

### Contents

The British Steel Collection

John Wilkinson (1728–1880) Ironmaster

Pimlico London School being Demolished

To the Lighthouse – Japanese Style

Old Ordnance Survey Maps at New Scales

Project INCH – best foot forward!

Liverpool 'Firsts' 3<sup>rd</sup> Edition

Book News – *Brunel's Hidden Kingdom and The Windmills of Thomas Hennell*

HEWs in the News

Editor's Note

## The British Steel Collection

### Information from Michael Harrison

The British Steel Collection is a very significant business history archive dating from the mid 19<sup>th</sup> century to the late 20<sup>th</sup> century with the potential to become a key educational resource for both national and international academics, schools and the general public. Iron and steel-making have been central to the history and heritage of Middlesbrough for 175 years. At one time the largest iron manufacturing centre in the world, iron masters like Bolckow, Bell and Dorman remain central figures in the shaping of the town into the 21<sup>st</sup> century. Teesside steelworks were involved in supplying some of the world's premier civil engineering projects, including the Sydney Harbour Bridge, the Forth Road Bridge and the Tyne Bridge in Newcastle. Although the industry is much smaller today, an iron and steel making heritage infuses the people of the Tees Valley and has been fundamental in shaping local identity.

Many companies from this area were involved in the development of the industry over the years, including early public companies like Skinningrove Mines, Bolckow and Vaughan, Bell Brothers and the steel giant Dorman Long, which gradually acquired ownership of all other companies in the area by the late 1930s. These acquisitions by Dorman Long formed the core of British Steel Teesside and, as a result, a huge archive of material was amassed from numerous plants and works across the region dating back to the 1840s. Following the introduction of a new Information Management System in the 1990s, British Steel sought to deposit their archive with relevant local and national repositories. A large part of the collection was donated to Teesside Archives, the archives for the old Cleveland region, which is joint-funded by the local borough councils of Middlesbrough, Stockton, Hartlepool and Redcar & Cleveland.

However, although British Steel (and its successors up to the present owners, Corus) were willing to pass the

material on to the Archives, a shortage of storage space, manpower and the absence of adequate catalogue data from British Steel resulted in only part of the archive being transferred to Teesside Archives. The balance remained with British Steel, partly at their HQ and partly in storage in South Bank. For over a decade the archive has been unusable by researchers or interested members of the public because of the lack of sufficient knowledge as to what was in the collection or where it might be located. At the beginning of 2006, the British Steel Collection was distributed over three sites and little was known of either its volume or content.

Academics from the University of Teesside have long been interested in accessing this important archive and, by working together with the Teesside Archives, created The British Steel Archive Project – a three year plan to preserve the collection and make it available to all interested user groups through various means, including an electronic catalogue. Digital images will also be made available through a web portal. The University has gathered, and continues to gather, support from national, international and local interest and user groups, linked through their desire to access the archive. With the help of a grant from the University, a trainee archivist was employed for a short period in 2006 to map the contents of the Collection – which has now been transferred in its entirety to the Teesside Archives – to assess the scale of the deposit and, broadly, its content. Support from the Economic History Society was also received and a consultant from the Business Archives Council (Scotland) provided a plan for the most effective method of cataloguing and stabilising the collection for future generations.

In addition to consolidating the collection on one site, this process identified that the British Steel Collection comprises approximately 600 linear feet of material in its current state – a very substantial deposit in archives terms. It is expected to grow to double that size once preservation and repackaging work has been carried out. It has also begun to reveal the type of material in the collection, including a substantial body of company financial and legal records. These records, dating from the 1840s to the 1970s, give insight into the history of around 40 separate companies ranging across ironstone mining, iron making, steel making, fabrication and, of course, engineering, especially bridge building. Additionally, a large collection of business organisation records exists, including the minute books of the Cleveland Mineowners' Association and the Middlesbrough Exchange. Together this offers one of the largest, most comprehensive sets of business records in the country and undoubtedly the most exciting collection relating to the iron and steel industry in the UK. As such, this archive is an excellent source for economic and business historians from around the world, as the size of the collection makes it of more than just local interest. However, it is also of central importance to the history of Teesside, with stakeholders including the local Industrial Archaeology Society, local Family History Groups, MA and BA students at the University of Teesside and Durham and research students at the various universities of the North

East. Investigation by the University of Teesside and our consultant suggests that there is no similar collection available elsewhere in the country.

