



From a local directory

The entrance to the unoccupied Remploi factory in Leatherhead. The name is on the railings (top).

The Old Thermega/Remploi Factory today (right), see page 8.



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## Contents

- 2 Notices
- 3 Diary:  
Surrey Industrial History Group Officers
- 4 Venues, Times, Contacts
- 5 Industrial Archaeology News No.146 Autumn 2008
- 6 Samuel Cody: Air Pioneer *by Peter Reese*
- 7 Factory Chimney Stacks: Some Thoughts and Some Evidence *by Paul W Sowan*
- 8 Remploy at Leatherhead *by Peter Tarplee*

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### Reports & Notices

Details of meetings are reported in good faith, but information may become out of date. Please check details before attending.

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### SIHG Visits, Details & Updates at [www.sihg.org.uk](http://www.sihg.org.uk)

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*Saturday 4 April 2009*

#### **Croydon's Industrial Archaeology**

Tour led by Paul Sowan  
plus pub lunch.

Details later: Jan Spencer, 01372 454766, [news@sihg.org.uk](mailto:news@sihg.org.uk).

Saturday 25 April 2009

#### **SERIAC 2009**

#### **Industrial Archaeology of Hampshire & the Isle of Wight**

hosted by Hampshire Industrial Archaeology Society (HIAS)

at the Guildhall Winchester

[www.hias.org.uk](http://www.hias.org.uk)

*Saturday 20 June 2009*

#### **Whitechapel Bell Foundry**

A hard-to-book opportunity to visit this traditional foundry.

Entry £10.00 - Numbers are strictly limited, but there are still a few places left.

Cheque to 'SIHG' + SAE to organizer: Tony Gregory, Treetops,  
Scotlands Close, Haslemere GU27 3AE, [pac.tech@virgin.net](mailto:pac.tech@virgin.net).

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SIHG members will be sad to learn of the death,  
on 22 September, of Alice Mills, wife of John.

John is a long-time active member of SIHG and  
Alice often accompanied him on outings.

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## SIHG Newsletter No 166 November 2008

### DIARY

#### The 33rd series of Industrial Archaeology Lectures

Held on alternate Tuesdays, 1930 - 2130, from **30 September 2008**  
at the University of Surrey (Lecture Theatre F).

Enquiries to programme co-ordinator, Bob Bryson, 01483 302389,  
e-mail [meetings@sihg.org.uk](mailto:meetings@sihg.org.uk). Maps on [www.sihg.org.uk](http://www.sihg.org.uk)

Free parking is available on the campus in the evening, in the main car park.  
Single lectures at £5, payable on the night, are open to all.

Saturday 28 February 2009

Surrey Archaeological Society Archaeological Research Committee

#### Annual Symposium

Ashted Memorial Hall, Woodfield Road Ashted

talks & Displays. 1000 – 1700

SyAS members £8 in advance, non-members or on the door £10

#### Exploring Surrey's Past [www.exploringsurreypast.org.uk](http://www.exploringsurreypast.org.uk)

is looking for articles on Industrial Archaeology in Surrey.

Each contribution should be about 300 words and could include a picture.

They have asked for 10 topics; why not send them 100!

Send your work to [exploringsurreypast@surreycc.gov.uk](mailto:exploringsurreypast@surreycc.gov.uk) and mention SIHG.

We are in urgent need of a new **Treasurer**. This is a relatively light task as SIHG is part of the Surrey Archaeological Society. The formal accounts are thus presented by the parent body, not by the SIHG Treasurer.

*Why not write about your holiday experiences of industrial archaeology!*

The deadline for **submitting copy** for the next Newsletter is **two months time**.  
*Submissions are accepted in typescript, on a disc, or by email to [news@sihg.org.uk](mailto:news@sihg.org.uk).*

**Anything related to IA will be considered.**

**Do, please send in reports / photos of holiday visits or thoughts on local, national or international Industrial Archaeology.**

*Priority will be given to Surrey-based or topical articles.*

*Contributions will be published as soon as space is available.*

*Readers are advised that the views of contributors are not necessarily the views of SIHG.*

This edition of the Surrey Industrial Group Newsletter has been reformatted so that  
it is more easily read online or printed out as a PDF.

