



THE INTERNATIONAL
COMMITTEE FOR THE
CONSERVATION
OF THE INDUSTRIAL
HERITAGE

www.mnactec.com/ticcih



A Soviet space capsule conserved in the museum at Kyiv-Polytechnical University in the Ukraine.

Photo: Linda Norris

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Inside:

What are the real benefits of industrial tourism?

■ The sectors and sub-sectors into which we habitually organise our ideas about industrial activity rarely find room for different systems of production. This is particularly notable in the large but overflowing category called manufacturing. Here we find machine builders who worked like medieval craft workshops – each finished product a unique piece – alongside mass-producers of watches, cars or armaments that used rationalised techniques with a high division of labour to manufacture standardised, interchangeable parts.

This discrepancy carries over into our heritage inventories and industrial museums, which seem to value the experience of 20th century mass-production and its surviving testimonies in the building record in inverse proportion to their historical significance.

So the survival in Spain of a complete ‘time-capsule’ factory devoted to Fordist manufacturing of farm machinery is especially interesting. J Trepas started making small mechanical reapers for Spanish farmers in 1919 in his foundry in the market-town of Tàrraga, 115 km inland from Barcelona. In 1936 he moved into a purpose-built factory on the edge of town. Production began with two cupola furnaces at one end of the long rectangular shed from which molten iron was tipped onto a casting floor. From here the complete process of making and assembling the metal and wooden parts of the reapers was laid out through nineteen identical shops. One was occupied by the carpenters - really sculptors - of the wooden patterns for casting parts. Another held machine tools to detail and refine the castings. A simple conveyor line facilitated the final assemblage of the reapers, which were then dispatched to the nearby railway station.

The mechanical reaper is an iconic product in the story of mass-production. Cyrus McCormick started building his eponymous machines in Chicago using ideas of rational production flow in 1849, changing the way manufacturing was organised. In its heyday after the Civil War Trepas de Tàrraga had depots all over Spain, from which they fed the flood that swept millions from the impoverished countryside up into the factories of Bilbao, Barcelona and later Madrid. Trepas’s reapers, harvesters, binders and other farm machinery contributed to the industrialisation and de-manning of what in 1960 was still an overwhelmingly agricultural economy.

What makes give this interesting story a unique twist is that when, in 1999, the heirs of the founder finally accepted the inevitable and closed the doors, they did little else: the factory, machinery, tools, stocks of iron ingots and timber and rows of finished reapers were left to gather dust. More dust covered the order books, ledgers and payrolls in the office – all the documentation that is usually first to be thrown on the fire in the sad circumstances of collapse and closure. In 2007, the factory was transferred into public ownership and the local council began cataloguing and documenting the contents and pondering what final form the future museum should take.

In the *museización* (is there an English equivalent of this useful Spanish verb?) of ‘time-capsule’ sites, priority is usually given to the scrupulous conservation for visitors of their particular authenticity. In this case, close behind comes the infrequent opportunity to exploit this outstandingly original site to present the system of manufacturing and the experience of work which distinguishes the industry of the twentieth century. If TICCIH and ICOM ever thrash out a ‘global strategy’ for the interpretation of industry, it will include far fewer textile museums and many more historic car factories. The museological project for Tàrraga will put rational production at the centre of its narrative and go a small way to rebalance the picture.

Opinion

James Douet
TICCIH Bulletin Editor

Industrial museums disregard mass-production

■ 'Reusing the Industrial Past'

TICCIH's first joint conference with ICOHTEC (the International Committee for the History of Technology) and the international association of labour museums, Worklab is in Finland next month (10-15 August 2010). There will be over 70 sessions with almost 270 papers; the full programme can be read at www.tampere.fi/industrialpast2010/. The conference venues will be the University of Tampere and the old Finlayson factory area by the Tammerkoski rapids in the centre of Tampere.

The opening Kranzberg lecture will be given by Professor Håkon With Anderssen (NTNU, Norway) and there will be keynote addresses by TICCIH president, Professor Patrick E. Martin, and Dr. Anna Storm (KTH, Sweden), and Professor Pertti Haapala will give his presentation before the excursions to the local industrial heritage. The post-conference tour will visit the Verla Mill, on the UNESCO World Heritage List.

The TICCIH section for hydroelectricity and electrochemical industry will have a meeting on Wednesday 11 August as will the Textiles Section (see below).

■ TICCIH Textile Section in Tampere

Following the meeting in Sedan in 2007 it has been suggested that those members of TICCIH who have an interest in textile mills could meet on Friday August 13th. This will be a short meeting to sketch out next steps, if any, regarding such matters as the Comparative Study. Our colleagues in the TICCIH specialist section for

hydroelectricity and the electrochemical industry will have met two days before and already have made a number of innovations from which we can learn.