In addition to the expected business records, the collection is also very rich in visual material. There are thousands of photographs dating back over a century in printed, negative and glass negative forms. Pictures of the various works – inside and out – illustrate working conditions, industrial processes and practices of the iron and steel industry over the last century. There are also hundreds of images of engineering projects, including photographic records of the building of such bridges as the Forth Road Bridge, the Dundee (Tay) Road Bridge, Auckland Harbour Bridge and the iconic Sydney Harbour Bridge, as well as such local landmarks as the Tyne Bridge, Newcastle, and the Newport Bridge, Middlesbrough. These photographic records are supplemented by a large and important collection of plans of engineering works, and maps and plans of mines, steelworks and other locations in the Tees Valley. The engineering drawings in the collection include a substantial number relating to the building of the Sydney Harbour Bridge which will be of interest to historians, engineers, scientists and a wide range of non-specialists. This material is of international significance and it would be highly beneficial if it was more widely available to researchers and the public. Such images can also be made available more widely through the proposed web site which would support the project and will be suitable for educational packs to support SET subjects as well as history and geography classes.

The third key group of records in the collection are those relating to employees and employee relations. Often employee records are lost as they are seen as ephemeral to the company in comparison to the legal and financial documentation which ensures their institutional status. This collection contains many types of employee records dating back into the 19<sup>th</sup> century, especially pension related material. We consider these to be of significant interest to family historians, local historians and to the general public. These employment records are supported by a substantial body of material relating to working conditions – salaries, accident books, deduction records and welfare schemes. Again, such material could be utilised in teaching packs to demonstrate the changing experience of work over the last 150 years as well as providing evidence for academic and non-academic researchers interested in company welfare policy – for example in early twentieth century Middlesbrough, ironworkers and their employers funded the local voluntary hospitals. These records can be linked to other existing catalogued sources, such as hospital records and oral history archives, to create a more complete picture of working and social life in nineteenth and twentieth century Middlesbrough. There are also a great many share certificates in the collection which could be of use both to historians of business in Middlesbrough and those researching the spread of share ownership.

Overall this is a rich, complex and internationally significant archive which links the identity and heritage of the Tees Valley community into the global world of engineering, technology and business. The Teesside imprint on the landscape of Sydney, Auckland or the Forth is something of which the people of this region are rightly proud and opening up the archives of this industry to both the local community and international academia is thus a very worthwhile cause.

## John Wilkinson (1728–1880) Ironmaster

by Dr Stanley Raymond

This year is the bicentenary of the death of John Wilkinson and it is appropriate to consider the work of this man who, although not a civil engineer, played a significant part in the development of iron technology in the late 18<sup>th</sup> Century, paving the way for its use as a structural material.

John Wilkinson was born in 1728 in Little Clifton, near Workington, Cumberland, where his father Isaac was a small farmer and furnace keeper. When John was ten the family moved to Backbarrow in the Furness Peninsula, Lancashire where his father operated the Bare Sykes iron foundry. Isaac, described in old documents as a "pot founder" prospered here and was able to send John to the Dissenters School in Kendal where he studied mathematics and science under Dr. Caleb Rotherham.

John was then apprenticed to a Liverpool iron founder for five years. When he returned to the family in 1750, his father had moved to the nearby Wilson House in the village of Lindale. This was a substantial, well-built property with 10–15 acres of land. John worked here with his father and younger brother, William, making iron goods using charcoal to smelt the iron.

In 1753, Isaac took a lease on a charcoal furnace at Bersham, near Wrexham, and in 1756, John joined him there. John was married to Ann Maudesley in this year but she died in childbirth within the year. John sought work in Broseley in Coalbrookdale, home of the great West Midland iron factors. These were primarily using coke for smelting and John realised this was the way forward. In 1763, he married Mary Lee of Wroxeter who brought him sufficient capital to enable him to buy a Broseley blast furnace and colliery. He had meanwhile, with his, brother taken over the Bersham works from their father Isaac and remodelled it.

From now on John's tremendous dynamism began to show and over the next forty years or so, he was one of the main entrepreneurs of the industrial revolution. The historian, Herbert Heaton, writing in 1948, said John Wilkinson was "so iron mad that he built an iron barge, an iron bridge and an iron coffin (for himself), made a greatly improved borer for cannon and in 1776 he supplied Watt's engines with cylinders which did not err the thickness of an old shilling in diameter".

It was in 1774 that John Wilkinson took out what was probably his most important patent (no. 1063) for a "New method of casting and boring cannon". Cannon at this time were made by casting and were liable to explode due to the difficulty of avoiding blow holes in the casting process. Because of the better control possible by the use of Wilkinson's boring mill to bore the gun from the solid the government soon insisted that all naval ordnance be made by this process.

At this time, James Watt was developing his improved steam engines and in 1775, Wilkinson supplied Boulton and Watt with vastly more accurate bored cylinders. One of the first engines was bought by John and used to power the blowing engine at the Broseley forge. He then ordered a forge hammer from Boulton and Watt though this gave problems, which he and Watt did not resolve until 1783. Watt wrote in March of that year to John Smeaton describing the successful trial of a new forge engine for use

at Wilkinson's foundry at Bradley near Birmingham. Wilkinson now became a major innovator in the iron industry and while he was certainly "iron mad", he could also be termed "steam engine mad" for the many uses to which he put these machines.

