

INDUSTRIAL ARCHAEOLOGY NEWS

99
WINTER
1996

THE BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

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AIA

INDUSTRIAL ARCHAEOLOGY NEWS 99 Winter 1996

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COVER PICTURE

Dorothea Quarry's impressive engine house with its Cornish pumping engine which worked from 1906 until the 1950s. Visited by the AIA Conference in 1996.

Poland 1996

Roger Ford

This year's highly successful AIA visit to Poland, on 14-26 July, attracted a full entry with every coach seat taken.

After embussing in London, overnight was spent on the Harwich-Hamburg ferry – this was superb, with outstandingly good food and accommodation. This was followed by six glorious sunny hours on Monday morning sailing up the Elbe between Cuxhaven and Hamburg docks. Along the banks were numerous navigation aids, such as lighthouses and towers, particularly around the entry to the Kiel Canal, while modern industries included a nuclear power station and aluminium works.

From Hamburg, where more participants joined the coach, we diverted from the drive to Berlin to see our first IA sites at Lauenburg on the Elbe. There was the opportunity to visit the museum of river shipping, containing excellent models and steam-ship engines in the basement. We then took refreshments beside the oldest canal lock in Europe which, in its present rebuilt form, dates from 1724 but was originally a flash lock. The canal was cut in the 1390s to carry salt between the Elbe and Lübeck. Chief guide Ray Riley reinforced the party at our Berlin hotel. As a much-appreciated bonus, the coach took us on a two-hour after-dinner tour around the city.

On Tuesday morning we walked across the bridge over the Oder into Poland, between Frankfurt and Slubice, where we could buy Polish slotys. Next stop was at Trzciel on the River Obra, the pre-war Polish border where we savoured our first packed lunches (we had them every day) of the tour. The sight of three preserved windmills at the roadside prompted a stop. These were 19th-century post mills on trestles, fully enclosed by long skirts, and had been moved to this site at **Dzieskanowice** to form part of a folk park. On to **Ciechocinek** where the party was completed by the Malaws family and principal interpreter Anna Niznik. This is where the three salt graduation towers, slides of which were shown at last year's conference, are located. These were massive timber structures 15m high and varying in

length from 724m to 366m, the brine originally being pumped up to them by windmills. Unusually, an industrial monument had become the centre of a spa development, since breathing the iodine-rich fumes from the graduation towers had medicinal value. The saltworks itself – to which the brine is pumped after concentration in the brushwood towers – adjoined the hotel, enabling guests to glimpse the black smoke emitted from the coal-fired furnaces which heated the evaporation tanks.

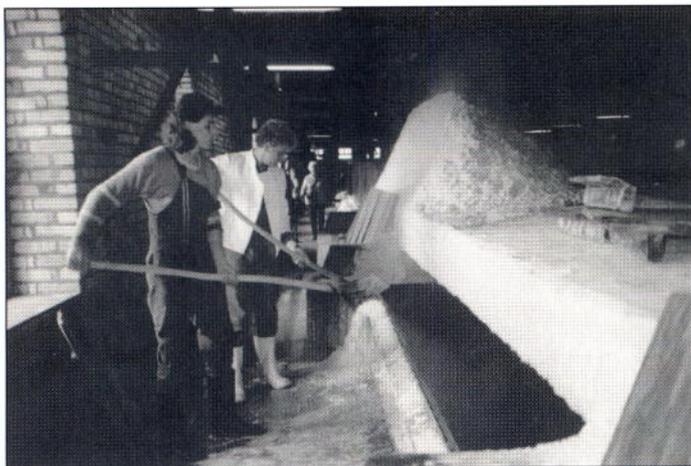
After a tour of the towers and the works, on to **Bydgoszcz** to admire the station and visit three roundhouses (the other side of the tracks!) where a number of decrepit locos, many of them steam, are parked. We soon discovered that there are 'steamers' parked all over the Polish railway system, as the companies don't ever seem to scrap anything – just shunt them onto 'dead' sidings and forget about them. A metre-gauge former tram depot also received a visit. After lunch we went to a narrow-gauge railway depot at **Znin**, part of the state system, but now run as a preserved line. Over 1,000 km of narrow-gauge lines are still in use in Poland out of the original network of over 4,000 km, which was constructed to link towns and industrial enterprises to the strategic main line system. In **Znin**, the narrow gauge system served a sugar beet mill which still contained its own roundhouse. There were extensive marshalling yards beside the standard-gauge main line, for transhipment purposes. The preserved line runs from **Znin** to **Wenecja**, and after the last train returned they kindly dragged out, by diesel, a steam loco that is still usable. Oily rags were lit in the firebox for photographic effect. The terminus at **Wenecja** is a narrow-gauge railway museum, with a wide selection of locos, early diesels, waggons, mail coaches etc. The museum also had refreshment stalls outside – we found this to be unusual in Poland. Our final railway stop of the day was at **Inowroclaw**, with a fine station, roundhouse and more preserved locos as well as a massive soda works.

After a second night in the Ciechocinek hotel, it was time to pay the bills – this might have been easy, except that the hotel possesses a computer – this is capable of producing the bill for a single meal in 7-10 minutes! Every item (bread, butter, jam, coffee etc)



Anna Niznik interpreting for the AIA; Ray Riley (L) listens in

Photo: Marilyn Palmer



Workers shovelling salt from steaming supersaturated brine at Ciechocinek

Photo: Anne Alderton



How to carry standard gauge wagons on narrow gauge ones – it's all explained at the Rogow railway depot

Photo: Anne Alderton

must be listed and costed separately, as apparently there are widely different rates of VAT on, say tea, and bread. It took about 5 hours to collect the cash from all the party on the evening before departure, whilst negotiations for paying for the rooms and the packed lunches caused Thursday's departure to be three-quarters of an hour late.

Our first destination was an enormous derelict twelve-kiln pottery at **Wloclawek** which closed in 1990. Part of the site is being turned into a museum but many of the structures have been vandalised since closure.

Next stop was **Wyszogrod** Bridge over the Vistula, a remarkable survival which at two kilometres is the longest wooden bridge in Europe and was visually striking because of the sheet metal cladding over the wooden cut-waters. It was also interesting to see the continued use of the old techniques of laying reed matting to prevent scouring of the river bed by the piers on the downstream side. From there we drove to **Warsaw** and our first visit was the gasworks museum, housed in one of the buildings on a vast site which features two enormous Prussian-designed brick-built gasholder houses, necessary to prevent the water-seals inside from freezing in the extreme winter temperatures. The works date from 1882, but had been substantially rebuilt after the last war and closed since 1972. The museum contained rotary purifiers and steam-driven exhausters as well as various other equipment. So into Warsaw itself, where an interesting incident occurred. The coach pulled off the road on to the river bank so that we could look at a bridge across the Vistula. Immediately two police appeared from a patrol launch on the river to admonish the driver for parking on a cycle track! We passed the night in a hotel thoughtfully located above the busiest tram crossing in Europe, thereby ensuring that sleep was almost impossible!

Morning saw the coach visiting the English-designed Warsaw water pumping station and works of 1886, then on to the Railway Museum at the former terminus of the line from Vienna. Those not wishing to avail themselves of these delights toured the old city (faithfully rebuilt after being completely razed by the Nazis, and now designated as a World Heritage Site), using the very cheap (25p for two hours' travel) and comprehensive tram network. After the various factions were reunited, visits were made to other stations on the Warsaw-Vienna main line (1845), en

route to **Rogow** narrow-gauge freight depot. Here was seen the curious custom of loading standard gauge freight trucks onto narrow-gauge flat wagons for onward transmission, this being possible because the narrow gauge line has no overbridges. We managed to see a Hoffman kiln being coal fed at **Stryków** brickworks on our way to **Lódz**, where we enjoyed the best hotel of the tour.

Having endured two days of more-or-less heavy rain, it was nice to have some dry weather to look at textile mills and industrial housing in **Lódz**, formerly in the Russian sector of Poland and selected by the Russian government as a textile centre. By the late 19th century, the textile industry dominated the town which became known as the Polish Manchester. Ray and Anna, who teach at the university in **Lódz**, have made a special study of these mills and we were shown their special characteristics such as stuccoed brick, decorative lift towers and clerestory windows. Many were financed by Prussian capital and the owners did not stint themselves with their palatial residences, which contrasted with the rather grim workers' housing adjacent.

In the afternoon the first venue was **Chocianowice** tram-shed on the outskirts of the city where a line of old four-wheel cars are parked on a siding. Our next stop was at **Srock** to visit a rather



Derelict post mill of 1892 at Srock

Photo: Mark Watson

derelict post mill, which we were able to scramble around. From **Piotrków Trybunalski** on the Warsaw-Vienna line, we passed the station with another huge water tower which supplied the town as well, and then followed a narrow gauge railway to **Sulejow**. Here there were two remarkable conical limekilns with connected concrete lift shafts, abandoned in the mid-1980s. From there we went to look at a modern, working limekiln with a skip elevator charging system similar to that used in a blast-furnace.

Saturday night was spent at an hotel adapted from a monastery at Sulejow, with the merit of being in a peaceful situation. Sunday morning saw us at **Maleniec** Forge, the Polish equivalent of Abbeydale or Wortley (featured in last year's conference). The forge dates from 1784 and has two huge waterwheels, on different axes. It worked until 1967, and is now maintained by staff and students of the Silesian Polytechnic.

Lunchbreak passed at **Rudniki**, where there was another collection of seven derelict limekilns of various designs beside a main line railway. Two conical kilns survived and the base of a third had been re-used as a support for an aerial ropeway terminal for charging a more modern kiln. There were also four hexagonal kilns with forced draught. These kilns resembled those used for chalk burning seen at the Surrey conference in 1990, and the site would merit further investigation, and add to the existing typologies of limekilns. After this, we went to **Czestochowa**, a place of pilgrimage for Catholics, who come to the ornate cathedral to view the portrait of the Black Madonna, credited with miraculous healing powers. We were able to join a huge congregation for the closing stages of a very fervent Sunday service.