The venue is the Finlayson Cotton Mill, founded in 1828 in the city of Tampere, which exploited water falls to power cotton mills, and later linen, wool and paper mills and engineering shops. This urban textile landscape and centre for international interchange of technology offers many good examples of adaptive re-use. www.history.tampere.fi/rapids/index4.htm. Those who are not registered for Tampere may be assured that the Section hopes in the future to have another full meeting respecting the textile industry. Mark Watson

■ Web page update

Social networks, RSS feeds, Twitter, Google ads ...the TICCIH web page could include some or all of these, and more. The Board would be delighted to hear from any member who could advise on the most useful additions that would make our site more functional, visible and perhaps even profitable.

■ Research quest

Tristan Goodley is searching vainly for an image of the French coal mining engineer and palaeontologist Jacques Triger (1801-1867). Triger developed what was originally known as the Triger mining process in 1839 but would more commonly be recognised as caisson mining. Triger's caisson allowed miners to dig through waterlogged soil to a seam of coal beneath by pressurising the caisson so water could not enter. One of Triger's specific innovations was a surface-

placed pressure box or 'air-lock' for workers to enter and exit the pressurised tube below. Caissons were later used in the construction of bridge piers supporting structures like the Brooklyn Bridge. It was during construction of such structures that decompression sickness first became recognised by physiologists.
Tristan.Goodley@darlowsmithson.com

[Editor's note: the Editor's note in the previous issue warning that the Brooklyn Bridge was scheduled to be demolished has to be corrected. Thanks to Sven Olof Ahlberg for pointing out the obvious April's Fool's notice.]

■ Wikipedia

A number of TICCIH members contribute to Wikipedia, in its various languages, but many of the entries relevant to our field could be made both more helpful and up to date. Not least among them is the English language entry for *industrialisation*, which has little historical information and a tone set by the somewhat discredited Washington consensus which advises industrialising countries to abandon all import restrictions, with little justification from historical experience. For novices, the process is simple and quite invigorating, with clear instructions for editing the text and guidelines for content and tone. Have a go!

■ Thanks to all the contributors. Photographs are by the authors unless stated otherwise.

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TICCIH is the world organisation for industrial archaeology, promoting conservation, research, recording and education in all aspects of industrial heritage. It holds a triennial conference and organises interim conferences on particular themes. Individual membership is £20, corporate membership £40, and student membership £10. Payment to TICCIH, Lloyds TSB Bank plc, 27 Fore Street, Redruth, Cornwall TR15 2BJ, UK; Account No: 1351659, Bank Sort Code: 30 97 00.

There is an on-line membership form on the web page.

The TICCIH Bulletin welcomes news, comment and (shortish) articles from anyone who has something they want to say related to our field. The Bulletin is the only international newsletter dedicated to industrial archaeology and the conservation of the heritage of industrialisation. The TICCIH Bulletin is published four times a year and is sent to all members. If you have not received an issue, please contact the editor for a replacement. Back issues can be downloaded as a pdf file from the TICCIH web site.

Opinions expressed in the Bulletin are the authors', and do not necessarily reflect those of TICCIH.

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Industrial tourism is an almost unknown sector in terms of its overall scale, its social composition and the forms in which it is manifested. And nothing leads one to suppose that this lack of information can be bridged in the near future.

This shortage of data becomes all the more serious when one considers that numbers of tourists, and positive variations in these numbers, represent a raw indicator, but a meaningful one, for evaluating the effects of policies aimed at defending and promoting the industrial heritage. The difficulty in estimating visitor numbers deprives us of a crucial parameter for assessing the effectiveness of the investments made.

The considerations that follow regarding industrial tourism in Italy must necessarily restrict themselves to identifying analytically their main components, and to documenting the general trends that can be reconstructed in summary form by the few data available.

In a very schematic form, we can identify four *products* referring to industrial tourism: museums, active businesses, the disused industrial legacy and the post-industrial landscape.

The first target relates to science and technology museums and industrial museums devoted to a specific manufacturing sector (mining museums, iron and steel museums, museums of energy etc) or to a specific product (automobile museums, naval museums, textile museums etc). Together, these represent a very distinguishable sector of the panorama of museums in Italy: the Italian Touring Club guide book on *Industrial Tourism in Italy* (2nd ed., 2008) offers a wide-ranging survey of existing museums and company archives, but does not provide any aggregate figures for visitor numbers. A *Eurispes* study of Italy's museums (2010) suggests that the economic crisis between 2008 and 2009 led to a marked decline both in terms of revenue (tickets down 7.5%) and visitors. However, there are also reassuring signs of a movement bucking this trend as regards industrial museums: in 2009 the *Città della Scienza*, in Naples, saw a 17.5% increase in visitors compared with the previous year. The Montemartini former thermo-electric power station (Rome), which boldly exhibits, side by side, turbines and archeological finds from Rome's collections, has seen a steady increase in visitor numbers year after year (24,800 in 2008, 32,500 in 2009, and 15,500 in the first four months of this year). Visitors to the *Centro Italiano della Cultura del Carbone* (CICC, the Italian Center for Coal Culture), which opened in 2006 in buildings at the Serbariu Mine in Carbonia, rose from 11,800 to 14,400 between 2007 and 2009. From these few, sporadic examples, it would seem that science and industry museums are less badly-hit by the difficulties currently faced by traditional museums.

