasgow, Aberystwyth, Grimsby and Bristol. During the same period the pattern of coal supply became increasingly varied, and numerous collieries provided fuel for the furnaces.

The accounts and letters refer to 91 named narrow boats shipping salt, coal and other commodities to and from the works. They provide a great deal of information about the distribution of salt from the works to Liverpool and Manchester via the Anderton Boat Lift.

Overseas exports included shipments to Guatemala, Africa and Noumea, French Cale-

donia. Metal stencils for labelling salt sacks to these destinations were found in the smithy.

On the practical front work has been carried out on the horizontal steam engine which drove the brine pump. It is hoped to repair the piston later in the year, and to power it by compressed air. Research into the engine is continuing as it does not have a manufacturer's name cast into the base plate. Servicing and parts are known to have been supplied by the firm Marcus Allan of Manchester in 1910.

Upon the formation of the Lion Salt Works Trust a development plan for the restoration of the works will be published. In the meantime a small exhibition has been produced for on-site description and interpretation. Visitors to the site will see the first stages of a unique project.

*Andrew Fielding, Project Officer, Lion Salt Works*

## AIA NEWS

### NEW MEMBERS OF AIA

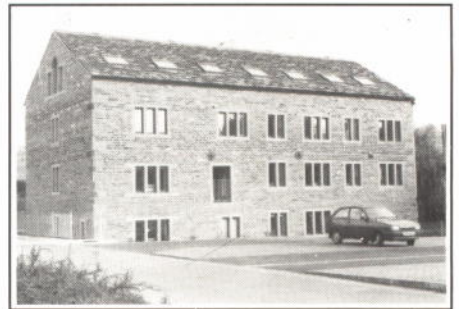
Since January 1991

Mr Henry Gunston, Wantage Oxon.  
Mr & Mrs B F Hood, Englefield Green, Surrey.  
Dr D C Hunter, Pyrford, Surrey.  
Mrs Lorna Couchman, Basingstoke, Hampshire.  
Mr A J Stoyel, Faringdon, Oxon.  
Miriam Stead, Sevenoaks, Kent.  
Royal Commission for Historic Monuments, Exeter.  
Dallas C Wood, Hamilton Museum of Steam, Ontario  
Dr D Chapman, Wirral, Merseyside.  
Mr M R Wilson, Bexleyheath, Kent.  
SWETS, Pietermaritzburgh, South Africa.  
Mr Edward Tiller, Fordingbridge, Hampshire.  
Dr Keith Budd, Menston, Ilkley.  
Mr H A Hall, Trowbridge, Wiltshire.  
Mr K V Mercer, London.  
Ms Clare Hartwell, London.  
Ms Kate Clarke, Much Wenlock, Shropshire.  
Mr C J McFee, Oxford.  
Mr D J Turner, York.  
Mr N J Cochrane, Crawley, West Sussex.  
Mr Andrew Pye, Exeter, Devon.  
Miss J K Moss, Stapleton, Bristol.  
Dr Colin Rynne, Cork, Eire.

### CONFERENCE CONVERSION

AIA members who attended the 1989 AIA Annual Conference in West Yorkshire will remember the warehouse on the Ramsden's Canal that they saw every time they hopped on or off a coach at the conference venue, Huddersfield Polytechnic. The Aspley Basin canal warehouse, built in 1780, has now been converted into flats, and photographs of them have been sent to the *Bulletin* by Bob Cooper.

The warehouse was in an extremely dangerous state at the time of the conference and looked as though it might not survive a hard winter. However work on conversion started soon after the conference. It is well worth comparing the appearance of the building now with how it looked before conversion (pictured on page 21 of the West Yorkshire conference guide). It can be argued that some of the character of the building has unnecessarily been lost, for example by inserting concrete and steel balconies at the loading doors instead of wooden ones like the originals, by running drainpipes down the decorative quoins at the corners of the building, and by inserting more new windows than were strictly necessary. Nevertheless, it is satisfying to see that the building has been saved in some form, when it would otherwise almost certainly have disappeared. Perhaps we can also learn from consecutive examples, and one day historic buildings will be converted to new uses whilst losing as little of their character as possible.



A Giant felled: Croydon B Power Station during demolition in February 1991 - see opposite Photo: R J M Carr

### CHEMICAL INDUSTRY GROUP

David Tomlin and Patrick Graham are keen to revive the AIA's Chemical Industry Group after a lapse of several years. They hope there are sufficient people interested in the history and industrial archaeology of the chemical industry to support a small informal group. Membership will be open to all whether or not they belong to the AIA.

The Group is expected to operate mainly by the distribution of communications and documents to group members together with the holding of formal meetings where and when it is practical. It is intended to hold an informal meeting during the AIA Annual Conference this year at Dudley. There will not be a fixed subscription, but members will be expected to defray postage and reprographic costs which arise. Anyone interested in the Group should contact David Tomlin, 36 Redcar Road East, South Bank, Middlesbrough, Cleveland, TS6 6YP or Patrick Graham, Flat 16, 66 Shepherds Hill, London N6 5RN ☎081 348 3212.