His foundry at Bradley produced another innovation in 1787, an iron barge. People came from as far as London to witness the launch. The event was signalled by a salute from 32-pounders and the 70-foot barge, christened "Trial", slid into the Severn where she floated in perfect trim. Wilkinson wrote to one of his managers "Yesterday week my iron boat was launched. It answers all my expectations and has convinced the unbelievers who numbered 999 in 1,000. It will be a nine days wonder".

The Wilkinson's foundries and mines were mainly in Shropshire, Denbighshire and Staffordshire and John had a keen interest in transport between his various holdings. In particular in the 1770's the development of iron making industries at Broseley and Coalbrookdale focused attention on the need for a bridge over the Severn.

A group of leading industrialists, including Abraham Darby the Third, his brother, Samuel Darby and John Wilkinson met to discuss the provision of such a bridge. Thomas Pritchard (1723–1777), the bridge's architect, was also a partner in the venture and seems to have received little recognition for his role. He suggested an iron bridge and Wilkinson insisted that iron be used. The iron for the bridge was cast at Abraham Darby's foundry, he having 15 shares to John Wilkinson's 12 shares. The design for the bridge was for a structure 24 feet wide with an arch, just over 100ft. span and it was open to traffic on New Years Day 1781 at the site subsequently known as Ironbridge. It soon became an aesthetic symbol of technological accomplishment for the age and most historical accounts give credit to John Wilkinson for his enthusiasm in bringing it about.

The second half of the 18<sup>th</sup> century was a period of great turnpike and canal expansion and from 1770 onwards; John could be counted on to have an interest in both roads and canals in the West Midlands area. For example, in 1791 the Ellesmere Canal Company was founded to connect the Severn, Dee and Mersey. The general agent for the canal was Thomas Telford and he is on record of telling the story of his pride in being offered a ride to the first meeting in the Ironmaster's coach.

His work was not restricted to these islands. He acted as consultant in the Prussian smelting industry. He also worked in France with his brother, William, and their work at Le Creusot made a major contribution to the founding of industries at this centre.

John Wilkinson died aged 80 on 14<sup>th</sup> July 1808 at Bradley, near Ironbridge in Shropshire. He made it clear that he wished to be buried in an iron coffin. He had a number of iron coffins made for the purpose, several of which were dotted around the grounds of his Castlehead estate which he had bought some years previously in Lindale. He had directed that his body was to "be interred as privately as possible, without any parade or pomp" in his garden. Accordingly, the body was brought from Shropshire for burial at Castlehead, but instead of an iron coffin his executors chose a lead and iron coffin. It was carried to Lindale over the treacherous Morecambe Bay sands. The driver opted for this short cut, which was often used by travellers, but the heavy weight of the coffin caused the cart carrying it to become stranded in the sands close to Holme Island. It was retrieved the next day but when it did

arrive at Castlehead, it was found the iron coffins had not allowed room for the internal wooden coffin. A larger coffin was ordered from Bradley and, meanwhile, the body was temporarily buried in the garden on 26<sup>th</sup> July 1808 following a burial service in Lindale Chapel.

The new iron coffin arrived by sloop at Ulverston on 25<sup>th</sup> August 1808. It was taken to Castlehead where further difficulties arose, as there was insufficient depth of soil in the garden to permit the use of the new coffin. Ultimately, after a hole was blasted in the bedrock, the body of the iron master in its iron coffin was buried.

Wilkinson clearly did not intend to be forgotten. During his lifetime, he had cast a 40-foot high obelisk, which was placed over his burial site at Castlehead. The monument, an early example of box-casting and weighing 22 tons, bore the medallion portrait of the ironmaster and a glowing epitaph composed by the man himself.

John Wilkinson's extraordinary life meant that the saga continued. He had still not reached his final resting place. Wilkinson had by the time of his death no surviving children by his late wives, Ann and Mary. He had a mistress, a servant girl called Mary Ann Lewis, who bore him three children when he was in his seventies. They were baptised in Lindale church and in his will, he left Castlehead and his vast estates to his mistress and his three children. The will was contested and the legal costs were such that the Castlehead estates had to be sold to make provision for the children.

The new owners of the Castlehead estate did not take kindly to a coffin, iron or otherwise, being buried in the grounds. On the 16<sup>th</sup> August 1828, the coffin was removed and transported to Lindale church where it was re-interred in the vault, after a service conducted by the Rev. Anthony Barrow, the then priest. The box-casting monument was also moved and now stands as Wilkinson's memorial on the road to Grange over Sands in Lindale village.