Tourism geared toward *businesses* is a recent phenomenon in Italy. It first came into being at

Varieties of Industrial Tourism in Italy

Professor Massimo Preite
Italian National Representative

the instigation of individual firms, which decided to periodically open their plants to the public, in the belief that their company image could benefit greatly from showing those production processes and products which are the pride of the firm, and clear proof of their competitiveness.

Later on, the initiative spread from individual firms to the industrial district which the firm belonged to. Accordingly, business tourism became a powerful local marketing tool, used by Chambers of Commerce and local authorities to promote the local economy, advancing awareness of their system of businesses. The most significant initiatives are found in parts of northern Italy: the *Industrial Tourism in Turin* project, sponsored by the Chamber of Commerce, with the participation of auto-makers to promote the sector of autos and car design; also, Turin has won the right to host the third edition of the European Congress on Industrial Tourism, an event devised by France's Union of Chambers of Commerce (ACFCI) to make a major contribution to the professionalization of this new tourism product;

- the *Nuove Vie di Porto Marghera* organized by VEGA (Venice Gateway for Science and Technology): this project offers visitors no fewer than 14 guided routes along an original assemblage covering research and innovative technologies, the industrial heritage, and urban transformations, with the aim of introducing participants to the history and future of one of Europe's largest industrial areas (over 4,000 visitors in 2009, half of them students);
- *Fabbriche aperte* is an initiative sponsored by Vicenza Province allowing tourists to visit 42 firms in 13 different manufacturing sectors, across 19 municipal areas in the province of Vicenza.

The target of *industrial heritage tourism* is different from that of the previous tourism sector. The destinations of these visitors are industrial sites which have ceased production. The overall size of this tourism remains hard to determine: numbers of visitors can only be estimated at individual sites on the occasion of temporary events such as shows, exhibitions etc. During 2008, Turin's Officine Grandi Riparazioni (OGR) hosted a major exhibition entitled *Torino 011 Biografia di una città* (Turin 011, Biography of a City) which, timed to

coincide with the World Architects' Congress, offered a panoramic view of the urban transformations in the previous 25 years (scoring great success with the public). Venice's Arsenale never fails to attract large crowds of visitors with its Biennale show, housed inside its buildings. In these two cases, the appeal of the sites is determined by temporary reuse of the spaces, and public accessibility is strictly connected to the duration of the event. By contrast, when part of the built heritage is restored and adapted for a new, permanent end use, tourist numbers are diluted among a broader, general public, in which it is hard to distinguish industrial tourists. Indeed, how could we identify these in the crowds of people who enter the Lingotto (Turin) every day, or among the consumers who throng to the nearby fine food store



Nuove Vie of Porto Marghera
photo by Foscarina Porchia



Miniera di Ravi. Parco Colline Metallifere
photo by Massimo Preite

Industrial heritage tourism

(Eataly) inside the old Carpano vermouth distillery?

Finally, we have to consider the tourism interested in the post-industrial landscape, involving a category of visitors with a variety of motivations: the disused industrial heritage as well as the environment, productive systems, and infrastructure networks (canals, railways etc), factories and also workers' housing. Destinations in Italy for this kind of tourism are abandoned mine-workings, especially in Sardinia and Tuscany, for the protection and promotion of which new types of "parks" have been set up (although, unfortunately, owing to the squeeze in state funding, they are at serious risk of closure). In this case, too, it is very hard to estimate visitor numbers. The *Amiata Mining Park* boasts exceptional sites in terms of the variety of metal-working sites surviving above-ground (some already decontaminated), but at present there is no organized form of tourist access. The *Colline Metallifere Mining Park* offers very many remains of previous mine-working and metal production (more than 80 sites listed), but very few can be visited at present (the Ravi

Marchi mine, the former Ilva plant in Follonica). In the Geomining Park of Sardinia, there are as many as 8 mining areas, but only the Montevecchio mine organizes visits, by prior booking. Finally, the *Archeomining Park of S. Silvestro*, opened in 1996, is the only such park to offer an efficient service for visitors: between 2005 and 2008 visitors rose from 17,300 to 27,400.

A few, brief conclusions. Overall, industrial tourism is highly heterogeneous, and its progress varies depending on the various kinds of product. *Industrial museums* are consolidating their target public, and seem to be performing better under the economic recession than traditional museums. *Company tourism* is a very promising sector, and so far has given encouraging signs of growth. The *industrial heritage* will be increasingly less able to rely on industrial tourists with a one-dimensional profile. In order to attract visitors, it will increasingly have to come to terms with individuals motivated by composite interests: a tourist to Venice's Arsenale is not only looking for industrial heritage but also "contemporary art", a tourist visiting the Montemartini power

station (Rome) is also interested in "archaeology", and visitors to Eataly (Turin) also want "fine food".