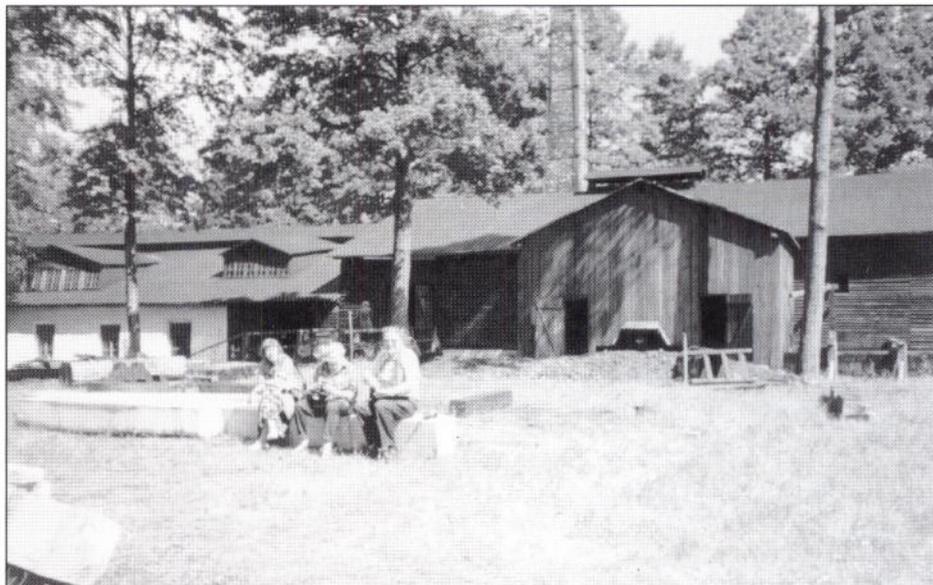
Back to IA at **Poreba** to see a surviving blast furnace charging tower, dating from 1798 and in the process of becoming a small museum. At the **Tarnowskie Gory** mine museum we inspected a varied collection of steam-driven artefacts parked around the grounds, ranging from mine-winders to a vertical-boilered crane. In the main building, a wedding reception was in progress, and when we left the bride and groom ceremoniously presented us with a bottle of special wedding vodka!

So to **Katowice**, the heart of the Silesian mining district. Monday morning was devoted to coal mines and industrial housing, starting at the Michal and Siemanowice complex of five shafts. This is on a care-

and-maintenance only basis, but we were able to see the 1913 preserved electrically-powered compressor and a 1900 twin cylinder steam winder brought in from the Ficus mine. Many of the other buildings were being demolished, but some fine head gears remained. At Welnowiec are the pithead buildings of the former Alfred mine, converted in the 1930s into housing of very poor quality which contrasted with the much better apartment complex at Nikiszowiec. This was financed by Prussian capital and included a large church, shops, bath house (for women) and a laundry. The adjacent Pulaski mine had architect-designed buildings of 1903-1911, in which we saw a working electric Koepe winder and generator house.

The final visit of the day was a very exciting one to the non-ferrous metalworks at **Szopienice**, of which nothing similar survives in Britain. The retiring director of the works treated the party to soft drinks and nibbles in the boardroom whilst a company promotional film was shown. The works coal-smelted copper, zinc, silver and lead until 1970, when the pollution forced changes. On site stands an incredible 1908 zinc smelting shed containing horizontal fireclay retorts heated by coal gas. After much persuasion we were allowed to photograph the interior of this amazing relic, but not the exterior. We then viewed the zinc rolling mills, powered by a line of five German-built steam engines from the Edwardian era but on this occasion persuasion failed for the photographers desperate to record this unique scene. This was one of the many occasions when it was difficult to convince our Polish hosts that what they regarded as old-fashioned technology was seen by us as an outstanding example of industrial heritage. In spite of this, they proudly showed us their company museum!

On Tuesday we went to another zinc rolling mill at **Swietochowice**, opened in 1858, and still working. Here were casting tables and reheat furnaces of



Rare sunshine at Maleniec Forge

Photo: Roger Ford

considerable vintage, and again steam engines provided most of the power. [latest news: these steam engines have since stopped, due to the rising cost of coal; some equipment continues to be operated by electrical power] Because the works was closed for the summer holiday, we were able to wander and photograph at will. Of particular interest was the coal-fired boiler house which also provides domestic hot water for nearby apartment blocks – a fairly common situation in Poland, which explains all the networks of huge insulated pipes running about the district. From there we had photo-stops at the working Pokoj blast-furnace at **Ruda Slaska**, while at **Ruda-Wirek** we saw a small water tower with a wooden-clad tank, and a huge brick building, which formerly protected the headstock of the Andrej mine from the weather. These structures were fairly common in Germany and known as Malakoff towers.

The main visit of the afternoon was the Krolowa Luiza mine at **Zabrze**, which closed in 1993 but has become a working museum. After watching a working steam-powered Koepe winder, and looking at man-riders with pantograph, all adjourned to underground galleries to see electric coal-cutters at work, doing rotary cutting, long-wall cutting, shearers-loading, etc. This is a very exciting museum development which we hope will succeed. On to **Gliwice**, where the foundry still used for casting metal sculptures occupies the site of the first successful coke-fired blast furnace on the continent, designed by the Scot John Baildon. A small museum displays some of the castings made here, varying from enormous statues through

decorative ironwork to more fanciful artwork. The ribs of a cast-iron bridge, made here in 1806, can be seen, together with the pattern shop whose galleried structure resembled the Leiston Long Shop in Suffolk. The last site to be inspected was the 1935 wooden radio mast, 110 m high, where German troops, dressed as Polish soldiers 'attacked' the German guards, providing the excuse for the invasion of Poland that triggered World War II. Until recently this structure was considered to be 'secret'!

From Gliwice we drove to our last Polish hotel, at **Wroclaw** (formerly Breslau) with its splendid Gothic railway station and fine town centre. Next morning we went back to Frankfurt-an-der-Oder (passing many new copper mines), returning to the same hotel in Berlin for the night. On Thursday we returned to Hamburg for the ferry, but had two hours for a quick view of the city with its fine docks and warehouses. We arrived in London the next day.

It had been a fascinating though exhausting trip, the two best days for IA probably being those around Katowice at Szopienice and Zabrze. Best features were the food, which was excellent throughout (though the packed lunches did get a touch monotonous), and the company. Worst were the weather (we even crossed back into Germany in a violent thunderstorm), with only two completely dry days, and the Polish hotel rooms (except Łódź), which were mostly scruffy, and usually hideously noisy as well – trams start running at 4.30am.

Our thanks go to organisers Paul Saulter, Ray Riley and particularly to Anna Niznik, who had the impossible task of trying to translate not only flowery speeches of welcome, but also highly technical descriptions of archaic processes. One amusing sideline was that the Poles deduced from his title that Squadron Leader Alan Birt was the group's political advisor. They thought we were attempting to disguise his presence by listing everyone in alphabetical order, instead of putting him at the top! However I can confirm that this man has political clout – on our return to Harwich one word from him sufficed to pass the entire coach and contents through customs and immigration in about 20 seconds flat!



The Pokoj blast furnace at Ruda Slaska

Photo: Roger Ford

Bangor Conference 1996

Henry Gunston

The 1996 AIA Conference was held over the weekend of 6-8 September with an accompanying programme during the following week. It was based at the University of Wales, Bangor, formerly the University College of North Wales. Our principal lecture theatre was linked to the distinguished main building of 1911, which dominates the city from its ridge high above. The more recent Neuadd (Hall of Residence) John Morris-Jones provided accommodation, meals, and rooms for displays and smaller lectures. The host organisation was the Gwynedd Industrial History Society (Cymdeithas Hanes Diwydiannol Gwynedd) and conference organisation was led by Dr Dafydd Gwyn, Director of the Gwynedd Archaeological Trust, and David Alderton.

Following last year's success, a pre-conference seminar was held on the Friday, and this will be reported in the next *IA News*. The main conference opened on the Friday evening when, after a greeting in English from our President, Hilary Malaws, we were welcomed in Welsh by Dafydd Gwyn, a proper reminder that the industrial culture of North West Wales has always been bilingual. Dafydd then gave a polished overview of the industrial archaeology of the area, as summarised in the excellent Conference Guide, of which he was co-author. Both copper mining and slate quarrying expanded from the late 18th century. The copper boom was short, but slate production rose rapidly to a peak in the 1870s. The demand for improved transport between Dublin and London resulted in the rise of Holyhead and the impressive road and rail bridges at Conwy and Menai. Water was always an important energy source – the organ at the Jerusalem chapel, Bethesda, was once blown with aid of a Pelton wheel. However, whilst aluminium was produced using hydroelectricity at Dolgarrog, the more recent smelter by Holyhead uses electricity from the Wylfa nuclear station. Proceedings ended with John Crompton's thoughts on the

archaeology of communication towers, followed by Pamela and Laurence Draper talking on milk churn stands (see their article in *IA News* 98).

Saturday morning began with Merfyn Williams, Director of the Campaign for the Preservation of Rural Wales and co-author of the conference guide, exploring the social archaeology of the slate industry. Nonconformity, which provided a particular focus for Welsh language and culture, expanded in parallel with slate production. Within the predominantly local, Welsh speaking workforce a man in a quite junior position at the quarry could, as a chapel elder, be a major power in the local community. Michael Lewis then illustrated 25 years of fieldwork at slate industry sites by I A Summer Schools based on Plas Tan y Bwlch, the Snowdonia National Park Study Centre. In this period, 46 quarry sites were recorded and the results published or sent to appropriate archives. He also paid tribute to the recording of the Welsh language history of slate working by members of Fforwm Plas Tan y Bwlch. As a photographer with the Royal Commission in Wales, Chris Musson showed how aerial photography aids I A recording, stressing how well aerial views record industrial landscapes. Mary Mills introduced us to the activities in London of members of the Hills family, whose also ran a chemical works at Amlwch. Finally, John Crompton pondered over gun barrels, from early mortars modelled on portly dogs to recent Iraqi supergun thinking.

The afternoon's visit programme was so extensive that only the briefest outline can be given here. Special thanks go to the all the enthusiastic visit guides, and to those who provided me with notes for this report. Four groups set out, one going to Llandudno to catch a Great Orme tram where they learnt of its history and working, and visited the Halfway station power station from which cables operate the separate upper and lower sections. Nearby were the Great Orme copper mines, where a walk through Bronze Age workings gave a fascinating

feel of how mining was in a pre-mechanical age. A second party visited the Penrhyn Estate, east of Bangor, calling at Port Penrhyn, coastal terminus of the former quarry railway, before comparing accommodation at Penrhyn Castle with worker's housing in the nearby 'model village' of Llandygai. Others visited the Welsh Slate Museum, based on the engineering workshops of the Dinorwic quarry at Llanberis, where a 50 ft diameter water wheel by de Winton still turns. At the rebuilt Menai Strait Britannia rail bridge, the group saw a preserved section of the original tubular structure. Meanwhile, an intrepid group climbed high into the Dinorwic quarries to the Australia level, where disused slate-working machinery lingers on, abandoned as inaccessible by scrap men. The Conference Dinner was a most enjoyable social gathering, held in Neuadd Reichel, a foursquare neo-Georgian university hall of 1942. Dinner was preceded by a sherry reception kindly provided by the Royal Commission in Wales.

Sunday brought the AGM and the Presentation of the Recording Awards (reported elsewhere). The 1996 Rolt Lecture 'Bryn Tail, Bryn Mawr and beyond: industrial archaeology in Wales' was delivered by Peter White, Secretary to the Royal Commission on the Ancient and Historical Monuments of Wales. Peter reminded us that Bryn Tail mine was the first industrial guardianship monument in Wales, even before England. His broad ranging review included the important work by the National Museum of Wales in the 1960s and the parts currently being played by national bodies and individual restoration groups.