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## **Pimlico London School Being Demolished**

by J R M Carr

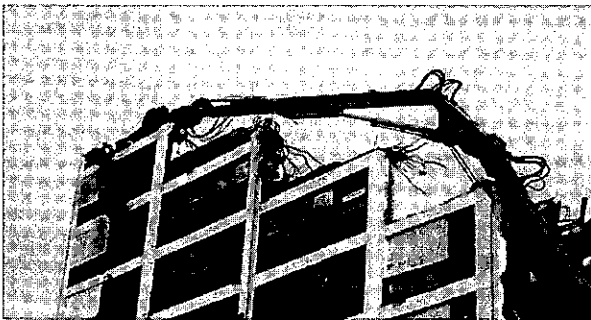
Despite several attempts at listing and vigorous protests from eminent architects the demolition of Pimlico School, Lupus Street, London SW1 is already underway. The school attracted great attention and had become famous even before it left the drawing board and in 1972 two years after opening it won a RIBA Award.

Destruction has started to the south along Chichester Street and the School's swimming pool has already gone. It is the intention to halt demolition when partially completed to allow the surviving part of the building to continue in use while a new school is being built. This has been designed by Architecture PLB. However some critics have described the new designs as bland and boring and the dispute over Pimlico school has been intensified by ideological overtones. The party favouring demolition has tried to tar all GLC buildings with the same brush and the School has been characterised as just another appalling example of theirs which should never have been built. The Twentieth Century Society put Pimlico School forward for listing four times but it was granted a Certificate of Immunity from Listing in 2003 and this is still in force. The building's architect John Bancroft is naturally upset.



Pimlico School, London SW1 © R J M Carr

When first opened the School's adventurous architecture was extolled in extravagant language but a few voices questioned whether the building was really suitable for a school – c'est magnifique mais ce n'est pas l'école. Metaphors such as Turreted Battleship, Ship in Dry Dock and Futuristic Aircraft Carrier abounded and references to naval architecture were commonplace. It was even described as an ancient monument of the future. The school is constructed at a level below the surrounding streets in order to minimise the impact on its environment. The sunken area around the school is utilised for sporting activities.



Demolition: a long-arm cruncher at work in London

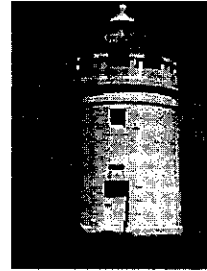
© R J M Carr

Designed round a main internal street the predominant materials are concrete and glass and the school is well provided with windows. The sculptural qualities of the roof are particularly noteworthy. It is very much a creation of its time now painfully out of fashion.

The demolition and replacement of a building is costly in terms of energy and the fact that now buildings generally are being destroyed after less than forty years is a matter of environmental concern. However for most of the Green Movement this fact seems to have escaped their attention.

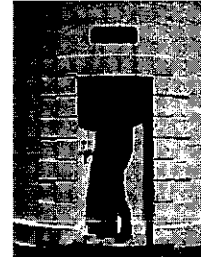
Young architects are currently talking in terms of their new buildings lasting perhaps fifteen years. Is this desirable? Sustainable buildings and adaptive re-use for those presently unsuitable should be a major consideration. Richard Rogers has had a policy of designing buildings whose internal layout can be altered to suit the changing needs of the client.

## To the Lighthouse – Japanese style by David Muir Wood



© David Muir Wood

Robert Louis Stevenson (*Kidnapped, Treasure Island, ...*) was a first cousin of my wife's grandfather. Destined to join his father's company he began studying Civil Engineering at Edinburgh University, but changed to Law and then dropped out in order to concentrate on writing. His father was one of a long line of Stevensons who specialised in design and construction of Scottish lighthouses.



© David Muir Wood

When Japan opened to the West in 1868 advice was sought from the Stevensons on lighthouse design and John Henry Brunton ('the father of Japanese lighthouses') designed and supervised the construction of 26 lighthouses most of which are still lit and about half of which feature in a list of the top 50 Japanese lighthouses.

When I first came to Japan in 1994 I visited Meiji Mura near Nagoya where buildings from the Meiji period have been re-erected (including the entrance hall of Frank Lloyd Wright's Imperial Hotel which survived the Tokyo earthquake of 1926). The lighthouse there is a French design, but beside it is a Stevenson lighthouse keeper's house from Sugushima.

When the wives of two colleagues proposed a visit to a major shrine we found that the lighthouse on Sugushima could be combined in the trip with a bit of careful planning of trains and ferries. Arriving on the island we were given directions by an old fisherman who was quite certain of the way, but not completely clear – a younger resident was more helpful. The narrow road wound between houses then became a concrete path and then steps and we found the lighthouse just below the ridge on a bluff looking out to the Pacific. A plaque notes that it was illuminated on 1 July 1873. The keeper's house may have gone but this vegetable patch is still being lovingly tended.

## Old Ordnance Survey Maps at New Scales

by Brian George

As a member of the Devon History Society particularly interested in the development of the turnpike road system in the very early nineteenth century I have been particularly interested in the recent publication of early Ordnance Survey one-inch-to-one-mile maps copied to the larger scale of 1/50,000 and published to match the extent of the Ordnance Survey Landranger series of today, together with the inclusion of the national grid.