An evaluation of mining and industrial parks appears more complex. First, there are very real obstacles to the influx of tourists, owing to the preliminary legal requirements of removing harmful materials and making sites safe: current legislation, devised for mines still in operation, must be brought up to date so as to promote accessibility for tourism. Another difficulty is the fact that while local authorities, which have often taken on responsibility for developing sites, have shown an ability to locate funding and carry out projects, they have not revealed a comparable ability to promote and manage actual tourism. Finally, we must not forget that, while tourists are very willing to make repeat visits to an art gallery or a Renaissance church, this is less true in the case of an open-air mining museum which continues to display itself in a somewhat static way. Careful scheduling of performances and events, and an ever-changing range of cultural initiatives, is an essential condition for encouraging visitors to return.

Industrious East is formally a Regional Route of ERIH, the European Route of Industrial Heritage which links industrial heritage sites across Europe. Developed from 1999 using EC Interreg funding, ERIH became an independent foundation in 2009. The 'Industrious East' route comprises the geographical region of the east of England embracing the counties of Essex, Suffolk, Norfolk, Cambridgeshire, Bedfordshire and Hertfordshire. Within this area, Industrious East has implemented a range of local initiatives in order to encourage industrial heritage tourism.

The east of England is singularly lacking in the resources of coal, iron ore and non-ferrous metals that encouraged the development of heavy industry in the Industrial Revolution. On the other hand, it was always rich in primary resources such as agricultural land and fish from coastal seas and at various periods of its history responded to economic circumstances by developing surprisingly successful and resilient industries. Although historically the textile industry was widely dispersed in the UK during the medieval and early modern period the east of England was one of the three main centres. The wealthy churches and timber framed buildings of Essex and Suffolk demonstrate the industry's success. The woollen cloth industry faded as markets slumped during the early Industrial Revolution but the rising price of corn encouraged the growth of agriculture. By the end of the eighteenth century the region needed to import coal and iron to support its small agricultural implement makers and metal workshops. The main period of industrial

The Industrious East of England

David Morgans

Industrious East Regional Coordinator, Historic Environment Branch, Essex County Council

growth in the region was initiated with the arrival of the railways from 1836 through to the end of the nineteenth century. Across the region entrepreneurs responded by using the railways to procure raw materials and to ship finished products. This activity generated a late awakening of market towns some of which developed heavy engineering industries and specialist trades such as electrical engineering in Chelmsford or the motor industry in Luton. The textile industry was transformed as Courtaulds developed refinements in silk manufacture leading eventually to the development of synthetic fibres which established the company's reputation worldwide.

Although the region was not at the forefront or a centre of the Industrial Revolution it could nevertheless offer evidence of Industrial Revolution experiences and developments. From the 1970's onwards, successive periods of industrial consolidation and closures had stripped much of this industry bare. In spite of redevelopment of many important sites, industrial museums such as the Paper Trail and Leiston Long Shop remain to tell the story. These and others representing the wide

picture of industrial employment form the basis for the Industrious East Regional Route. Buildings, machines and interpretation are supplemented by strong community memories and stories of past achievements.

The name arose through a branding exercise with external consultants, suggesting a focus on individuals rather than technology. It is "industrious" not industrial". There were two strategic reasons for this. Firstly, the route had to distinguish itself in some way from the individual sites and offer added value. But secondly, there was a need to make a generational leap and engage new audiences in industrial heritage. Industrial museums already connected with an informed and knowledgeable audience mainly over 50 but this constituted a small part of the possible visitor market. The main audience is seen as "visiting friends and relatives" (VFR) and the name suggests industrial heritage through human stories, working lives and previous generations of industrious individuals. It also connects to the wide interest in exploring family history.

Industrious East is one of the most intensively developed of the ERIH Regional Routes in the UK (there are three others in South Wales, West Midlands and North West England) and within the ERIH project as a whole. Industrious East works on several levels including dialogue with individual member sites, providing advice on development, and on a group level via conferences and meetings. A number of

Continued on back page

Managing American Industrial Heritage

Dr. Elizabeth Hartnell

Practices in industrial heritage and interpretation vary widely across the world depending on historical period, ownership, and location. Through examination and comparison of the two most substantial US heavy ordnance facilities from the 1800s, this article highlights the benefits of incorporating archaeological analysis in interpretation and the relationship between agencies and the character of their interpretation programs. The West Point Foundry in Cold Spring, New York and the Tredegar Iron Works in Richmond, Virginia are nationally significant in their provision of cast iron products, especially during the American Civil War.