This ended the official conference proceedings but many delegates stayed to enjoy the additional programme. After lunch, one party went to Dyffryn Nantlle, where the blondin cableways over great pits of the Pen yr Orsedd quarry and the Cornish engine of 1904 at Dorothea were highlights of a most evocative walk amongst slate industry relics. Others visited forested sites in the Gwydyr lead mining field, including Hafna mill, where a flotation process was used from 1907 to cope with the sulphide ore. In the evening Andy Lewis told us the fascinating story of the opening up of the Bronze Age copper mines on



This curious building at Port Penrhyn housed a 12-seater latrine, one of the delights viewed by delegates at the Bangor Conference

Photo: Peter Stanier



An attentive party above the mill at the Hafna lead mine

Photo: Michael Harrison



Tom Rolt spotted: steam locomotive Tom Rolt on the Talylyn Railway

Photo: Marilyn Palmer

the Great Orme and Ray Riley took us on an illustrated tour of Polish IA. In thanks for her major contribution to the success of the AIA Polish visit earlier in the year, Anna Niznik received flowers from Marilyn Palmer.

Monday's visit started on the 'prom' at Llandudno, learning how the Mostyn family had developed the resort, before an informative guided town walk. Dylan Thomas' Organ Morgan would have relished the chapel parking space marked 'Reserved for the use of the organist at all times'. The Great Orme tramway and copper mines were then visited (see Saturday). We saw Deganwy Wharf, a largely unsuccessful development to export slate via the LNWR branch from Blaenau Ffestiniog, and a guided visit to Telford's Conwy road bridge was followed by a fine boat trip which allowed all three bridges to be checked out from river level. Peter Crew, Snowdonia National Park archaeologist, gave the evening lecture on excavation and restoration of industrial monuments within the park, and we saw a range of projects, including the Ynys y Pandy slate mill and the fine restoration work on the water wheel complex at the Cwm Ciprith copper mine.

On Tuesday we rode south through varied landscapes to Tywyn, where some toured the Pendre Workshops of the Talylyn Railway, whilst others visited the Wharf Station and Narrow Gauge Railway Museum. A departing train was appropriately headed by No. 7 Tom Rolt. At Barmouth rail bridge there were those who checked out the structure and those who sped across the footway and back in time for lunch at Penmaenpool, with its interesting wooden toll bridge, dating in part from 1879. We then went to the Glasdir copper mine, where the complex flotation plant site has been cleared within the surrounding forest. In the evening John Bate of the Talylyn Railway outlined its history from the earliest days of Tom Rolt's involvement in the context of narrow gauge railway restoration in the area.

Blaenau Ffestiniog was the destination on Wednesday, reached after the spectacular journey from Porthmadog on the Ffestiniog Railway. Three parties then went different ways, one to the Moelwyn

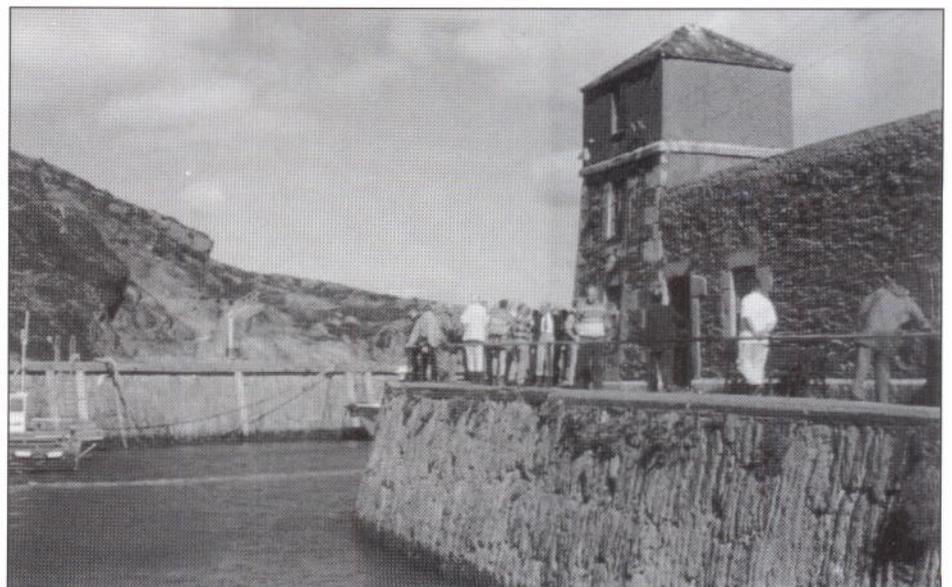
fulling mill, in process of restoration, and then to Falcon Hildred's fascinating studio-cum-museum in Pant yr Ynn mill, which once produced cloth which was fullled at Moelwyn. Merfyn Williams then reviewed the history of Blaenau, looking down from the top of a slate tip. Another group visited the enormous caverns of Maenofferen slate quarry, parts of which are still operational, and saw early d.c. electrical equipment still in use, including liquid brine rheostats. The third group climbed high to the Rhosydd slate mine, where inclines and the remains of buildings were explored, followed by an underground walk through a tramway adit and a long slog down to the minibus, passing the present active workings. All groups then converged on the Pant yr Afon hydroelectric power house, close to the tunnel mouth of the LNWR branch at Blaenau. This well-kept combination of Pelton wheels and d.c. generators, built to provide power to the Llechwydd quarry, can still operate when required. In the evening, Peredur

Hughes, former manager of the Pen yr Orsedd quarry, showed an interesting collection of old slate industry films which have been transferred to video.

Anglesey was the theme for Thursday, travelling first to the great Myndd Parys copper mine, a stunning, barren site with opencast pits, tips and precipitation pans of lurid sulphurous colours. We then heard how Amlwch harbour had grown to handle the booming copper trade. After lunch, the choice was between Melin Llynnon, a fine restored (and operating) windmill, and the spectacular remains of Porthwen brickworks by the shore. The reunited party then went to the Holyhead Breakwater Country Park where we learnt how stone was quarried for the great breakwater. There was no formal evening activity.

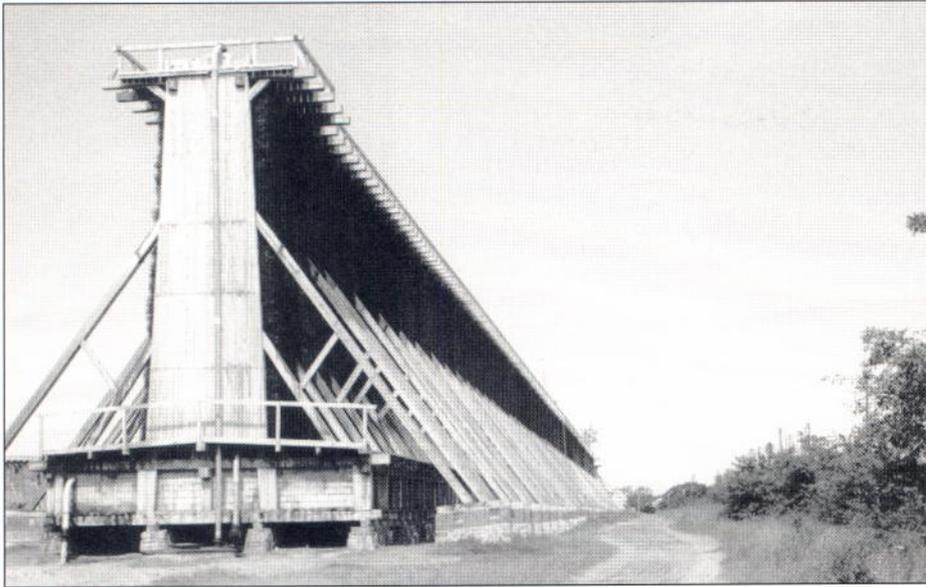
Friday, the last day, offered a choice between two major quarries, Penrhyn and Penmaenmawr. After viewing the site of Coed y Parc workshops, the Penrhyn party saw the headgear of the 'Sebastapol' water balance shaft before looking across the great pit of the quarry, to the sound of tipped waste rattling down a long slope. Then to Bethesda, where the Jerusalem chapel had been specially opened for us. A climb up winding John Street brought us to spectacular views across to the quarry and up the Ogwen valley. Meanwhile, at Penmaenmawr, the group climbed high to see a panorama which included Holyhead Mountain and Moel Famau. Housing, old tools and equipment and relics of the 3 ft gauge rail system were seen and discussed, and the group learnt why and how production had changed from stone setts to crushed stone.

Local quarrymen contributed from their wages towards the building of the University College of North Wales. They would surely be pleased at how successfully Dafydd Wynn and all his enthusiastic helpers sustained, throughout our stay, the informed debate and breadth of vision which were such an important part of life within a quarrymen's *caban*. Thanks also to Tony and Mary Yoward for handling our bookings and, above all, to our indefatigable Chapel Secretary, David Alderton, in whose charge not even the most wayward participant could get lost on a Sunday School outing.



The AIA visits Amlwch harbour and its watchtower, Anglesey

Photo: Michael Harrison



Four images of Polish industrial archaeology captured on the AIA's recent tour

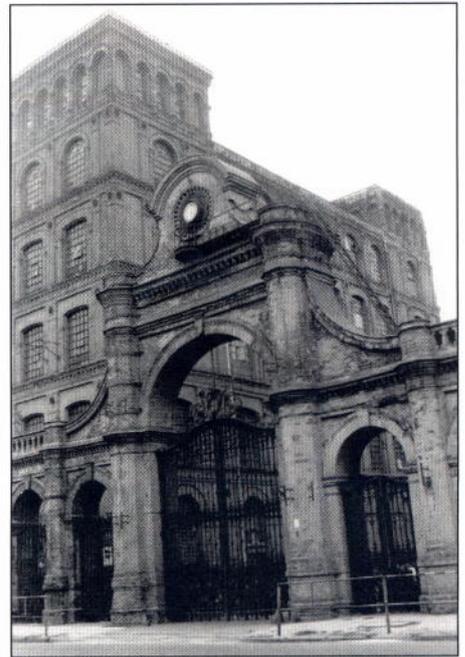
Photos: Marilyn Palmer

Salt gradation tower at Ciechocinek (above)

A view of Warsaw gasworks, with its enclosed gasholders to the rear (right)

One of two conical limekilns with its concrete lift shaft at Sulejow. This was at work until the 1980s (below)

Cathedral proportions for the gateway and Poznanski cotton spinning mill (1877-92) at Łódź (below right)



AGM: a brief report

The 1996 AGM was held at Bangor on 8 September. The recent deaths of Jean Gimpel, Charles Hadfield, Bill Thompson and Walter Minchinton were acknowledged with a minute's silence. The Treasurer delivered his report in his usual style and his proposal to change the financial year as from January 1997 was formally approved. On Council, three vacancies were filled by Michael Coulter, David Cranstone and Paul Sillitoe. Messrs Carr, Harrison, Palmer, Powell, Stanier and Warburton were re-elected; Janet Atterbury has had to stand down. The Conference Secretary reported on a visit to Poland that was so popular that a return was a possibility. Arrangements were in hand for a four-day visit to Northern Ireland in 1997. Next year's conference in Newcastle upon Tyne was formally approved. Future conferences are planned for Exeter (1998), Kent (1999) and the Manchester region in 2000, to follow immediately after the TICCIH events. The next AGM will be on 7 September 1997 in Newcastle.