Thus we have a *Timeline Historical Map 192* of Exeter and Sidmouth, which can be found on the bookshelves of many shops in Exeter, with the date 1809 headlined on the top left hand side of the cover map.

An authentic reproduction of the 1809 map at one-inch scale can be found in volume II of Harry Margary's book, *The Old Series Ordnance Survey*, published in 1977 at Lymne Castle in Kent. What seems quite clear to me is that the Timeline map is in fact a copy of a later edition than the original 1809 map for the following reasons:

Pennsylvania road through Stoke Woods is shown, yet it was not built until after the Tiverton Trust made provision in 1813.

The road from near Cowley Bridge alongside the river Exe towards Stoke Canon is shown but it was not built until the Exeter Turnpike Trust made provision in the early 1830s.

A road from south of Exminster to the turning to Powderham church (A379) is shown that was not shown on the original 1809 map.

The road from north of Broadclyst to Cullompton is shown (B3181) but this was not authorised until the Act of 1815.

The Honiton to Ilminster road is shown but the first coach did not run until 1813 and this road is not shown on the 1809 map.

The Pocombe bridge to Tedburn St Mary road is shown, but this was not built until 1824 and is not shown on the 1809 map.

All this is not dreadfully serious when one takes the map as a whole with its clarity at the larger scale, because the Bristol and Exeter Railway is not shown! However, I think that ICE Panel members should be made aware that the map now published is not a true 1809 map but that the enlargements have been made from a later edition.

A similar criticism regarding the Exminster diversion can be made of the Exeter and Exmouth 1809 map recently published by Cassini Publishing Limited, where four maps are shown, the first labelled 1809. Nevertheless, the updating of all these maps to 1/50,000 scale makes for fascinating comparison with the modern Landranger map. It may well be that somewhere on these maps there is a clause exonerating the publishers, but I have not found it.

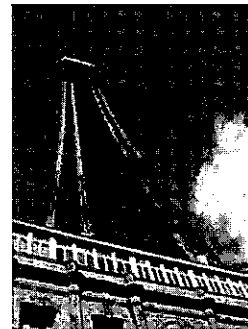
## Project INCH – best foot forward!

by Paul Dunkerley

Project INCH (Internet access to Civil engineering Heritage) has been reported on in previous issues. Project INCH has been financed by the ICE R&D Fund and Engineering Timelines, together with contributions in kind

by way of time from Engineering Timelines staff and also the PHEW Area Panel Member, Paul Dunkerley, who devised the Project to make information on his region's as-built heritage more easily accessible to ICE members and staff as well as to the general public via the website [www.engineering-timelines.com](http://www.engineering-timelines.com)

Phase 1 (Pilot Trial) was carried out in Lancashire during the winter 2005/6, involving the inspection, photography and updating of records for 45 'Individual Historical Engineering Works' (e.g. lighthouses, bridges, etc.) and en passant the inspecting, photographing and researching of some 22 'Extra Items' (structures that might or might not meet the exacting standards required for HEW classification). 'Snapshot in time' CDs were prepared and made available for ICE members and staff to use for educational or publicity purposes. Later, copies of the CDs were requested by the Lancashire Historic Environment Records Officer, to inform the statutory planning process in respect of items of civil engineering heritage.



Blackpool Tower, Lancashire © Anna J Dunkerley

Phase 2 was carried out in Cumbria and the remaining parts of Lancashire involving 120 items in total, including several 'Route HEWs' (e.g. railways, canals, etc.), which were covered by separate items for individual features which on their own might not qualify for HEW classification. Field work for this Phase was completed in February 2008, and the slow methodical process of checking, cross-referencing, and building the items into the website's database is progressing well. A major feature of this Phase was the resulting award of HEW classification to 15 new items.



Arten Gill Viaduct, Cumbria © Paul Dunkerley

To date, some data has been used for the publication of magazine articles, tourist information leaflets, a PowerPoint presentation, an article in ICE's *Innovation & Research Focus*, as well as articles in PHEW and ICE North West publications.

A third Phase covering the City of Manchester and the 6 eastern unitary authorities within the former metropolitan county of Greater Manchester was approved in July 2008. It is hoped that field work on this Phase will commence in September 2008.

## Liverpool 'Firsts' (3<sup>rd</sup> Edition)

by Paul Dunkerley

A third edition of this popular information leaflet has just been published, courtesy of sponsorship by Ramboll Whitbybird Limited, Edmund Nuttall Limited, Laing O'Rourke and ICE North West. Copies are now available within Merseyside at the three booking offices of Mersey Ferries, at the three tourist information centres operated by Liverpool City Council, and at the Merseyside Maritime Museum.