One of the key distinctions between historic industrial sites is the style and focus of their management. The shift in name from Tredegar National Civil War Center to American Civil War Center at Historic Tredegar is indicative of national story lines superseding more local ones, with involvement from the National Park Service between 2000 and 2006. In contrast, the private management at the West Point Foundry since 1996 allows the non-profit Scenic Hudson, Inc. to determine the direction of interpretation and design schemes. The park remains open to the public during the development of a local interpretation scheme centred on the 1860s, with investment in the property including several seasons of archaeological research.

The West Point Foundry is located on the eastern bank of the Hudson River approximately 55 miles north of New York City. Starting in 1818, the foundry employed

between 300 and 1,200 men in a complex that included a blast furnace, boring mill and full range of iron manufacturing facilities. After closing in 1911, none of these buildings save one office building survived into the present, thus rendering most of the complex archaeological.

Much like the northern counterpart's dependency on water, Tredegar's location in Richmond was well suited to tap into a variety of natural resources and transportation links including the James River and Atlantic coast. The physical extent of the Tredegar ironworks was larger than the West Point Foundry and included approximately a hundred buildings, only 3 of which today have been either fully restored or left in a ruinous state (see Figure 1). As many as 700-2,000 individuals worked at the iron works during the Civil War.

Comparing the interpretive schemes adopted is comparing apples to apples; the difference lies in the presentation to the public. Both locations have roughly equal significance, overlapping periods of manufacturing, and extent of industrial facilities. Both locations include non-profit organisations interested in educational pursuits and heritage management. At Tredegar, the federal government has aligned with a non-profit organisation to describe the Civil War and Richmond's related battlefields. At the West Point Foundry, a non-profit controls site developments and has teamed up with a university, local government, and/or historical society.

The process of archaeology at the West Point Foundry has been as much a part of the site management as fundraising concerns emphasising a dynamic form of interpretation rather than static signage. The slow process of excavation has benefited research by targeting



Figure 2: Visitors regularly interacted with excavators and witnessed the archaeological recording of a cupola furnace at the West Point Foundry, which was completely buried for over a century

photography by author, 2007

localised questions, improving community relationships, and allowing the management time to create interpretations based not only on documentary research, but also archaeological evidence (see Figure 2).

At Tredegar, a national narrative trumps the local context with national topics relating but not well integrated to the site's physical fabric. Large industrial artifacts are scattered across the landscape with little information. Nothing is communicated from the archaeological testing of the facility that can account for the site's manicured appearance (fill was brought in) or to help explain the channels that cut through it (dried water channels that powered equipment).

While general industrial heritage interpretation for the United States is limited to local urban museums and heritage corridors, many sites of industrial importance exist within the country. Groups to interpret these sites are often a non-profit organisation and the National Park Service, which drive the types, styles, and themes used during public presentation. The preceding comparison between the West Point Foundry and the Tredegar Iron Works demonstrated their prominence as significant ironworks during the nineteenth century. Both manufactured heavy ordnance for the government within a sizable industrial complex powered by water. Over the course of the twentieth century they both have become predominantly archaeological as later property owners destroyed buildings.

The managers of these locations today are interested in presenting history to site visitors, but in very different ways. For Tredegar



Figure 1: The 1861 Tredegar's gun foundry building that has been restored and now is home to the American Civil War Center

photo by Cameron Hartnell, 2007

national themes such as the North, South, and African American perspectives on the Civil War and regional themes of Richmond battlefields supersede consistent presentation of the local history. Visitors must search for a limited number of kiosks about the ironworks themselves and standard needs for parking lots and accessibility supersede archaeological excavations. At the wooded West Point Foundry, visitors only have one kiosk to tell them of the company's significance, but for seven summers they also had industrial archaeological interpreters daily on site and archaeology has influenced the interpretive plans scheduled within the next few years.

What remains unique about each location is the management's use of industrial archaeology and interpretation of the historic fabric in light of its archaeological potential. Ultimately, the local nuances embraced at the West Point Foundry are generally sacrificed at Tredegar for the sake of the more national themes of the Civil War.

Austria

Vienna's Werkbundsiedlung is the only industrial site included in the World Monument Fund list which calls attention to threatened historical sites [www.wmf.org]. It is one of the few Werkbund ensembles from the 1920s and 1930s that remains intact. The Modernist architectural complex was constructed in 1932 under the direction of Josef Frank with renowned architects including Josef Hoffmann and Alfred Loos. Thirty houses remain on a triangular plot of land in the periphery of Vienna. Today, a majority of the houses are owned by the city and are treated as public housing. The WMF reports that residents are largely unaware of the architectural significance of their surroundings and repairs and routine maintenance of the buildings are lacking. The houses exemplify the architects' Modernist philosophy combined with the Viennese estate house style. They created a comfortable and suitable living space with minimal financial expenditure. Although the different types of houses were made uniform through the similar treatment of facades, fencing and roofs, the architects personalized each house through the creative use of colours.