AIA Ironbridge Weekend

The location is fixed, the dates are fixed (4-6 April 1997) and the programme is coming together and will be published with a booking form in the February 1997 issue of *IA News*. Meantime, book the date in your diary.

The theme will be 'Problems Presented by the Preservation of Major Structures'. Negotiations are well in hand with speakers from English

Heritage, Historic Scotland and Cadw. Already confirmed is Harley Thomas, Conservation Officer with Shropshire County Council, speaking on the Snailbeach Mining Complex, and Shane Gould explaining the mysteries of PPG15 and 16. A visit to a local 'major structure' is in hand, meeting the owner on site to hear his views. As usual there will be space for short contributions from delegates, and we plan to have Saturday dinner at Blists Hill followed by some participative activity led by Messrs Warburton and Sissons.

Gordon Knowles

President's Award goes to Kelham Island

The Association's *President's Award* for 1995 goes to Kelham Island Industrial Museum in Sheffield. The Award is made to a site, visited by the Association during the year, with outstanding interpretation of its industrial heritage to the public. John Crompton, retiring President, made the presentation to the Museum Director, John Hamshere, in June.

In making the presentation, John Crompton paid tribute to the quality of exhibitions and information which explain and foster Sheffield's pride in its great contribution to the steel and cutlery industries. Kelham Island Museum has been through difficult times, but its rebirth under a Charitable Trust was already bringing new ideas and developments. In reply, John Hamshere spoke of the museum's



John Hamshere (L) receives the AIA President's Award from John Crompton

Photo: Carol Whittaker

pride at receiving the Award, and referred to the strong support from local industry and Sheffield Hallam University which was much valued. He was able to announce a second award, this time a grant which would finance an interactive exhibit designed to help very young children to understand the making of iron. Children will enter a 'ball-room' where the balls represent the earth's mineral elements, and enact the making of iron as they pass through a furnace; then they can be rolled into strip and forged under a steam hammer, both with foam-rubber 'tools'.

It sounds great fun – can AIA members join in?

IRIS news

It is encouraging news that IRIS recently impressed an inspector from the DNH, but it is with some regret that the AIA has not renewed the contract with Lancaster University, with effect from the end of September. This means we have lost Jane Robson, who has done superb work during her tenure as the IRIS Project Supervisor, and for this we give her our thanks. Neil Wright

LETTERS

Readers are encouraged to write to the Editor with their views on matters raised in IA News, the 'Comment' feature or other current issues.

It's a malthouse

In *IA News 98* I was pleased to note that British Waterways are not going to demolish their mass concrete warehouse at Newark. However, the true details of the building's origins were not included. According to the listing particulars, this Grade 2* building was constructed c.1857 for John Hole. Almost certainly he was part of the well-known family of Newark brewers. Their Castle Brewery still stands, although derelict, in the centre of town.

The mass concrete structure was built as a malthouse and used as such until after the Second World War. Until the fire, the malthouse was virtually unaltered, having lost only its kiln cowl and the free-standing fire baskets. It is

a three-storey building and had a multi-gabled slate roof. It was divided into two, a north and a south half, by a central mass concrete wall. Each half was a mirror image of the other with the kilns in the north or south west corners. Between each kiln and the central dividing wall was a steep. The first row of columns out from the steep was of couch columns. The growing (or working) floors were the bottom and top floors and were of quarry tiles. The middle floor was constructed of wooden boards and was for the storage of malt on the river side of the building, and barley on the western side. The kiln drying floor was of perforated ceramic tiles.

In case readers have not realised it, this is a typical Newark pattern of

malthouse (see my malthouse typology in *IA Review*, Spring 1996). The soaked malt from the steep was spread out to grow on the bottom floor and part way through the process it was moved to the top floor by hoist, the remains of which survived until the fire. The drying floor was on the same level as the top growing floor, so it was easy to move the green malt to the kiln.

The malt produced was used by Holes in their brewery. In the 1930s Hugh Bairds, Maltsters, took over the plant and operated it along with several others in the town, including the other mass concrete malting, built mid-1870s.

Amber Patrick, Cheltenham



The Newark kiln/warehouse in April 1989

Photo: A. Patrick



After the fire: interior of the second floor, January 1993

Photo: A. Patrick

The first conference held by the fledgling AIA was at the University of Keele in September 1974. This followed the pattern which had been established by the Bath Conferences in earlier years. Since then the only significant change to the pattern was made at Penzance, when for the first time an additional programme of visits followed the main conference. Although there have been exceptions, notably Penzance and Ironbridge, the great bulk of conferences have been based on university-style accommodation. The question is whether, after 23 conferences, it is time to change the pattern or style.

There has been an increasing tendency in recent years for some delegates to stay in nearby hotels with a higher standard of accommodation. At the other end of the scale, it has been argued that we should do more to help potential delegates who cannot afford even standard university accommodation – which it must be admitted has become increasingly pricey for the quality of accommodation and food offered. Conference does attract a significant proportion of the individual membership each year – about 20% – which can't be bad, and the introduction of the Friday seminar has significantly increased the number of attendees with a professional interest in the subject. However, there are times when it looks alarmingly like a Saga holiday group, and the administration of the conference and its visits has become increasingly complex and stressful for the volunteer organisers. This has been aggravated by one significant change: in the early days local groups or sometimes individuals volunteered to organise a conference in their area, something which rarely happens now. Instead, local organisers have to be found who may have no experience of AIA conferences, which can increase the problems.

Has Conference become too complex? Should we aim to simplify its pattern and organisation? Is it not time we seriously considered the purposes of holding conferences, and whether the pattern we have, popular as it may be, really fulfils these purposes? Is it necessary to be peripatetic? Should the field visits be completely separated from the actual conference and AGM, held perhaps at a different venue or time? Would it help if organisers became

COMMENT

more dogmatic about what was on offer, on an all or nothing basis? At present we allow considerable flexibility, though I never cease to be amazed at the way people still

ask for special arrangements or prices from an unpaid secretariat which they would never expect from a professional holiday organisation. Often there are good reasons for this, but it can be abused and invariably adds considerably to the workload. At Bangor, no two meals were eaten by the same number of people. More rigidity might make it necessary to ration places on a first come, first served basis.

Alternatively, we could organise conferences as they were at Penzance and Ironbridge, charging a basic fee and providing a meeting place, lectures and visits, but leaving all other arrangements to individuals to decide and make. The disadvantage with this is that when the first field weeks were run on this basis people didn't want to know. Numbers only picked up once the organisers started making arrangements. A third possibility is to add to a basic conference package an agreement with a hotel so there could be a standard extra charge to cover meals and accommodation, as is done by the SIA in America.

There is also the vexed question of the best time of the year, though enquiries some ten years ago suggested that the present date of early September was overall the most popular. Throughout this comment so far I have assumed that Conference should continue, but it could be argued that the Association might have more important activities to organise with its scarce and overstretched resources of volunteer labour.

So, what are your ideas and views, bearing in mind that continuing at present may not be an option? Can you suggest a completely new style of conference and conference activity – or just relatively minor modifications which might help? If you have any views on changes which should – or should not – be made, please let me have them before the end of the year. I will make sure they are considered by Council before final decisions are made.

David Alderton

takes over as a temporary liaison officer and will be handling all enquiries and correspondence. He can be contacted at Yarborough Lodge, 32 Yarborough Road, Lincoln LN1 1HS. ☎ 01522 526043.

Seminar postponed

Lack of sufficient response, due to the difficulties of attending an event at an unpopular time of year, has resulted in the postponement of the December seminar. Hopefully, it can be incorporated in the pre-conference seminar next September. Our thanks to a disappointed Victoria Beauchamp who has worked in organising the seminar, and to those who had applied to attend.

AIA Fieldwork and Recording Awards

This year once again saw a diversity in the subjects chosen by the entrants. These included site surveys such as Oxted Chalk Pits by Malcolm Tadd and Bersham Ironworks by Stephen Greuter. Landscape surveys such as the Blackdown Hills Airfield Survey of Dunkeswell and Upton by Paul

Frances and the Powys Metal Mines Ground Survey by Nigel Jones and Pat Frost. The two student entries were a survey of a water mill at Tarrant Keynton by G. Pugh and the Bristol aircraft industry by Steph Gillett.

The winners of the Main Award were Paul Sillitoe and Bill Klemperer for their work on James Brindley at Turnhurst Hall and their investigation of a garden feature that was possibly used by Brindley as an experimental section of canal. On the basis of oral and documentary evidence, an excavation was carried out to search for the model canal described in the *Staffordshire Times* in 1880. This began in 1993 with some support from British Waterways and the full backing of the city council and owners of the site who had planning permission to build a pub. Unfortunately, the archaeological evidence did not provide conclusive proof that the 'canal' was used as an experimental lock. The site has been backfilled and the pub constructed using piles to disturb the archaeology as little as possible. If the feature uncovered was not a lock, it was a rare example of an eighteenth-century garden feature. Copies of the report are available from the City Museum and Art Gallery at Stoke-on-Trent.

The Initiative Award went to Falcon Hildred for his guide to the Newport Transporter Bridge, designed to show an expert or amateur how the bridge had functioned using illustrations rather than words. Carried out before the bridge was restored, this was a timely piece of recording which also included some oral evidence from the bridge keeper. Copies are available from the author at Pant-yr-Ynn Mill, Blaenau Ffestiniog, Gwynedd LL41 3LZ at £12 plus P & P. All trade enquiries should be made to Newport Museum and Art Gallery, John Frost Square, Newport NP9 1PA.

The winner of the Student Award was Steph Gillett's entry which looked at sites occupied by British Aerospace Airbus Ltd and Rolls-Royce Military Engines either side of Filton airfield at Bristol. It used a combination of documentary evidence about the history of the site and some fieldwork, where it was permitted, to record the buildings.

The winners were invited to attend the conference dinner and the Awards were presented after the AGM at Bangor. The winners gave a short presentation about their work; unfortunately, Steph Gillett could not join us. I would like to thank fellow judges Amber Patrick, Shane Gould

and Keith Falconer. All entries for next year should be sent to Mrs V.A. Beauchamp, 3 Parsonage Court, Parsonage Crescent, Walkley S6 5BJ by 1 May 1997.