Diary entries have been curtailed to cover SIHG events only.

Other editorial matter is practically as originally published.

Many thanks to all who have sent in contributions.

Website: [www.sihg.org.uk](http://www.sihg.org.uk)

#### Surrey Industrial History Group Officers

Chairman & Lectures Organiser: **Robert Bryson**, [meetings@sihg.org.uk](mailto:meetings@sihg.org.uk)

Secretary: **Alan Thomas**, [info@sihg.org.uk](mailto:info@sihg.org.uk)

Treasurer: **Robin Turier**

Membership Secretary: **David Evans**, [membership@sihg.org.uk](mailto:membership@sihg.org.uk)

Newsletter Editor: **Jan Spencer**, [news@sihg.org.uk](mailto:news@sihg.org.uk)

## Other IA Organizations - Venues, Times & Contacts

**All Hallows by the Tower:** Walks start from All Hallows by the Tower Church at 1100, finish by 1300, £6.00.  
Helen Elletson, Curator & Education Officer, All Hallows by the Tower, Byward Street, London EC3R 5BJ.  
020 7481 2928, helen@ahbtt.org.uk, www.ahbtt.org.uk

**Amberley Working Museum** is off the B2139 between Arundel and Storrington, next to Amberley railway station in West Sussex. Free parking.

**Brooklands Museum:** Brooklands Road, Weybridge, Surrey KT13 0QN. 01932 857381, www.brooklandsmuseum.com

**Crossness Pumping Station:** Belvedere Road, Abbey Wood, London SE2. £4 adults. Book in advance, 020 8311 3711 (not by answerphone). Visits start at 1330. www.crossness.org.uk.

**Croydon Natural History & Scientific Society:** small hall, United Reformed Church Hall, Addiscombe Grove, East Croydon at 1945. Contact Celia Bailey, 96a Brighton Road, South Croydon, CR2 6AD, 020 8686 5610, www.greig51.freerserve.co.uk/cnhss/.

**HIAS (Hampshire Industrial Archaeology Society):** Underhill Centre, St John's Road, Hedge End, SO30 4AF at 1945; visitors welcome, free parking.

**Kempton Great Engines:** Feltham Hill Road, Hanworth, Middlesex TW13 6XH. 1100 - 1600. Adults £6, OAPs £5, Children (to 16) free. 01932 765328, www.kemptonsteam.org.

**Kew Bridge Steam Museum:** Green Dragon Lane, Brentford, Middx TW8 0EN; open 1100. 0208568 4757, www.kbsm.org .

**Knowledge of the City:** St Bride Institute, Bride Lane, off Fleet Street, London EC4Y 8EQ. at 1830. Send cheque for £30 payable to "Down Memory Lane" & SAE to Val Pretlove, 10 Brunswick Hill, Reading RG1 7YT. 0118 9590273, pretlove@waitrose.com.

**Leatherhead & District Local History Society:** Dixon Hall of the Letherhead Institute, High Street, Leatherhead , at 1930, visitors £2. www.leatherheadlocalhistory.org.uk/

**London Canal Museum:** 12/13 New Wharf Road, N1 9RT, at 1930. £3 (£2 discounts). 020 7713 0836, www.canalmuseum.org.uk

**Newcomen Society London:** Fellows' Room, Science Museum, Exhibition Road, London SW7 2DD at 1745.

**Newcomen Society Portsmouth:** Room 0.27, Portland Building, University of Portsmouth, St James Street off Queen Street, Portsea, at 1830. Free parking from 1630, admission free.

**Railway & Canal Historical Society:** The Rugby Tavern, Rugby Street, WC1, at 1830. www.rchs.org.uk

**Rural Life Centre:** Old Kilns Museum, Tilford, Farnham, GU10 2DL, Wed -Sun, 1000 - 1700, £6, over 60s £5, children 5-16, £4. www.rural-life.org.uk.