Over 1,500 copies are also being made available to ICE North West staff and members for careers evenings and other such events at schools in the Liverpool area. An extended version of this leaflet is also available as a free PDF Download from the website [www.industrialpowerhouse.co.uk](http://www.industrialpowerhouse.co.uk)

### Book News

***Brunel's Hidden Kingdom* by Geoffrey Tudor, compiled by Helen Hillard, Creative Media Publishing, Paignton, 2007 ISBN 0954607120. Illus. 160 pp. £19.50.**

In the *Devon Gardens Trust Newsletter*, Spring 2008, Claire Greener notes that this is a lavishly illustrated volume with plans, copies of pages from Brunel's own Garden Book and photographs historical and modern. The large font and flowing text makes it an easy read, and there are two time-lines which put the creation of Watcombe into context with the rest of Brunel's life and aid the understanding of the history of the park since its creation. Brunel was not content to redesign an existing estate, but as with many of his ideas broke new ground— in this case literally, creating a landscape park fit to house an elaborate mansion from land in three parishes, owned by ten different owners.

Geoffrey Tudor demonstrates there was a different side to the engineer, someone who was fascinated with trees, making annual measurements of their growth. Most people would have built a house and then designed a garden. He never lived to see more than the foundations of the house, which was built some years after his death. But Brunel did build to last. The paths he created, lined each side with white pebbles, still exist. Many of the trees planted by Alexander Forsyth under the direction of Brunel also survive, but sadly Watcombe as an estate was broken up and partly built over. Tudor gives an insight into Brunel the man, the creation and destruction of a landscape park and ends with a plea for further restoration of a unique site.

By Brian George

***The Windmills of Thomas Hennell*, by Alan Stoyel. Landmark Countryside Collection, Ashbourne, 2006. ISBN 1843062240**

This delightful A4 size paperback is a fascinating study of the technology of windmills through the eyes of an artist, as annotated in the notes on each illustration, which have been prepared by Alan Stoyel with the assistance of many luminaries from the modern world of molinology such as Vincent Pargeter, Mildrer Cookson, Roy Gregory, and several others.

Thomas Hennell was born in 1903 and studied art at the Polytechnic School of Art in London. Whilst teaching in Bath between 1928 and 1932, he developed a passionate interest in country crafts, becoming a close friend of Rex Wailes, perhaps England's most celebrated expert on

windmills. He was an official war artist during World War 2, but in 1945 he was captured by Indonesian terrorists in Java and disappeared without trace. The art works in this book are part of a private collection and were reproduced by kind permission of his daughter.

Each page of the book has an illustration by Hennell and notes by Stoyel. The first chapter deals with the windmill in the landscape, from complete mills such as Chillenden Post Mill in Kent to the derelict stumps of tower mills in County Waterford, Ireland. It explains the various types of windmills and their regional differences. The second chapter deals with the harnessing of the wind. It shows the details of sails, their types, mounting and adjustment, as well as the fantails that keep the sails pointing into the wind. The illustrations of striking linkage are particularly good, helping the reader understand how semi-automatic sails operated. The third chapter deals with the interior of post mills, some of which disappeared years ago. The fourth chapter illustrates the interiors of tower mills and smock mills, which are essentially identical in principle. This chapter includes an illustration of a cap-centring frame in a Fylde tower mill – once a common feature of those mills, though sadly very rarely extant nowadays – this makes this book a valuable tool for anyone trying to understand the regional peculiarity of these mills. The fifth chapter is about millstones, tentering gear and governors, whilst the sixth chapter covers sack hoists. Sadly, other machines, tools and equipment are discussed only briefly in the seventh and eighth chapters. There is a glossary of terms (an essential accompaniment to such a technical work) and a good select biography.

Overall, this is an excellent publication which is a 'must' for anyone with an interest in windmills, or for anyone who would like to learn more about windmills in an easily digestible manner with illustrations and full explanatory texts.

By Paul Dunkerley

### HEWs in the News

by Brian George

The *Bristol Evening Post* 26 January carried a two page article with photographs of car parking at Temple Meads station, Bristol, showing how the concourse is blocked by parked cars and detailing the difficulties of people arriving to be set down at the station because of this congestion. One has to enter the concourse to move to the half of Brunel's historic train shed that is used for 372 longer term car parking spaces. The other half of Brunel's shed is used for evening functions and in June 2007 the South West Association of the Institution held their annual dinner when they hosted President Quentin Leiper.

Now the intention is to ban car parked cars in the concourse and build a multi-storey car park with 522 spaces in the adjacent Temple Quay for car parking. This will give immediate access from the Temple Circus roundabout. The concourse will then be restricted to public transport only. Some of the money released by the sale of adjacent land by Network Rail will help fund major improvements to the station itself including new ticket booths and a new entrance.