Ukraine

Linda Norris

In time for the Euro 2012 Football Championship, plans are underway to open a new Industrial museum in Donetsk focusing on the coal mining industry and providing access to mines almost one kilometre deep and highlighting historic mining equipment from the 19th century. According to those

undertaking the project, such industrial history efforts are significant tourist attractions in other countries such as Germany and they hope to do the same for the Donetsk region. In May, 2010, the State Museum of Aviation held the Second International Conference "Technical Museum: history, experience and prospects" with participants from Ukraine, Russia, Germany, Latvia, Lithuania, Slovakia, Bulgaria and the United States. a wide range of museum issues were discussed including the role of museums in the technological development of modern society, new museum methods and the use of technology in museums.

With the support of the Government of Japan, the National Museum of Chernobyl has installed a variety of equipment: DVD players, information terminals, projectors and archival cabinets. The new equipment both assists in the storage of important archival documents and enhances the visitor experience. Visitors can now search through a database of Soviet liquidators who helped clean up the disaster and view digital images of historic documents related to the 1986 nuclear accident.

In March, 2010, the Kyiv Metro launched a historical wagon on the subway to share information about the subway's history through photographs, certificates and other materials in celebration of the Metro's 50th anniversary.

The author, a United States Fulbright Scholar to Ukraine, presented a program on developing hands-on interactives to scientists and managers at the museum of Kyiv Polytechnical Institute. The museum's collections include a Soviet space capsule, materials related to Sikorsky and the helicopter, and other technical materials.

One of the most popular family museums in Kyiv is the Water Information Centre that opened in 2003. The goal of the centre is to increase awareness of global and local environmental issues and how some of those problems can be solved. The visitor uses all of his or her senses, using hands-on activities to identify problems and consider how modern technology can help solve problems relating to water consumption and use.

For more information, the Ukrainian Museum Portal website www.prostir.museum provides daily updates of the activities of Ukrainian museums. In Ukrainian only, but readable by using Google Translate.

Management plan for Goulburn Waterworks, New South Wales

Jane Ainsworth
Ainsworth Heritage –
www.ainsworthheritage.com.au

The Goulburn Waterworks was completed in 1887 to provide Goulburn's first permanent water supply and played an important role in improving the quality of life for the town's

residents. Goulburn Waterworks, being the only complete, workable beam engine-powered municipal water supply left in its original location in the Southern Hemisphere, is an extremely rare and significant complex. The pumphouse still contains the original Appleby Bros. beam engine pump and Galloway boilers, and the buildings and engine are of national significance. In addition, the waterworks contains a Hicks Hargreaves engine, though not original to the site, which is a technologically significant artefact in its own right and an outstanding example of the engineering skills of the late-19th century. This engine is the first type to incorporate English-built Inglis-Spencer Corliss valves and is the only engine of its type in Australia; only two similar engines by the same maker apparently exist in Britain. The Goulburn Waterworks engine is probably the oldest operating Hick Hargreaves engine in the world and the oldest British engine to incorporate the Corliss valve gear.

The Waterworks were constructed as part of a large program of public works, which occurred in the late 1800s, to provide adequate water supply to regional towns. The Waterworks represent the importance of the Public Works Department (PWD), its engineers in the 1800s and the massive funds provided for such public works. It continued to supply water (with the steam driven pumps operating until 1932) to Goulburn until 1972 when they were shut down. The site has been an important museum for steam technology since that time. The Appleby beam engine was installed in 1883 and commenced operation soon afterwards. It is a six pillar, Woolf-type cross compound engine normally operating at 20 strokes a minute and delivering 120 hp and was capable of pumping 30,000 imperial



Appleby beam engine

gallons of water per hour (approx. 130,000 litres per hour). It is currently operated about one day a month at reduced speed. Although beam engines were supplanted by horizontal and vertical engines for most uses in the second half of the 19th century, they were retained for water pumping to which they were ideally suited. Technically, the Appleby Beam Engine is not remarkable, however, aesthetically it represents the best quality engineering practice of its era – a time when considerable public funds and pride were vested in public utilities.

The engine operated in tandem with the two wood or coal fired Galloway boilers, which were located in the adjacent room. The boilers were part of the original complex and were commissioned in 1886, however they are no longer operable. They supplied steam to the Appleby Beam Engine and the Blake Steam Pump until 1932 when steam operations ceased.

The specifications for the engine and boilers are as follows:

The Appleby engine is in remarkably good condition for its age and history, and praise should be given to its original restorer Bruce McDonald and the countless dedicated volunteers who have continued to maintain the engine since the 1950s.