**Southwark & Lambeth Archaeological Society:** The Housing Co-op Hall, 106 The Cut at 1930. Visitors. £1. http://tinyurl.com/sihg03

**Sussex Industrial Archaeology Society:** West Blatchington Mill Barn, Holmes Avenue, Hove at 1430. www.snowing.co.uk/sias/

**Sussex Mills Group:** www.sussexmillsgroup.org.uk/

**Wealden Iron Research Group:** www.wealdeniron.org.uk

### Diary November

25 Tue **Surrey Industrial History Group Lecture Series:**  
Early Wireless *by Ken Tythacott, British Vintage Wireless Society.*

### Diary December

9 Dec **Surrey Industrial History Group Lecture Series:** Members' Talks

### Diary January

6 Tue **Surrey Industrial History Group Lecture Series:**  
Banknote Papermaking at Laverstoke & St Petersburg *by Prof. Alan Crocker President SIHG.*

20 Tue **Surrey Industrial History Group Lecture Series:**

### Recording Factory Closures, Demolition of Old Machinery etc

A good opportunity to record the history & to rescue traditional papers & machinery!  
The Pump House at Mickleham has been reprieved as the redevelopment is not going ahead.

Read the Remploy story on page 8.

*If you hear of a factory which is about to close, please report it to us; contacts on page 3.*

## Industrial Archaeology News

No.146 Autumn 2008

*report by Gordon Knowles*

Richard Hartree describes the AIA visit to the Saarland in May when sites from the Velsen coal mine to the UNESCO World Heritage site at Volklingen Ironworks were viewed. After 100 years of operation the ironworks closed in 1986. Since then a 5000m route around the six blast furnaces and the 104 coke ovens has been opened up. I visited the site some year's ago now and was most impressed. Hartree is concerned for the future of the site, the continued need to make it more 'visitor friendly' and sustaining it for future generations. There is a good website at [www.voelklinger-huette.org](http://www.voelklinger-huette.org).

Visits were also made to a water turbine mill in Merzig and the Villeroy and Boch porcelain museum, to a further ironworks at St. Ingbert, to the Losheim railway Museum and to a family run corn mill. Over the French border the earthenware kilns at Sarregue mines and worker housing were seen.

Noel Meeks outlines the history of the Hereford Waterworks, of which he is Chairman. The site opened in 1854 and was progressively enlarged up to 1906. The first electric pumps, among the first in the country, were installed in 1911. When the industry was privatised in 1974 it became part of Welsh Water, a new pumping station was built and a charitable trust established to run the museum. In 2000, the main Victorian building, Listed Grade II and a Scheduled Monument, was placed on English Heritage's Register of Buildings at Risk. After the usual frustrations of fund raising, consents and design issues, a new visitor centre, engine gallery etc. was opened in 2006. The site is the only working museum in Herefordshire and I can recommend a visit to it at Broomy Hill, Hereford, telephone 01432 344062.

A cliff top Cornish mine, saved by the National Trust, is described by Graham Thorne. It is in 30 acres of coastline in Mounts Bay and includes substantial, but vulnerable, remains of the 19<sup>th</sup> century Wheal

Trewavas copper mine. There are two Grade II listed engine houses, including shafts, stacks, flues and working platforms. It is a Scheduled Ancient Monument, part of the Tregonning and Trewavas District within the Cornish Mining World Heritage Site. The site was bought through the Trust's Neptune Fund and the considerable work to stabilise and protect the buildings is challenging; the Trust, working with unidentified partners, is asking for maps, pictures or other information to assist in building up their knowledge of the site.

Local news is of the launch in May of the 70 inch Bull Engine at Kew Bridge Steam Museum. The Bull was an inverted vertical alternative to the conventional beam engine and in 1799 was the cause of a protracted legal case finally won by Boulton and Watt who successfully claimed that it had violated their engine patent. The Kew engine was built by Harvey of Hayle in 1856 and first ran at Kew in 1859, supplying water to the new pumping station at Campden Hill. There were eventually two more at Campden, plus a later 90 inch engine, two at Battersea, one with 112 inch diameter cylinder and five at Hampton and a further one for the West Middlesex Company. The Kew engine was decommissioned in 1944 and serious restoration began in 2001. It has taken more than 7,000 volunteer man-hours and £45,000 in grants and donations to bring the engine back to life.