Archaeologists working on the site of the £25 million Great Western Dockyard development next to the SS Great Britain have discovered what is thought to be the world's

first substantial use of Portland cement. The *Bristol Evening Post* 4 April tells us that Bristol University's Dr Mark Horton has uncovered a continuous slab of concrete, up to 400mm thick, on the spot where the Brunel Institute is due to be built. The institute is a new archive, library and education centre for the SS Great Britain Trust, with 145 one and two bed apartments above. The invention of Portland cement was in 1824 and until this find it was thought that the first use of Portland cement was in 1843 when it was first marketed, but Brunel's work predates this by four years.

A £640,000 grant has been given to the SS Great Britain Trust for a project to highlight Brunel's major contribution to the transformation of Bristol and the South West. The cash is the sixth allocation to the trust by the Heritage Lottery Fund, bringing the total to £10 million.

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*Rail 7-20 May* notes that in Chard, Somerset, more than two-thirds of local residents say they would use Chard junction station if it reopens. Likely population growth, to 20,000 over the next few years, makes Chard one of the most important centres between Salisbury and Exeter. A Great Western branch line from Taunton terminated here alongside the Southern Railway line, the name junction arising originally as this was a short branch from the LSWR to Chard, but the route from Taunton to the junction station closed in 1962. There are presently eleven stations between Exeter and Salisbury, making this a slow route from Exeter to London, but invaluable for people in Somerset, Northern Dorset and Wiltshire as the parallel Exeter to Reading line for Paddington has few stops. There is the intention to double the frequency of trains between Exeter and Salisbury by introducing a passing loop at Axminster.

*Rail 7-20 May* contained an appeal for preservationists to mobilise to save the heritage structures of Folkestone Harbour (HEW 1859), the viaduct and swing bridge. They will be demolished despite Shepway Council itself acknowledging that the structures are a 'unique piece of engineering'. The branch railway from the London to Dover railway to the harbour was built as a tramway as early as 1843 and converted to railway in 1849 with the extension of an 11 arch viaduct and swing bridge to a spit of land where the station was built.

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While trains have long disappeared from Bourton-on-the-Water, the Gloucestershire Warwickshire Railway has decided to go ahead with the acquisition of the former Cheltenham-Kingham line station building for eventual re-erection at Broadway. *Rail 18 June-1 July* notes that disused since October 1962, it is threatened with demolition because the local authority wants to redevelop the site.

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The major challenge of building and navigating the higher ground of John Rennie's Kennet and Avon Canal was that many locks were needed to achieve this objective, and in turn, water had to be lifted to replace that lost when gates were opened regularly. Hence there arose the requirement for two pumping stations; one at Crofton near Newbury and the other at Claverton near Bath (HEW 1076) (ST 791 644). *Woodworking July* describes this latter station, some 5 miles from Bath off the A36 trunk road to Warminster, and sited alongside the river Avon at Claverton, which has operated since 1813. It ran until 1952, but after World War

II there had been little maintenance for many years and there was concern about the gear wheel teeth, which were very worn.

The canal engineer had restricted running to eight hours a day when the pump could be properly supervised and by then it was cheaper to use electric pumps and so the old pumping station slipped into oblivion. It was largely forgotten until 1969 when a band of volunteers rallied support, raised funds and started restoration. Peter Dunn, a real life engineer, who chairs the Bath and Bristol branch of the Kennet and Avon Canal Trust, is one of the most enthusiastic motivators and is currently in charge of the work using many original Rennie dated wood tools for the giant 17ft 8in diameter wood and metal wheel which is 24ft wide generating 24hp to raise water 48ft from river to canal.

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The *May Head Office Bulletin* of the Inland Waterways Association notes that on the Bow Back Rivers the Prescott Lock (*Newsletter* No.117) was due to receive the lower radial gates on 10 May, so that the 'new maintained level' can be tried out by the end of June. Owing to cost increases here BW has put back plans to fully restore the City Mill Lock. Current plans envisage the Olympic Canoe Course to be located on the show ground site above Waltham Abbey Lock, using the head of water above Waltham Lock. If this happens, there should be an opportunity for earth-moving to take place by water to facilitate construction of the course.

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£500,000 is being spent along the Paddington Arm of the Grand Union Canal, which aims to create a landmark site with a strong community and educational focus. The Westbourne Green Canalside Open Space, which stretches from Harrow Road to St Mary Magdalene's Church, will include a network of cycle and pedestrian paths to improve access and links along the canal. The site will also host an interactive Green Campus to provide a range of environmental learning activities including a 'human sundial', outdoor classroom opportunities, a butterfly garden and a mooring point for an educational barge.

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The Manchester, Bolton and Bury Canal was built under an Act of 1791 with the connection to the river Irwell constructed in 1808. Originally used to transport coal and cotton to the many mines and mills of the area, the canal adapted to carry passengers, post and other supplies. The canal has been closed to traffic since a major breach in 1936 and various sections were drained during the Second World War. It was finally abandoned in 1961; however the dream of its eventual revival was kept alive by the Manchester, Bolton & Bury Canal Society, formed in 1987.