Also at the site is a Hicks Hargreaves horizontal steam engine, built by Hicks Hargreaves of Bolton, England, in about 1864 and acquired by the Waterworks in 1975 when it functioned as a museum. The engine, which is in excellent condition, is technically very interesting as a survivor of the first British built class of engines which used the very efficient and widely adopted Corliss valve developed by the American engineer Henry Corliss in 1849. The Hicks Hargreaves version was designed by Inglis and Spencer who had worked with Corliss in Canada.

The Waterworks is an excellent representative example of its type and demonstrates the culmination of steam power technology in the late-1800s and the importance of public water utilities in that era. The machinery at the site, which primarily comprises the Appleby Beam Engine, the two Galloway Boilers, the Hicks Hargreaves Engine and the 1918 electric pumps, is a highly significant collection of engineering artefacts for Australia; this significance is enhanced greatly by the bulk of the collection being located in their original site and remaining functional. The site operates as a museum with regular activities and monthly 'steaming' days. The Goulburn Waterworks has been very lucky in that it has, for a long time, had a group of dedicated and importantly skilled volunteers who have kept the engines operating in impeccable condition. The Conservation Management Plan focused at the management end in providing structure for maintenance and capital works - as a bridge between the volunteers and the local government council

who owns the site to try and ensure that cases of inadvertent damage by site workers and volunteers was avoided. It also had to focus on ensuring that the site didn't become too 'sanitised' and retained its industrial flavour, and also that long term damp within the buildings themselves causing structural damage could begin to be addressed.

The information in this article is taken from the Conservation Management Plan prepared for the Goulburn Waterworks by Ainsworth Heritage. Acknowledgements and thanks to Goulburn Mulwaree Council (the site owners) for funding this work.

Underground industrial heritage attractions in Budapest

Dr Györgyi Németh

The latest sensational tourist attraction in Hungary is the former top secret Nuclear Bunker and Emergency Hospital beneath the Buda Castle in Budapest. The museum location itself as well as the exciting history of the complex and its still functioning technical equipment provide unique experience for visitors.

Having been used for storage by citizens for centuries, the network of the more than one hundred caves inside the Castle Hill was transformed into a series of bomb-proof bunkers at the outbreak of the Second World War. In one section of the fortified and connected tunnels the authorities established an emergency hospital for the urgent medical attendance of soldiers and civilians injured in air raids.

Classified as 'top secret' under the code LOSK 0101/1, the institution was upgraded into a nuclear bunker in the Cold War era through the installation of facilities that could help the lucky few inside to survive a nuclear attack. However, 'The Hospital in the Rock' was temporarily opened for the public in the autumn of 1956 when it cared for the wounded victims of the Hungarian Revolution. Since the site kept its secret status and had regular maintenance until 2002, all technical equipment and machinery, mostly from the



Reinforced concrete pillars in the underground cistern of the Budapest Waterworks on the Gellért Hill from 1980.

early 1960s, was retained in a good working condition. Visitors thus can study Ganz power generators still capable of providing electricity for the underground complex separately from the city's power network, an ingenious air filtering and ventilation system, enormous water tanks and pumping facilities with direct conduit to the Danube as well as an x-ray machine in the operating theatre – to list only the most outstanding pieces in the extraordinary on-site collection.

In 2006 on Heritage Day the one-time hospital was fully opened for the public after it had provisionally served as a theatre space for the performances of an alternative theatre troupe. Due to the growing public interest first a permanent exhibition was installed in the tunnels, then the Ministry of Education and Culture declared the institution a museum in 2010. For more information on the site see: www.sziklakorhaz.hu/szikla_en.html.

It was also a must for tourists as well as the local population to visit the twin cisterns inside the Gellért Hill on the occasion of the Open Day of the Budapest Waterworks this May. The two huge water tanks, each with 40,000 m3 capacity, were built in 1980 in order to ensure the balanced supply of the inhabitants of the Hungarian capital with drinking water day and night. Though the underground structure was designed on the basis of a DYWIDAG patent elaborated for the new cistern of the Munich Waterworks in Germany, local experiments on its piano-like shape were directed by József Gruber, a past rector of the Budapest University of Technology. Due to the favourable hydro-dynamic conditions he developed, the level of water-quality became constantly high in the cisterns, which were finally named after him in appreciation of his scientific achievements.

The architectural features of the establishment are also remarkable. 106 ten-metre-high pillars shaped like a chalice support the ceiling of each water tank, the walls of which were constructed from pre-stressed reinforced concrete with formwork technology. Laying the 35-cm-thick foundation of the cisterns took 41 hours, and proved to be a real challenge for the building firm at that time. The water tanks were not only covered with a thick layer of soil in the end but a recreational park was also created above them from where visitors can currently enjoy a marvellous view of the Danube and Budapest.

Unfortunately, the József Gruber Cisterns can be visited without restriction exclusively on Open Days, otherwise only group visits are possible with permission obtained from the following e-mail address: kommunikacio@vizmuvek.hu in advance. Permission is also given at this address for the visit of the Budafok Water Tower, a would-be industrial heritage masterpiece which was built three years ago.