Sir Neil Cossons writes on STIR, Saving the Industrial Revolution, a new initiative to secure a sustainable future for Britain's preserved industrial archaeological sites, buildings and collections. A Working Group, which will meet at Ironbridge, has been set up under the umbrella of AIM (The Association of Independent Museums) with members from a number of well-known industrial museums. The new body will work closely with the AIA, the Newcomen Society and English Heritage. Priorities are to determine the nature and scale of the issues facing preservation bodies, key requirements, financial circumstances and confidence in the future. □

SIHG Lecture Series 28 October 2008

## **Samuel Cody: Air Pioneer**

*by Peter Reese report by Gordon Knowles*



Peter Reese, who has had his book on Cody published, gave us an excellent lecture providing some early details of Cody's life that were not as familiar as his later exploits.

He was born in Davenport, Iowa, US, in 1867 and not in Texas in 1861 as he later claimed and his name was Cowdery. He had little formal education but learned to ride at an early age and 'rode the range' in his early teens where he learned to shoot.

He blatantly changed his name when he set up his own 'Wild West' show in competition with WF 'Buffalo Bill' Cody. He came to London in 1890 and successfully toured Britain with his wife. She subsequently went back to the US and eventually divorced Cody who meantime had set up with his English common law wife.

At the end of the 19<sup>th</sup> century Cody turned his ever inquiring mind to flight; to kites rather than balloons which were currently in vogue. He tried to interest both the War Office and the Admiralty but neither were initially enthusiastic although the latter

did eventually take them up for observation purposes. Then in 1905 he was offered the post of Chief Kite Instructor at the Army Balloon School, newly moved from the centre of Aldershot to Laffan's Plain, Farnborough. He built his Glider Kite whilst working on Britain's first military airship, 'Nulli Secundus', taking part in the latter's pioneering flight over London in September 1907.

Cody now concentrated working towards powered heavier-than-air flight, completing the British Army Aeroplane No 1A in early 1908. Finding an engine of sufficient power and with an adequate power-weight ratio was a problem. But a French Antionette engine similar to the one in Nulli Secundus was made available to him.

On 16 October 1908, watched by a large crowd, Cody made a successful 27 second flight covering 1,390 feet and reaching a height of 35-40 feet across Farnborough Common. He climbed over two copses of trees but had insufficient height to miss a third. The aeroplane crashed, Cody walking away with some cuts and bruises. This was the first successful powered, controlled, flight in Britain, albeit by an American, although Cody subsequently became a British subject. Cody later gave his wife a flight as a passenger, she becoming the first woman to fly.

Peter continued with the story of Cody's later exploits culminating in the disastrous flight of the Cody VI floatplane on 7 August 1913 when it crashed killing Cody and his passenger, WHB Evans, the former Hampshire cricket captain. Cody was given a funeral with full military honours, with a crowd of some 50,000 to 100,000 attending.

This was an excellent evening and the timing most appropriate, it being two weeks after the centenary of the first successful powered flight in Britain. □



## Factory Chimney Stacks: Some Thoughts and Some Evidence

by Paul W Sowan

Tall brick factory chimneys have commonly been of square, octagonal, or circular section, and in all cases the outer faces taper upwards. Photographs of numerous examples of all three kinds have been published in Pickles's book (1971) '*Our grimy heritage*'. Many, of course, are brick-built. But some are of stone.