The *June Head Office Bulletin* of the IWA noted that on 9 May, British Waterways' contractor, Volker Stein, broke through the end of a new 70-metre canal tunnel at Salford. The tunnel, under the Inner Relief Road, is to be named the 'Margaret Fletcher Tunnel' after the Canal Society's late former chairman, who was also the wife of John Fletcher, the IWA National Chairman, who is also now chairman of the Society. The project is the first, and most challenging, phase in the restoration of the 15.2-mile long canal, which is one of the last major waterways in Greater Manchester to be restored. The £5.9 million project led by British Waterways represents the focal point for the £600



million regeneration of this part of Salford. The canal between the River Irwell and Oldfield Road is expected to be complete by the late summer 2008, but construction work alongside the canal route means that the canal will not be opened to boats straight away.

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The *Hub*, Summer edition South West, has noted that another section of the Exe Estuary Trail from Exmouth to Lypstone was officially opened on 29 February and immediately enjoyed by thousands the following day at a fun event organised by the Devon County Council. The traffic free path has been built, at a cost of £2.2 million, alongside the railway branch line, with a long stretch of boardwalk over marshy ground and raised sections providing excellent views over the Exe estuary. Planning permissions have now been obtained to join the route through Lypstone, Exton and Topsham to the existing route into Exeter and down the Exeter Ship Canal to Turf Lock. A talk on the project was given by Paul Ewings and Nick Bott to the local branch of the Institution of Civil Engineers at Exeter on 29 May.

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Another item of interest in *Hub* was that having reported in the last edition that the most popular route on the Network was being considered for development to accommodate a Bus Rapid Transit system, in March, Bristol City Council announced that plans to utilise the Bristol and Bath Railway Path for the scheme would be shelved for the moment. Sustrans welcomed the news but is anxious to ensure that the plan is shelved indefinitely by increasing access to the path to enable very high levels of walking and cycling are achieved.

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A visit to Yarmouth Pier, Isle of Wight, in late June revealed that work to renew 54 piles along the walkway was carried out in 2008 assisted by a major donation from the Heritage Lottery Fund. This pier was built in 1876 as a deep water terminus for the London and South Western Railway Company paddle steamers which connected Southampton to the island's coastal towns such as Ryde, Sandown, Shanklin, Ventnor, Cowes and Yarmouth. Since 1951, the pier has been used by excursion boats, anglers and promenaders. This is the last all-wooden operational pier in the British Isles, according to a notice on the pier.

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The *Berwick Advertiser* 10 July writes that a new leaflet will overcome the knowledge gap for tourists wishing to visit the Union Chain Bridge over the river Tweed. It has been designed by Bristol-based bridge historian Adrian Andrews and has been created in light of the closure of the historic border crossing (HEW 143) last summer. There has been other input from Gordon Miller of the Dower House, Paxton, who has spent years researching the bridge and whose paper was published in *Civil Engineering* May 2006. Heather Robson, who will distribute this leaflet, said that there are many bridges that simply would not have been built if Captain Samuel Brown had not designed the Chain Bridge.

The launch of the leaflet coincided with a visit by Professor Roland Paxton and 40 retired engineers who came to the bridge as part of a tour of the Tweed bridges. The group started at Kelso before reaching Coldstream Bridge and

Marriage House and moving on to Union Bridge at Horncliffe. They then toured Berwick's three bridges, Blackadder, Allanton, Pease Bay, Eyemouth and Cove Harbour.

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The *Daily Telegraph* 15 July notes the Tower Bridge (HEW 31) is to undergo a £4 million, four year facelift in which its paintwork will be stripped and replaced with 22,000 litres of white and blue paint.

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The *Hereford Times* 10 July says that repair work on one of Herefordshire's oldest bridges has been announced. Mordiford Bridge will be closed while the county council's contractors, Amey Wye Valley, carry out work to rebuild damaged parapets. The bridge is a scheduled ancient monument and permission has been obtained from English Heritage to carry out the work which involves taking down the upstream parapet and rebuilding it on four Sundays in August.

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Readers of this *Newsletter* are asked, whenever they read of something which they think might deserve mention here, to send it, or a copy, by about the week before the deadline, to:

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**8 Clevedon Close**  
**EXETER**  
**Devon**  
**EX4 6HQ**

## Editor's Note

May I repeat my regular appeal for suitable material for inclusion. Contributions, which are both informative and appeal for further information, or publicise forthcoming conferences or the availability of recent books, etc., are particularly welcome. Contributions should be sent to the Editor as soon as possible after receipt of this *Newsletter*.

Contributions on disk are acceptable (Word format). A printed copy will also be required. Diagrams or photographs and/or illustrations may be included.

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