Victoria Beauchamp

New members

The Association welcomes the following new members:

John Barnatt, Buxton
Claes Breitholtz, Lund
Michael Coulter, Newtownards
Malcolm Eley, Duisburg
Ken Hamilton, Keighley
Martin Harrison-Putnam, Derby
David Hilton, Wigan
Dr L. G. Love, Huddersfield
Anna McEvoy, Marlow
W. John Smith, Manchester
Jo Stanley, London
James Staziker, Preston
Tim Tumberg, Houghton
W. P. Walters, Rickmansworth
C. J. Ward, Bromley
Paul Vigor, Lymington

The following institutions have also become subscribers:

BNF Dia Periodique Etrangers, Paris
Industrial Heritage Consultancy, Camborne

186 years to resolve water problem

A system of recycling water has at last solved the problem of inadequate water supply which has dogged the famous 29 locks at Caen Hill, Devizes, since opening in 1810. Now the longest flight of broad locks in the country can be passed seven days a week for the first time since its abandonment in 1951. A new pumping station at Lower Foxhangers houses two electric pumps capable of raising 5,000 gallons a minute to the top of the flight, 2¼ miles away. This equates to pumping a lock-full of water (55,000 gallons) every 11 minutes. After trials, the Caen Hill Backpumps were commissioned on 6 September by Sir Anthony Durant MP, President of the Kennet & Avon Canal Trust. The £1m scheme was managed by British Waterways and funded by the K & A Canal Trust and eight local authorities.



Thanks to recycling, there is now plenty of water available for the famous Caen Hill locks on the Kennet & Avon Canal

Photo: Peter Stanier

Ken Hawley Collection Trust

Ken Hawley is well known as the Hon Custodian of Wortley Top Forge in South Yorkshire. Before retiring, he owned a business in Sheffield selling hand tools, and over the last 40 years he has built up a unique and very large collection of historic hand tools. What makes it special is that it includes many examples of the tools that Sheffield craftsmen employed to make those tools, as well as catalogues, photographs and other items from the Sheffield edge tool and cutlery industry. Much came from firms that were

closing down, dropping old products or introducing new mechanised production methods. Ken himself has a fund of information and has been instrumental in making films and videos of craftsmen at work.

The Ruskin Gallery in Sheffield has drawn on the collection for exhibitions, the most recent being 'Sheffield Craftsmanship: decorating metal', from 21 September to 1 December 1996. The Gallery's collections are based on the works of art and other objects which John Ruskin gave to the St George's Museum that he set up in Walkley, Sheffield, in 1875. He intended

it for working men, to show them 'what is lovely in the life of nature, and heroic in the life of men,' and he chose Sheffield because he was impressed by the standards of craftsmanship in the city's metal working industries.

It has long been felt that a permanent home should be found for the Hawley collection and a Trust has been formed to raise funds and build an extension to the Gallery for permanent displays. A first contribution of £10,000 was made by the Guild of St George in September, but meanwhile the University of Sheffield is housing the collection in the Hawley

Building off Mappin Street, where it is being catalogued on an integrated database by staff and volunteers. An appeal has been launched for more tools and catalogues. The collection is available for research and visits can be arranged in advance. Questions about the collection and how it might help your research, should be addressed to Joan Unwin, Research Associate, Division of Adult Continuing Education, University of Sheffield, 196-8 West Street, Sheffield S1 4ET. (0114 276 2484.

Derek Bayliss

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Great day at Yarmouth

Over 30 delegates from the Norfolk, Suffolk and Cambridge IA Societies met at Great Yarmouth on 15 June for the East of England Regional IA Conference.

Charles Lewis, former Curator of the town's Maritime Museum, lectured on Great Yarmouth and the sea, while Colin Tooke talked on the industrial archaeology of holidays – a subject which he certainly showed to have much to interest the broad-minded industrial archaeologist.

After lunch we were given a tour of Geat Yarmouth's IA under the guidance of Peter Brown. Sites included the early nineteenth century Fish Curing House in Trinity Place, which contains a gutting room, brine tanks and smoke chambers. The Icehouse in Bridge Road, a restored building of the 1860s, stored ice for the fishing industry, at first collected from the Broads in winter, but later brought from Norway. Artificial ice made by refrigeration made the building redundant. Richards Shipyard occupied us for some time. Its many timber buildings and some old equipment provoked much discussion, but the most interesting was the dry-dock with its timber walls and floor! This was formerly known as Fellowes Shipyard and later as Everards.

Various bridges of widely differing construction pleased the many pontists among us. In addition, we saw the site of High Mill (1812-1906), said to be England's tallest mill at 122 feet (37 m); the town's first railway station, the Fishwharf – a covered fish market; the 1884 gasholder (not gasometer!); and the Beach Coach Station, formerly the Beach Station of the Midland & Great Northern Railway.

A drive along the Promenade revealed interesting buildings, including the Shipwrecked Sailors' Home – now Maritime Museum – of 1858, the Royalty Cinema (opened in 1876 as the Royal aquarium), and various piers and jetties. Sadly, we could not visit the steam drifter *Lydia Eva*, as she was delayed by repairs at Norwich. Instead, we visited the Amusement Park (!). Most of us rode on the Scenic Railway, built by Erich Heidrich in Hamburg for the Paris Exhibition of 1929. With track about a mile long, it was re-erected at Great Yarmouth for the 1932 season and is claimed to be one of the largest wooden structures in the country.

Peter Brown's excellent tour notes are to be published by the Great Yarmouth Borough Council for the benefit of holiday-makers. It was a

splendid day for which we are grateful to the lecturers, tour organiser and Brenda Taylor who directed the conference arrangements.

Alan Birt

Hallmark Award in Nottingham

The Otto and Langen Free Piston Atmospheric Gas Engine, patented in 1866, was the world's first commercially successful internal combustion engine. The oldest working example in the UK is owned by the Department of Mechanical Engineering at the University of Nottingham, to which it is believed to have been given in 1883; an enthusiastic Department has continued to maintain it in working order. On 10 July, the engine was awarded the Institution of Mechanical Engineers Engineering Heritage Hallmark Award in recognition of its historical significance as the forerunner of the modern internal combustion engine.

Great Northern vandalism

Despite the fact that part of the site was upgraded to two star, Environment Secretary John Gummer has given the go-ahead for the transformation of Manchester's Great Northern Warehouse. Disappointed conservationists had hoped the 'Great Northern Initiative' scheme would have gone to a public enquiry. Details of the proposals were described by Steve Stockey in *IA News 97*.

Liming in Devon

A recent workshop held at Tiverton on the Devon lime industry was received with enthusiasm and it is hoped this renewed interest will stimulate recording in the county. Details from John Leach, Curator, Tiverton Museum, St Andrew Street, Tiverton, Devon, EX16 6PH.

Grace and noise along the line

After years of debate and rumour about maintenance of the graceful Balcombe Viaduct in West Sussex, work has begun in repairing the crumbling masonry and brickwork. The viaduct, 1475 feet (500 m) long, was built in 1842 to carry the London to Brighton tracks across the River Ouse. This listed structure has 37 arches and 20 million bricks and was a triumph of Victorian engineering.

On the same line, the Tunnel Cottage over the castellated north entrance to the 2259-yards long Clayton Tunnel has been refurbished. It was built in 1836 as a wages centre for workers toiling to dig the tunnel and used as a home since 1841. This, hardly the quietest of retreats, is now available to rent, and Railtrack can be contacted for information.

Don Cox

Foyers centenary

British Aluminium Co's HEP plant at Foyers went into production on 15 June 1896, just 10 years since Frenchman Paul Heroult showed how aluminium oxide could be reduced electrolytically to molten metal. At the time of its development there were many objections on environmental grounds but local support (jobs!) won the day. Two lochs were turned into one and had a head of 360 feet (110 m) above the shore of Loch Ness. The pipeline bypassed the Falls of Foyers. Lord Kelvin, the company's scientific adviser, supported the project and designed some of the equipment, much of which was still in use when the plant closed in 1967. By 1897 one tenth of the world's aluminium was being produced at Foyers. In 1909, the much larger scheme at Kinlochleven was constructed.

Ten years on the right track

The Railway Heritage Trust have recently completed the ten year restoration of the exterior of St. Pancras station. They are concerned with the preservation of a vast railway heritage in England, Wales and Scotland. In 1995, this consisted of 1,383 Listed structures, 59 Ancient Monuments and

1,147 buildings in Conservation Areas; this represents a 90% increase since 1985. The Heritage Trust was founded in 1984 and its budget in 1994/5 included £1.8m from Railtrack and British Rail. Since 1985, grants totalling £12.5m, paying for between 10 and 40% of repair or restoration costs, have been awarded to 467 projects. These have included the restoration of stations at Bristol Temple Meads, Great Malvern, Bury St. Edmunds, Bridgwater, Beverley, Gobowen and Aylesford. Restoration works on the ventilation shafts at Kilsby tunnel and the Ribbleshead viaduct have also received funding. Long term programmes at Welwyn viaduct, Royal Border bridge at Berwick-upon-Tweed and Paddington station roof have also been funded. Three viaducts are to be handed over to trusts: Smardale Gill in Cumbria, Lambley in Northumberland and Bennerley on the Nottinghamshire-Derbyshire border.

Caledonian Canal

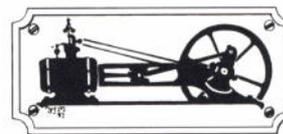
Problems with mortar in the lock walls of Telford's masterpiece, the Caledonian Canal, are so serious that British Waterways is seeking £20m for remedial work. The alternative is closure.

Birthday honour

Kenneth Hudson received an OBE for services to museums in the Queen's Birthday Honours in June this year.

Glasgow's Underground

The Glasgow Underground started regular operations of cable-hauled trains as the Glasgow District Subway on 21 January 1897, after a month's delay due to accidents caused through overcrowding at its original opening on



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12 Dec 1896. By then Glasgow had a network of suburban railways and long lengths of underground working by steam trains from Queen Street (since 1886) and Central Station. Competition from electric trams caused many of these routes to be closed to passenger traffic by the end of the first year. The long closed section between Kelvin

Bridge and Kirklea via Botanic Gardens, is likely to be in use by trams in 2001 if Glasgow's projected new service gets the go-ahead.

From 1843 to 1907 Glasgow had cable-hauled trains on the Cowairs (link) out of Queen Street station. Only on the subway was the cable continuously moving with the train

using a gripper to attach itself. The facade of the cable power station is now used as a second hand car dealers in Scotland Street, between West Street and Shields Road Station.

The underground line was electrified in 1935 and the system modernised in 1980. At present the line carries 14 million passengers a year,

one sixth of all rail passengers in Scotland, though a very much smaller fraction of passenger miles.