### Two classes of factory chimneys

Industrial chimneys may perhaps be divided into two main classes. The first group, having much the same purpose as domestic chimneys, serve to create an updraught to remove the products of combustion (primarily carbon dioxide, steam, and residual atmospheric oxygen and nitrogen) of coal or other fuels from fires for steam engine boilers, forges, and the like. The purpose of chimneys in the second group is to remove more noxious gases (such as especially the very toxic sulphur dioxide) or particulates (such as arsenic oxide) from chemical processing such as the roasting of metalliferous sulphide ores. As technology advanced, and factory operators either chose or were forced by legislation to exercise a greater degree of environmental friendliness, or indeed simply realised that arsenic and sulphur recovered from flue gases were valuable and saleable products in their own right, ways and means were devised to prevent their escaping up the chimney, and to facilitate their recovery for sale. Very tall chimneys were built primarily to discharge smoke and toxic materials so high above ground level that they were more effectively dispersed, and diluted before coming back to ground level as dust, soot, or gases dissolved in 'acid rain'. This was obviously of particular concern in the new towns of the industrial revolution, which were often in valley settings (many factories having at first relied on water power) which tended to



hinder dispersal.

Taller chimneys, also, would create a stronger draught, provided the cross-sectional area of the flue was commensurately larger. Brees (1852) observes that 'In erecting chimneys [for steam engines] from 70 to 90 feet high, it is a common rule to make them 20 inches square at the top for each horse-power of the boiler ... the draught is not improved by increasing the height much beyond 40 or 50 yards, unless the width be increased on a similar ratio.'

Many very tall chimneys of the first class, associated with brick kilns and (a little later) lime-kilns, date from the middle of the 19<sup>th</sup> century, when kilns were built to the patent (1857) of Friedrich Eduard Hoffmann [1818 - 1900] of Gröningen near Halberstadt in Germany. This patent was widely adopted throughout the UK from the 1860s onwards for both brick and lime kilns of the continuously operating 'ring-oven' pattern. A special case is perhaps provided by the 'glass cones' of places such as Bristol (where one survives) and potteries kilns (one survives at Coalport, Shropshire).

In more recent times, we have at Croydon a pair of very tall (92 metre) brick chimneys, being all that remains of Croydon 'B' Power Station. These were built shortly before World War II, and are all that now remains of the former Station.

### The special case of Dietzsch and Smidth lime kilns

A third group of very tall structures might also be classed as chimneys, comprising continuously operated vertical shaft lime kilns where the 'chimney' is more or less an integral part of the processing furnace. If (as especially in lime-kilns) the lower part of the interior of the structure was intended to become very hot (over 1,000 °C), and to contain a moving charge of material being processed, wear-resistant refractory brick linings (renewed from

(Continued on page 8)

*(Continued from page 7)*

time to time) were essential. These lining bricks had to be of very precisely moulded or cut shapes and sizes and laid with extremely thin mortared joints. Re-lining was a skilled and time-consuming business. The upper parts of such shaft or running kilns, in cheaper brick, accommodated feedstock being dried and pre-heated by hot flue gases, utilising what would otherwise be wasted heat (and thus wasted fuel). There are two such shafts each accommodating a pair of Dietzsch kilns for lime-burning surviving at the former Dorking Greystone Lime Co. Ltd's works at Betchworth, built in 1887 and 1897. Carl Dietzsch of Malstatt (an industrial suburb of Saarbrücken) patented his first kilns for cement manufacture in or about 1883 but they were later (as with Hoffmann kilns) adapted for lime-burning.

Also at Betchworth there is another related structure, a very tall Smidth-type lime kiln dating from the first years of the 20<sup>th</sup> century but abandoned before construction had been completed so never fired. Although described by the lime company as a 'modified Dietzsch kiln', the design has clearly been influenced by the patents of Carl Schneider of Hamburg and Verner Frederick Lessøe Smidth of Copenhagen; and of Verner Smidth and Emil Riisager, of 1898. The lime company at Betchworth was notable for examples of 'technology transfer', importing German and Danish designs and adapting brick or cement kilns for burning lime. All three of these imposing brick towers at Betchworth are Scheduled Ancient Monuments (SAM 22781). (to be concluded) □

## Remploy at Leatherhead

*by Peter Tarplee*

The Surrey Industrial History Group is often asking for information about any works which closes down. One recent closure was the Remploy factory in Leatherhead which had a slightly unusual history.