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marketing initiatives were developed with Heritage Lottery funding. These comprise the dedicated web site www.industriouseast.org.uk, the marketing brochure "Discover the Industrious East", the travelling exhibition "Working Lives in the east of England" and the education programme "Making Sense of Our Industrial Past". These tools have given a flavour of what can be achieved given appropriate funding and support to the sites.

The project went public in July 2006 with a launch event at the ERIH Anchor Point site of the Royal Gunpowder Mills, Waltham Abbey, supplemented by a public relations campaign aimed at the regions press. The new website introduced the project to a wider public and was favourably received. Promotion of Industrious East sites as tourism destinations progressed through distribution of leaflets at sites, tourist offices and libraries. Opportunities were taken for talks and broadcasts. The regional tourism body saw Industrious East as an opportunity to enlarge the tourism market in the region and endorsed the project enthusiastically.

The touring exhibition "Working Lives in the east of England" was developed in 2009 with the support of the Heritage Lottery Fund as an educational initiative to attract new audiences to industrial heritage. Aimed principally at school children it actively engages their interest through industrial headwear. As well as presenting the human side of industrial heritage it enables each site to relate its own story to a wider industrial and economic picture. The Working Lives exhibition will be on display at The Museum of East Anglian Life Stowmarket until the end of July, at Fakenham Gas Museum throughout August, Prickwillow Museum in September and the Imperial War Museum Duxford (another ERIH Anchor Point) in early October 2010 coinciding with the Big Stuff Conference [see below].

Hopefully the approach developed by Industrious East will be adopted in the future by other industrial heritage projects, to raise the profile of industrial museums and attract many more visitors to explore an exciting aspect of their history.

Publications

Turismo industriale in Italia

Touring Club Italiano Musimpresa, Milan, 2008, in Italian and English

In this agreeable guidebook, already in its second edition, 41 museums and archives testify to the genius of Italian manufacturing as well as illustrating Italy's recent social and economic history. That it is in both Italian and (commendable) English illustrates the importance of this kind of tourism in Italy, the fifth largest destination for visitors in the world, at both the domestic and international level. Rounding off each entry are pages devoted to others things for tourists in the vicinity, suggested hotels and restaurants. So both in its content and modern format, this excellent guidebook looks well beyond AIPAI and TICCIH to the general usership that has been established in Italy for some years. And if driving and eating are the two most frequent themes of the chosen museums, connecting them is the centuries old Italian concern that the shape of things should take account of their use, but have also some special aesthetic appeal.



TICCIH Conferences

For all conference information consult www.mnactec.cat/ticcih/agenda.php

Finland

'Reusing the industrial past', a joint international conference between TICCIH and ICOHTEC with Worklab

Tampere, 10-15 August, 2010

■ The first joint conference between the two world organisations for industrial and technological history, its archaeology and heritage, with the association of labour organisations. Organised by the Museum Centre Vapriikki and the University of Tampere, the programme includes scientific and plenary sessions, business meetings and tours. Info and full programme: www.tampere.fi/industrialpast2010/

World Conferences

Spain

Design, Image and Creativity in Industrial Heritage

Gijón (Asturias), 29 September - 2 October, 2010

■ XII annual international conference on industrial heritage, organised by INCUNA. Info: www.incuna.org

United Kingdom

Big Stuff 2010

Imperial War Museum (IWM) Duxford, Cambridge, 6 - 8 October, 2010

■ 3rd conference on the conservation of large technology objects. Special session on industrial monument preservation.

USA

International conference on historic metals conservation

Clemson University, Charleston, 11-15 October, 2010

■ Interim meeting of ICOM-CC Metal, Info : www.iiconservation.org

Poland

Monuments of technology in economy, social policy and culture. CFP

Wałbrzych, Nowa Ruda, Dzierżoniów, Swidnica, 12 - 15 October, 2010

■ The role that can be attributed to the protection of industrial and technological heritage in the processes of economical, social and cultural transformation. Post-conference tour to Lower Silesia www.nadbor.pwr.wroc.pl

China

II UNESCO-ICCROM Asian Academy for Heritage Management, Urban Heritage and Tourism: Challenges and Opportunities

Macao, 1-3 December, 2010

■ Managing change in historic urban areas, adaptive re-use of heritage resources, interpretation, tourism, contributions to host communities. Info: www.ift.edu.mo/news/aaahm2009/conferences.htm, aahm2009@ift.edu.mo

Germany

"Work - Bodies - Efficiency: new perspectives in historical workplace studies" CFP: 18 October, 2010

Ruhr-University Bochum, 24 - 25 February 2011

■ Workshop investigating the deep transformation of workplace configurations, characterized by increasing mechanization and the rationalization of workflow, caused by the process of industrialization. In German and English. Info: lars.bluma@rub.de; <http://homepage.ruhr-uni-bochum.de/Lars.Bluma>