The transport museum in the Kelvin Hall houses a permanent exhibition about the subway and an original underground car (No. 55) has been under restoration in time for the centenary.

OBITUARY

Charles Hadfield 1909-1996

I met Charles Hadfield on his own doorstep when I was twelve. I had just joined a new canal preservation society in South Wales, and with precocious fanaticism decided to collect all the old photographs of the canal that I could find. Visiting London, I traced the address of the man who had written *The Canals of South Wales and the Border*, and I went straight round and knocked on his door. A tall, congenial man answered. Gently hiding any amusement, he invited me in, gave me a cup of coffee, and talked for an hour or more. Then, taking a bundle of precious photographs from a filing cabinet, he gave me more than I could have dreamed. He said simply, 'Take these away to be copied, but just be sure to bring them back.'

I repeat this story to illustrate the kindness and good humour of a great man. For he was truly a great man: historian, author, publisher and public servant. Lengthy obituaries appeared in the *Times*, *Telegraph*, *Guardian*, and *Independent*. He was a tireless worker and achiever. Few people can have made so great a contribution to public understanding and appreciation of our industrial heritage.

Ellis Charles Raymond Hadfield CMG was born in Pietersburg, South Africa, in 1909. He died on 6 August 1996, the day after his 87th birthday. He was educated at St Edmund Hall, Oxford. Much of his career from the 1930s was spent in publishing, though he pursued political and other interests in parallel. He was elected a Labour councillor in Paddington at the exceptionally youthful age of 25, and was a senior trades unionist. Later he became a committed member of the Society of Friends, editing the Quaker newspaper *The Wayfarer* for six years. Working at Oxford University Press, he met his future wife, the historian Alice Mary Miller, with whom he had an admirably close and inspirational relationship until she died in 1989. During the War he was an Auxiliary

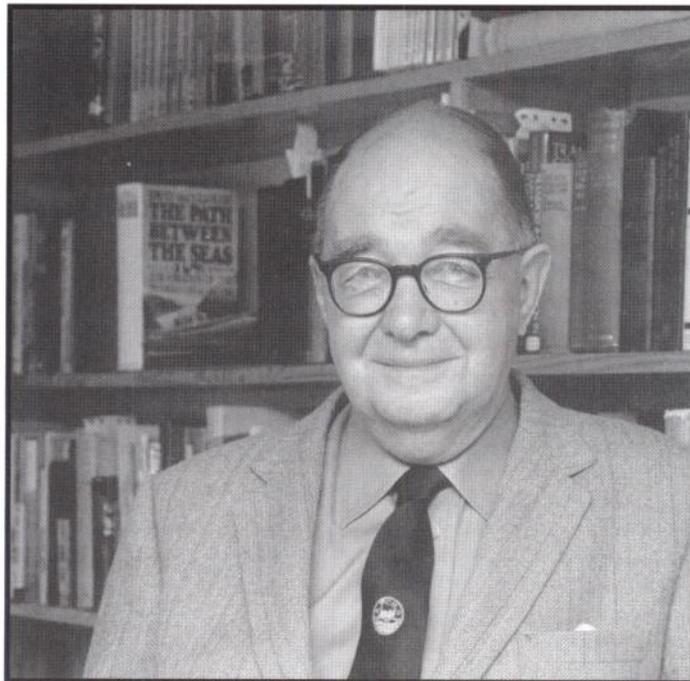


Photo: C. Hadfield Estate

Fireman in the London River Service, and edited the seven volume *Manual of Firemanship* which in its current version continues to be widely used. Before taking early retirement to write, he was Director of Publications, then Controller (Overseas) at the Central Office of Information.

In 1960 he established with David St John Thomas the publishing firm David and Charles, which was among the first to give an opportunity for the publication of books on industrial archaeology as well as canals and railways. Many of these remain essential reading. Hadfield wrote almost throughout his life. His first article was about diamond mining, published in *Meccano Monthly* when he was sixteen. He went on to write about many subjects, from politics to the countryside; but his warmest love and greatest achievements concerned the history of canals. At school near Tiverton, he was intrigued by walks along the Grand Western Canal and

discovered that little was written about it. So began a lifelong project to lay the foundations of canal history in Britain and overseas. *English Rivers and Canals* (with Frank Eyre) was published in 1945. The standard work *British Canals*, now in its eighth edition, was published in 1950. Between 1955 and 1973, he produced the comprehensive series of regional waterway histories known as *The Canals of the British Isles Series* (or 'Hadfields' for short). With their thorough use of primary sources and meticulous standards, these volumes for the first time provided a sound history of every waterway in Britain: a task that would seem monumental even today, with all the advantages of well established Record Offices and ready secondary literature.

Hadfield wrote several more accessible books which connected canals with broader historical themes, including the excellent *The Canal Age* (1968). He produced the extraordinary, ambitious compendium *World Canals*

in 1986. He also turned his hand to studies of engineers: *William Jessop* (with A.W. Skempton) being published in 1979, and *Thomas Telford's Temptation* in 1993. Both these books were concerned not only with history but with righting a wrong, redressing the balance of these two men's reputations.

Despite his extraordinary productivity, Charles was no lonely writer in a garret. The community of those interested in waterways was always of importance to him. With Tom Rolt and Robert Aikman he co-founded the Inland Waterways Association in 1946. Rolt and Hadfield were forced out of the Association shortly afterwards, but it says much for their generosity of spirit that both returned in 1971. Hadfield joined the Council and established the IWA's Inland Shipping Group, campaigning for new commercial uses of the waterways to relieve the increasingly ridiculous and inefficient burden of our roads. He was also a co-founder of the Railway and Canal Historical Society in 1954, and was appointed to the newly established British Waterways Board in 1963. In this latter capacity, his political and diplomatic skills saved large portions of the network for the future, ensuring that the new class of 'Remainder Waterways' as well as working ones were given appropriate recognition in the Transport Act of 1963. These actions, combined with the influence of his writings upon public attitudes, probably did more to conserve our industrial heritage than any other single person's work to date. A biography of Charles Hadfield is in progress, co-written by Hadfield himself (his final work) and Dr Joseph Boughey. His legacy of published books, waterways preserved, and lasting influence on countless men and women, are worthy memorials to a kind and brilliant man and to a life well lived.

Dr Peter Wakelin

Books Received

The following books have been received for review in *Industrial Archaeology Review*:

Automotive History Sources in Coventry Archives, ed. by Richard Storey

Dictionary of Industrial Archaeology, by William Jones

Engineers and Engineering: Papers of the Rolt Fellows, ed. by R. Angus Buchanan

Gunpowder: The History of an International Technology, ed. by Brenda J. Buchanan

Iron for Archaeologists: a review of recent work on the archaeology of early ironworking sites in Europe (Abstracts), ed. by Peter and Susan Crew

La Metallurgie Comtoise: xv – xix siècles, by Jean-Francois Belhoste et al.

Images of Maritime Bristol, by Paul Elkin

Quarries of England and Wales: an historic photographic record, by Peter Stanier

'The Remains of Distant Times' – *Archaeology and the National Trust*, ed. by David Morgan Evans, Peter Salway and David Thackray

The River Waveney, its Navigation and Watermills, by Douglas Pluck

Somerset's Industrial Heritage: a Guide and Gazetteer, ed. by Derek Warren

Short Notices

A Consolidated Glossary of British Mill Terms, compiled and edited by Tony Yoward, (SPAB Wind and Watermill Section, 1996) 49pp. The object of this glossary is to provide standard definitions for the mill terms used in this country, enabling expressions to be universally understood. It has been composed from published sources and also incorporates material gathered from various experts. The entries are grouped under headings with the section on British Mill Terms occupying 43 pages' with shorter sections listing specific American, Flint, Gunpowder and Paper mill terms. An ambitious project representing four years of work. Enquiries to Tony Yoward, Slipper Mill, Emsworth, Hants. PO10 8BS (01243 378452).

Dictionary of Industrial Archaeology, by William Jones, (Sutton Publishing, 1996), 464pp, 100 ills, £40. (ISBN 0 7509 1021 6).

This is the only book of its kind and should prove to be invaluable to the amateur enthusiast and serious

industrial archaeologist. Packed into its 464 pages are over 2,600 entries, covering all the principal industries, along with methods of transport, inventions and their inventors. The dictionary is fully cross-referenced, and short bibliographies are included for major entries. Alternative archaic spellings of words likely to be found in historic documents are given, and regional variations in nomenclature are also listed. A retired chartered engineer, the author has been involved in IA for many years and is a member of both the AIA and Manchester Regional Industrial Archaeological Society. A full review will appear in *Industrial Archaeology Review*.

Frederick Roberts Archive of Industrial Archaeology Memorial Volume of Papers; A history of companies founded in Chelmsford and its surrounding areas, edited by Diana Newman, (Anglia Libraries, 1994) 58 pp, 6 ill, £5. (ISBN 0907262406).

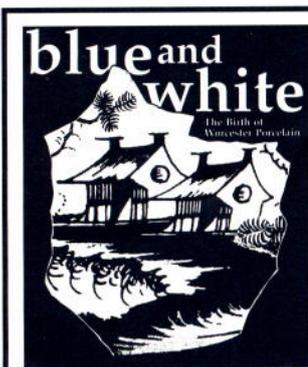
This fascinating booklet provides much hitherto unknown information on industries in and around Chelmsford. Frederick Roberts (1910-1993) devoted much of his life to the study of the industrial history of Essex and his archive of company documents, slides, photographs, newsletters and tape recorded interviews with former employees, is available for consultation at the Chelmsford library of Anglia Polytechnic University. The memorial volume introduces the more detailed company records, including the world's first radio factory at Hall Street, Chelmsford, the Broomfield Ironworks, Paxmans of Colchester and Crittall's metal-framed window works in Braintree. Several papers were originally written to support applications for the listing of local industrial buildings. A rare success was the grade II listing of the Hall Street Marconi works, but mostly the failure to afford statutory protection was quickly followed by demolition. The site of Paxmans, one of the world's leading diesel engine manufacturers, was cleared for the Hythe Quay redevelopment. Through Frederick Roberts' foresight, his work often serves as the only record. This book is one of the first serious attempts to examine the early twentieth century industries of Essex and the information is being utilised as part of a major re-evaluation of the county's industrial heritage by Essex County Council.

A Guide to Scottish Industrial Heritage, edited by Miriam R. McDonald, (Scottish Industrial Heritage Society, 1996), 40 pp, ills, £2.95. (ISBN 0 9528555 0 X).

The Scottish Industrial Heritage Society has published a new guide to sites in Scotland. The A5-sized guide contains grid references and descriptions for over 200 sites, more than twice the number in their 1985 guide produced on the occasion of the AIA Conference in Glasgow. Photographs, road directions and location maps are included in this handy guide. Copies can be obtained from Eric T. Watt, SIHS Publications, 129 Fotheringay Road, Glasgow G41 4LG. Cheques payable to Scottish Industrial Heritage Society (please add 31p UK postage per copy).