Following World War I, in 1919 the Ex-Services Welfare Society had been formed to help the thousands of veterans who were suffering from shell-shock. During the actual fighting there was the great risk that the individual would have been sentenced to death by firing squad although officers who were afflicted did get treatment in mental hospitals. After the war rather than the victims being confined to asylums the Ex-Services Welfare Society felt that they could and should be given rehabilitation so that they could work in an industrial setting.

In 1917 Sir Frederick Milner was among those who pressed for recuperative hostels although the government at the time found it difficult to distinguish between the genuine certifiable men and those who could respond to treatment. Sir Frederick was a former Conservative Member of Parliament who had been forced to give up his seat because of deafness and became the champion of the war disabled.

He founded hostels for shell-shock victims starting with one in Hampstead.

In 1924 the Ex-Services Welfare Society opened the Sir Frederick Milner House in Beckenham followed two years later by the establishment on the Ashted/Leatherhead border which was set up in 'The Long House', a house built in 1892 in Ermyn Way which was vacant at the time and had been bought by the Society. The following year a sheltered workshop was built alongside the house and this was used by Thermega who manufactured electric blankets and heating pads. The factory was staffed by residents of the Sir Frederick Milner Home and they continued making electrically heated blankets and similar goods until their closure in 1980.

Electrically heated pads had been developed by an American doctor, SI Russell, around 1912 particularly for the use with tuberculosis patients who, at that period, spent a lot of time out of doors. The first commercial production of electric heating pads and blankets was carried out by the World War I veterans for Thermega at Leatherhead. At a lunch at Leatherhead in 1928 to celebrate his 79<sup>th</sup> birthday Sir Frederick Milner was presented with a tobacco pouch from the 40 employees of Ther-

*(Continued on page 9)*



*(Continued from page 8)*

mega. He reported that they were now producing over 500 electric blankets each week as well as some 2,000 electric pads to take the place of poultices for local heat application. He insisted that the factory was not a charity but a business run on commercial lines and that all the men were paid a living wage. He stressed the need for cottages to be built for married couples and in 1930 twelve were built in the grounds for couples where the man was employed at Thermega; these remain in Ermyn Close.

In 1933 Admiral of the Fleet, Sir Reginald Yorke Tyrwhitt became President of the society and they opened a treatment centre named after him in Oaklawn Road, Leatherhead in 1946 which is still in operation. The society changed its name to the Ex-Services Mental Welfare Society in 1958 and they now are also known as Combat Stress.

Following the closure of Thermega, Milner House became a private nursing home whilst the factory was taken over in 1981 by Remploy. 'Remploy' was a brand name originally devised by the Ex-Services Welfare Society and was set up under the 1944 Disabled Persons Employment Act by Ernest Bevin, the Minister of Labour at the time. The organisation grew to have a network of facilities throughout Britain which enabled disabled staff to carry out useful functions in a work situation. Leatherhead was part of the manufacturing services group and they acted as a

contract manufacturer engaged in the batch production of electro-mechanical and electronic equipment, as well as the assembly of a wide range of products.

In November 2007 it was announced that the Leatherhead Remploy factory would be closing as well as many others throughout the country. After extensive lobbying by trades unions and others the state-owned company closed 29 factories with the loss of 2,500 jobs. This brought to an end an industrial enterprise employing disabled persons, which had started here in 1927 as what was the first production unit in the country for making electric blankets and heating pads for medical, industrial and domestic use. The old Thermega factory remains unused adjacent to Milner House nursing home next-door to the offices of Esso which were built on the site of the old Goblin works where vacuum cleaners, Teasmades, radios and clocks had been manufactured.

Further reading:

Barham, Peter;

Forgotten Lunatics of the Great War  
Brook, Roy;

The Stress of Combat; the Combat of Stress  
Clube, J R;

L&DLHS Proceedings, Vol 6 No2

The Times, 8-11-28,

Training the Shellshocked ☐

Hard at work on  
the Downside Mill  
training excavation  
in August;  
several SIHG  
members took part.