Gunpowder: The History of an International Technology, ed. by Brenda J. Buchanan, (Bath University Press, 1996) 400pp, 150 ills, £50, (ISBN 0 86197 124 8). The importance of the history of gunpowder making is now becoming recognised and this volume provides an excellent coverage at the international level. With its roots in China, gunpowder became of immense practical significance in the development of mining, engineering and trade. In this extension of its use from military to civil, the manufacture of black powder can be seen to mirror the cultural, social and economic conditions in which it flourished. Many leading authorities are contributors and chapters are based upon papers presented to the 22nd Symposium of the International Committee for the History of Technology held at the University of Bath in 1994. A full review will appear in *Industrial Archaeology Review*.

Kenilworth's Engineering Age, by Robin D. Leach, (Odbourne Press, 1995), 64pp, ills, £3.95, (ISBN 0 9515147 6 8). Engineering in Kenilworth replaced long-standing occupations, such as brickmaking and animal skin processing. It grew alongside the production of cycles and then cars in neighbouring Coventry, for which it was a component supplier. Following wartime production many new firms started up, some of which have made major growth in engineering production and the town has doubled in population since 1945. New industrial estates have been built on green field sites. The author examines the evolution of individual enterprises and their premises. There are two appendices, one contains present-day details of the early engineering sites and the other describes the activities on three industrial estates in 1994. This book may be obtained post free (inland) from Richard Storey, 32 High Street, Kenilworth, Warwickshire CV8 1LZ.



BLUE AND WHITE

The Birth of Worcester Porcelain

A touring exhibition from Worcester City Museum and Art Gallery

Available for hire until December 1998. Based on objects excavated from the site of the first Worcester factory, this exhibition shows the early history of the industry in the city from 1751 to 1840. The design, production and social history of Worcester porcelain feature in this fascinating and colourful display, which includes many unusual artefacts. 75 Education Packs and Posters are included in the hire fee.

Object Handling Table and Advertising Banners available Dramatic performance by separate negotiation

Size: 4 cases, 8 panels Fee: £750

For further details contact:

Tim Bridges, Collections Manager, Worcester City Museum and Art Gallery, Foregate Street, Worcester WR1 1DT

☎ 01905 722369 or 25371

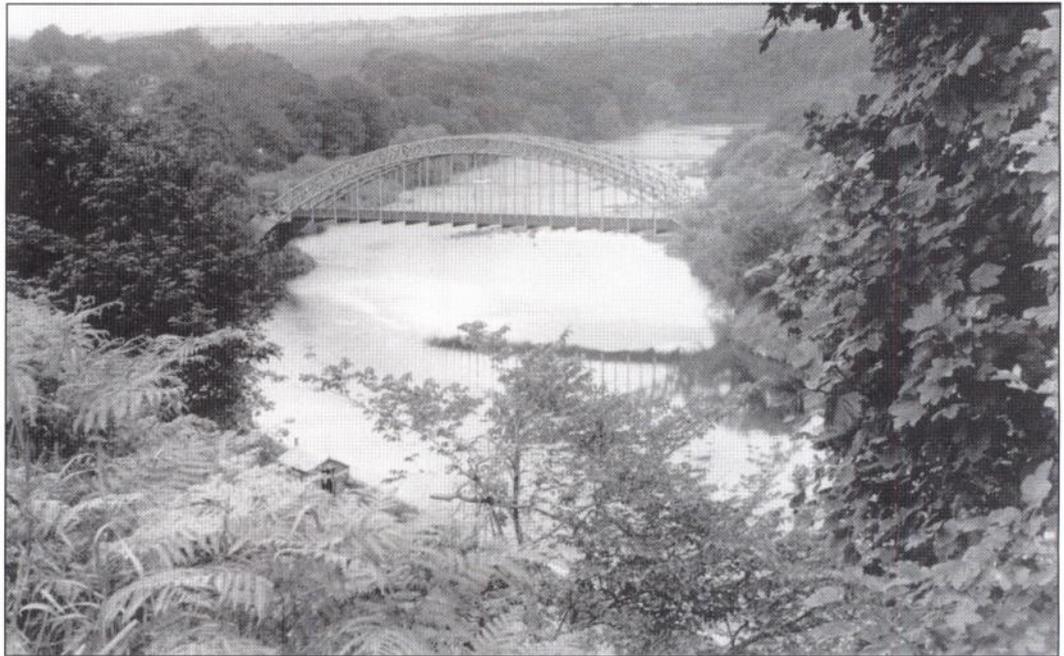
Northern England

In his book *An Account of the Mining District of Alston Moor, Weardale and Teesdale*, published in 1833, Thomas Sopwith describes a mining area of around 400 square miles situated in some of the highest and remote parts of England and 'long associated with an idea of extreme wildness and severity of climate.' So it is. But for much of the nineteenth century it was the most important lead producing area in Britain, and some 6,000 miners and their families lived and worked in these high Pennine dales.

Nenthead was a major centre, part of a large property owned by Greenwich Hospital and leased to the London Lead Company, the largest single employer of labour at Alston Moor from the mid-eighteenth to the end of the nineteenth centuries. It was a planned village, built a little to the north of the large smelt mill. There were blocks of substantial houses for the smelters, the mine foremen and company officials. The miners mainly lodged with farmers in the surrounding countryside. The village was re-planned in 1825 when 34 new cottages were added, together with a market hall, ready money shop, wash and bath houses, a school, church and chapel.

The Nenthead Mines Heritage Centre has gained £156,000 of National Lottery and European money to better present and interpret the history of lead mining and its associated activities. The site is owned by Cumbria County Council and is managed by the North Pennines Heritage Trust. The development is welcome. It will admirably complement the excellent Lead Mining Centre at Killhope which lies just over the hill to the south in County Durham; together they provide a vivid interpretation of this once powerful industry.

Wylam, in Northumberland, was the birthplace of George Stephenson. A little upstream stands a fine single-arched rail bridge spanning the Tyne. It was built in 1876 to carry the Scotswood, Newburn and Wylam link from the north bank to join the main Newcastle to Carlisle Railway on the south. For some years the north track and bridge have formed part of the Tyne Riverside Country Park, used by cyclists, walkers and horse riders. A grant of £157,000 from the National Lottery to Northumberland County Council's countryside department will enable the listed structure to be cleaned, upgraded and painted. The bridge bears a strong similarity to the



West Wylam Bridge across the Tyne is believed to be the first arch rib bridge to support a suspended railway track Photo: J.D. Potts

bigger Tyne Bridge in Newcastle (1925-8) and the even bigger one in Sydney, New South Wales. It is claimed that the West Wylam Bridge at Hagg Bank was their prototype.

Meanwhile, another listed bridge over the Tyne at Haltwhistle needs £60,000 to remove and replace its timber deck and to sand blast and paint the steelwork. Conservation is expensive.

Beneath waste on the site of the old Lambton coke works at Sunderland, archaeologists have recently unearthed a fine example of a wooden wagonway dating from 1780, in long lengths and complete with points.

Finally, welcome back to public view the *Turbinia*, now restored and displayed in the Newcastle Discovery, and a must for the AIA 1997 Conference.

Fred Brook

Ireland

IA News 95 (Winter 1995) carried an item and map describing proposals to re-water the canal network in Northern Ireland. The debate has now progressed, and there are further developments to report.

On the Newry Canal, the two main options were either to re-water the canal at a reduced depth of 1.00 m (balancing the risks of flooding against the needs of navigation, while retaining the historic structures), or to re-water at the original design depth of 1.55 m (but rebuilding the lock chambers and

reaches at a lower level to reduce flooding risks). In principle the choice was between conservation or deep-draught navigation, but in practice cost would be a big factor with the second option estimated to cost double the first.

A compromise has been reached, adopting a heritage-based scheme with a 1.55 m depth for navigation. This new option envisages the retention of the vast majority of historic structures (reaches, locks and bridges), and the operation of a dual water level regime, with 1.55 m in summer only, and a planned minimum depth of 1.00 m in winter. Flooding risk would be minimised by a combination of this regime and increased 'bundling' (raising the banks) particularly along the low-lying ends of the canal.

The proposal being advanced for the Belfast to Lisburn (Sprucefield) section of the Lagan Canal is conservation-based. Some new work would be required because of latter-day developments along short stretches of the waterway, but there are no plans to alter the dimensions of the original locks or other historic structures, and the lock gates would be manually operated. Sadly, the condition of the stone and brickwork in the lock chambers is causing some concern, and a substantial amount of replacement and/or reconstruction may be required.

Stonework in the many locks and bridges along the Ulster Canal is of high quality and in good condition. However, this is also the narrowest canal on the

main network in Ireland, and it is (or would be) the main link between the Erne/Shannon system and Lough Neagh, plus the array of canals centred on the lough. As a result, there is the potential for considerable conflict here, between the conservation lobby and elements of the boating lobby who seek to have the waterway enlarged.

Attention is being focused on three main alternatives, with options to re-water the canal at its existing dimensions or to construct a new parallel canal with the much larger controlling dimensions of the Shannon/Erne Link. Compromise options seek to balance conservation and navigation, at a reasonable cost. One significant proposal envisages widening most of the canal by working from one bank only, to match that on the majority of the stillwater canals in Ireland (in the Republic most are 4.1m wide, but the 4.5m width of the Newry Canal may be the best to use). Such limited widening would mean that many historic bridges could be retained, but part or all of the towpath beneath them would be removed. The locks would remain at their existing length, and only one side would be reconstructed with the original masonry to facilitate widening. The outcome of this option is that the maximum size of the craft on the waterway would be determined by constraints set by the existing heritage, rather than the other way round.

Michael Coulter

East Anglia

A very successful fifth EERIAC Conference held in Great Yarmouth is reported elsewhere in this issue of *IA News*. Remaining in Norfolk, NIAS hope to survey the 90-year old wooden lifeboat station at Cromer before it is rebuilt, and continue with their survey of every road bridge being reconstructed to meet EEC standards, a slightly easier task at the moment because of local government cuts. Gunton Mill had a successful open season, but the rotting of massive wooden bearers put in only ten years ago has affected the turning of the two wheels, and all four beams will have to be replaced.

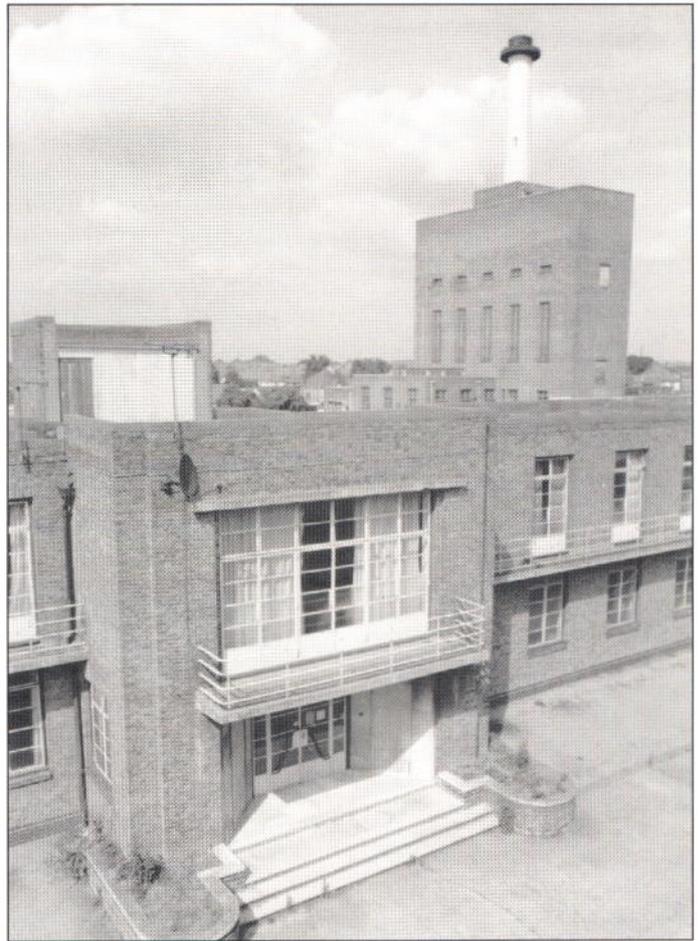
There is still much concern about the future of the Coleman's site in Norwich, though certain buildings have now been listed and the complex of small scale maltings and brewery at Letheringsett is under threat of housing conversion. The very early Homersfield reinforced concrete bridge reopened after restoration in January, which takes us into Suffolk.

In Suffolk, the staunch converted to a pound lock at Mildenhall has now been reconstructed and trees and undergrowth removed. While certain aspects of the reconstruction were rather unhappy – the cutting of coping stones, etc – overall, it is very much

better than the partial demolition originally proposed. It is hoped that work will soon start on the restoration of Great Cornard Lock on the Stour Navigation, and on the Gipping Navigation there are moves to restore Baylham Lock. The fate of Sproughton Mill still hangs in the balance, but Kersey Mill is to be restored at last, and restoration work continues at Stanton and Drinkstone post mills.

In Essex, Shane Gould has little to report in the way of hot news, but the county industrial archaeology survey progresses well, with thematic reports on maltings, limekilns and WW2 airfields completed. The major task remains the recording of the huge site at Waltham Abbey. He has sent the accompanying photograph of Rochford Hospital, a model complex which was fully recorded prior to conversion into elderly flats and apartments. This was the first successful use in Essex of the new PPG15 whereby the developer was required to undertake a full survey of the site as part of the planning/listed building consent. A full article will appear in *Essex Archaeology and History*.

Finally, in Cambridgeshire there is again little to report, but at least no spectacularly bad news has reached me!



Rochford Hospital, Essex. Designed by FW.Smith, the buildings were opened between 1938 and 1941, and show strong affinities with the International Modern Movement Style

Photo: N. Macbeth, © Essex County Council

REGIONAL CORRESPONDENTS

Please support your Regional Correspondent by sending relevant material which may be of interest to our readers.

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Region 2: IRELAND

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The market reached will be attractive to publishers, tour operators, heritage consultants and visitor attractions.

Advertising rates range from as little as £45 to £200 for a full page.

All proceeds contribute to the costs of the Newsletter and the work of the Association which is a Registered Charity. Inserts may be mailed with IA News at a charge of £25.

For further details, contact the Editor.

**15-17 December
PROBLEMS OF
IDENTIFICATION AND
PROTECTION OF
INDUSTRIAL SITES IN
URBAN AREAS**

organised by AIA, at Leicester University. Details from Mrs V.A. Beauchamp, Division of Adult Continuing Education, 196-198 West Street, Sheffield S1 4ET.

**4-6 April 1997
AIA IRONBRIDGE
WEEKEND**

at Ironbridge, on 'Problems Presented by the Preservation of Major Structures'. More details are given inside this issue and booking forms will be sent with the next mailing. All are welcome. Contact: Gordon Knowles, 7 Squirrels Green, Great Bookham, Leatherhead, Surrey KT23 3LE.

**9-11 April 1997
INDUSTRIAL
COLLECTIONS: CARE AND
CONSERVATION**

at Cardiff, organised by the United Kingdom Institute for Conservation and the Council for Museums in Wales. Papers will be presented on the themes

of ethics, management and conservation; keynote speech by Sir Neil Cossons. Anyone wishing to contribute, or seeking details, should contact Diane Dollery, Department of Archaeology, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP. ☎ 01222 397951.

**12 April 1997
SOUTH EAST REGION IA
CONFERENCE**

at Avery Hill Campus of University of Greenwich, Eltham, SE London, on 'Urban IA'. Details from Bill Firth, 49 Woodstock Avenue, London NW11 9RG.

**12 April 1997
WESTERN REGION IA
CONFERENCE**

in Cirencester. Further details from Janet Crompton, 2 Eastfield Road, Cotham, Bristol BS6 6AA. ☎ 0117 924 8160. Fax 0117 924 1208.

**29 May - 1 June 1997
ANNUAL MEETING OF
SOCIETY FOR
INDUSTRIAL
ARCHEOLOGY**

at Houghton, Michigan. Papers are

called on mining, metallurgy, industrial landscapes, preservation, etc. Proposals to: David Landon, Dept of Social Sciences, Michigan Technological University, Houghton, MI 49931, USA. ☎ 906 487-2366. Fax 906 487-2468.

**22-29 June 1997
10TH TICCIH
CONFERENCE ON
MARITIME
TECHNOLOGIES**

at Thessaloniki in Greece. For information, contact Conference Secretariat, The Greek Section of TICCIH, Institute of Neohellenic Research, 48 Vassileos Constantinou Avenue, 11635 Athens. ☎ (30 1) 721 0554, Fax (30 1) 724 6212.

**20-26 July 1997
XXTH INTERNATIONAL
CONGRESS OF HISTORY
OF SCIENCE**

at Liège, Belgium, on the theme of 'Science, Technology and Industry'. Information from Prof. R. Halleux, Universite de Liege, Centre d'Histoire des Sciences et des Techniques, 15 av. des Tilleuls, B-4000, Liège, Belgium. ☎ 32 (0)41 66 94 79, Fax 32 (0)41 66 95 47.

**5-12 September 1997
AIA ANNUAL
CONFERENCE 1997**

in Newcastle upon Tyne, with pre-conference seminar, conference weekend and following programme. Advance warning only. Details, when available, from David Alderton, 48 Quay Street, Halesworth, Suffolk IP19 8EY.

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



INDUSTRIAL ARCHAEOLOGY NEWS
(formerly AIA Bulletin ISSN 0309-0051)
ISSN 1354-1455

Editor: Dr Peter Stanier

Published by the Association for Industrial Archaeology. Contributions should be sent to the Editor, Dr Peter Stanier, 49 Breach Lane, Shaftesbury, Dorset SP7 8LF. News and press releases may be sent to the Editor or the appropriate AIA Regional Correspondents. The Editor may be telephoned on 01747 854707.

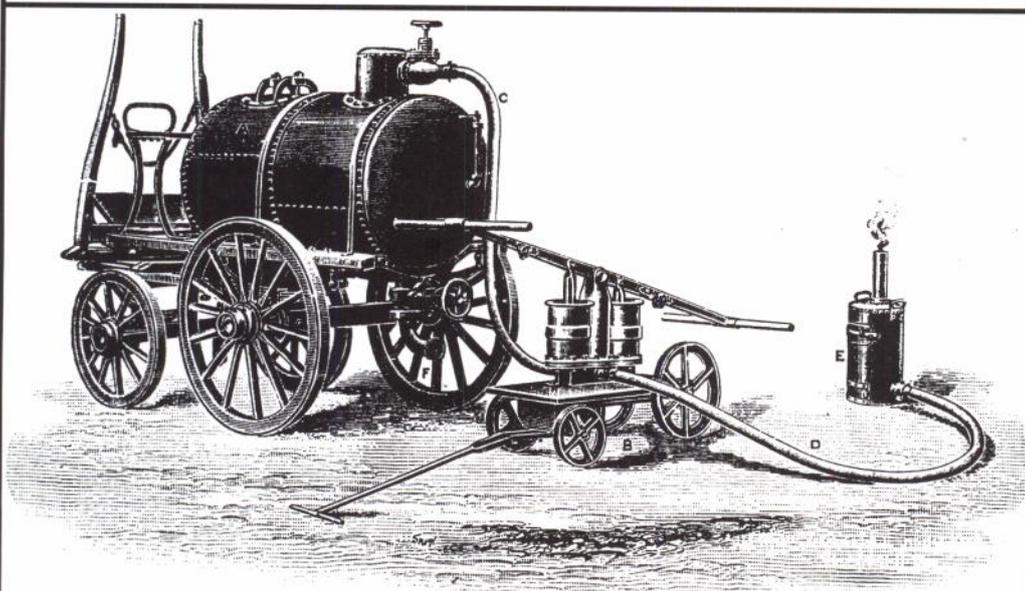
Final copy dates are as follows:

- 30 March for May mailing
- 30 June for August mailing
- 30 September for November mailing
- 30 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 groups and bodies involved in the preservation of industrial monuments, to represent the interests of Industrial Archaeology at national level, to hold conferences and seminars and to publish the results of research. The AIA publishes an annual Review and quarterly News bulletin. Further details may be obtained from the Membership Secretary, Association for Industrial Archaeology, The Wharfage, Ironbridge, Telford, Shropshire TF8 7AW, England. ☎ 01952 433522.

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

100 YEARS AGO



Merryweather's Pneumatic Cesspool Emptying Apparatus

The accompanying illustration shows a complete apparatus for emptying cesspools, recently constructed by Messrs Merryweather & Sons Ltd, London, for use at Pokesdown. The apparatus, as will be seen, consists of a tank or receptacle for sewage, with dome and connecting pipe for producing a vacuum in the receptacle. The tank is provided with a man-hole for cleansing purposes, and inlet and outlet sluice valves. A gauge-glass is also fitted, which gives indication of the quantity of matter in the receptacle. The whole is mounted on strong springs and patent axles provided with four wheels, a driver's seat and footboard are also fitted. The vacuum pump is of special design, to be worked by two men, of necessary power to create a vacuum in the tank. It is mounted on a platform and provided with four iron wheels. A flexible air-pipe is supplied for connecting the tank to the air-pump, and a similar pipe for the conveyance of the gases to the stove, where they are burnt. *[from The Engineer, 20 November 1896]*