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- *The Legacy of American Copper Smelting*, Bode Morin, reviewed by Stephen Hughes
- *London's industrial heritage*, Geoff Marshall

Review reprint

- 2010 conference publication *Post-Mining Landscape*, reviewed by John Baeten

Coming up



Neuhausen, Saxony, Germany. New exploration applications have inundated the mining authority of Saxony, where the Erzgebirge or Ore Mountain has been mined for 900 years. Most are for tin and tungsten but also recently gold. How to manage the impact on conserved landscapes of new extraction is the focus for a TICCIH seminar in Freiberg (see TICCIH News).

Photo: Leviathan1983 (Creative Commons)

Opinion

World Heritage needs more TICCIH thematic studies

Dr Stephen Hughes, TICCIH Secretary

World Heritage Status has the potential to be a main factor in driving forward the regeneration of old industrial buildings, landscapes and settlements. It is a vehicle for significant and outstanding industrial heritage sites being included in increasingly lucrative international cultural tourism networks and for achieving the ability to draw in sizeable sums of both government and private investment.

Even more fortuitously, the international community does not want yet more World Heritage European cathedrals, palaces, castles and parks and gardens inscribed. In stark contrast, the global world view recognises the shared value of the technological, commercial and social revolutions that have universally led to the foundation of a modern society. This has been witnessed by the great popularity of the industrial heritage celebrations in the opening ceremony of the 2012 Olympic Games opening ceremony. Indeed both the Global and Filling the Gaps Strategies produced for the World Heritage Centre have highlighted the under-representation of the industrial heritage on the World Heritage List.

Opinion

So what is holding back the rapid inscription of all the key industrial sites in the world? The answer is that most cultural heritage professionals and institutions do not understand the factors that make an industrial heritage site or landscape of Outstanding Universal Value (OUV). To improve this situation TICCIH agreed in 1994 to contribute a series of industrial archaeology studies to the International Committee on Monuments & Sites' (ICOMOS's) newly established World Heritage Studies.

This has proved to be astonishingly successful in facilitating the inscription of new industrial and technologically significant sites in the subject areas included. For example, the TICCIH/ICOMOS International Canal Monuments Study of 1996 aided the subsequent nomination of the Canal du Midi in France (1996), the Canal du Centre in Belgium (1998), the Rideau Canal in Canada (2007) and the Pontcysyllte Canal & Aqueduct in the United Kingdom (2009). This year the Grand Canal in China has also been nominated for world heritage status.

TICCIH also contributed World Heritage Studies on Bridges, Industrial Workers Settlements and Coal Mines before this successful collaboration with TICCIH ground to a halt in 2003. Earlier this year the TICCIH Board agreed to restart this joint process with ICOMOS who have enthusiastically welcomed the proposal.

The need now is to start a coherent programme of Studies covering the whole of the Industrial Heritage Sector so that industrial heritage inscriptions can be expedited across the field. A template for these studies has been established and will be

placed on the TICCIH Website. New funding has been difficult to achieve for this purpose and the present work is being partly financed by various funding streams. There can also be a synergy with the industrial sectors included in the sites at present on the tentative lists of individual states applying for World Heritage status for their individual sites.

Some of this work can be aligned with the TICCIH special interest groups such as that for Textiles and also for the Hydro-electric industry.

At a minimum the work for each individual World Heritage Study must include representatives from a number of states working to an agreed timetable including an international meeting or consultation, joint editing with ICOMOS, a draft text placed on the TICCIH website and finalisation after comments. The TICCIH Board has agreed that the overall organisation and editing on the TICCIH side will be undertaken by Stephen Hughes and James Douet.

The initial work started includes World Heritage Studies of the Copper Smelting Industry; the Iron & Steel Smelting Industry; Non-ferrous Metals Mining; the International Slate & Building-stone Industry and the Water-supply Industry.

Volunteers to lead on additional studies, or to participate in the on-going first batch noted above, are invited to contact me at secretary@ticcih.org. Existing World Heritage Studies are on TICCIH website and can be consulted at the World Heritage area of the ICOMOS website.

Report

Using a comprehensive tool box including excavation, interviews, company archives, GIS map overlays, remains of material culture and other techniques, a team from the University of Maryland, US, is revealing the unrecorded history of poor immigrant workers to the tough anthracite coal fields of Pennsylvania

Social archaeology in the anthracite coal towns in Northeastern Pennsylvania, USA - the anthracite region

**Dr Paul Shackel and Michael P. Roller, MAA
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The social and economic order of coal extraction in the anthracite region of Northeast Pennsylvania dominated the area for over a century. Anthracite coal was first mined in the late eighteenth century, developing as a major industry by the middle of the nineteenth century. By the turn of the twentieth century the anthracite coal industry employed about 180,000 workers, extracting over 100 million tons of coal per year.

Most of the north-eastern United States became dependent on this fuel for industry and heating houses. The anthracite beds cover about 484 square miles and contain most of the known deposits of anthracite in the world.

By the middle of the nineteenth century German, English, Irish, Scotch, and Welsh immigrants comprised the main workforce of the coal industry. By the 1870s and 1880s Slavic and Italian immigrants, following global flows of labor migration to the United States, began to outnumber their predecessors in many coal mining communities. Cultural differences and competition for resources produced nativist resistance among longer-established populations. Opportunistic management often exploited this difference to stratify and divide their labor forces. The social structure of the region took on the character of a racialized class hierarchy that is visible through its material culture, landscape and the built environment. This structural inequality sometimes exploded in deadly violence. In September of 1897, in an event known as the Lattimer Massacre, 25 striking miners of Eastern European ethnicity were killed by a local sheriff and posse with the support of the local business community.

Report



A view westward of Main Street Lattimer showing rows of company-built double houses. Today the historic landscape of the towns remains relatively intact with roads still lined with original company-owned double houses. When the homes were passed over to private ownership, many owners altered them with extensions, closed-in porches, and aluminum and vinyl siding, but the basic form and shape of these buildings is still visible. Some of the structures that once housed miners and their families working for the Pardee and Lattimer Coal Companies are still inhabited by the descendants of the original occupants.

(Photo by Michael Roller)

The coal mining industry declined precipitously after World War II. Today the region still strongly identifies with coal despite the relatively small role it plays in the daily economy of the region. Nonetheless, the landscape is characterized by traces of this industry in the form of scarred earth and industrial ruins. The ethnic sources of labor are also evident in the cultural heritage of the region, in the food, architecture, place names, community organizations, and family histories.

Since 2009, the Anthropology Program at the University of Maryland committed itself to raising the profile of the everyday life of workers and immigrants in the anthracite region of Northeast Pennsylvania. To accomplish this, the project ties together knowledge from many sources including archaeology, oral history, company documents, newspaper archives and ethnographic documentation.

Living in company owned towns ("patches" in the local parlance), miners and their families endured tremendous poverty and unsanitary working and living conditions. Oral history interviews and archaeology conducted in the patch towns materializes a narrative of hardship and struggle miners and their families confronted throughout the 20th century. Our investigation focuses on the patch towns of Lattimer and Pardeesville (formerly Lattimer No. 2). With a combined population ranging between about 800 and 1300 between the census years of 1880 and 1940, the patches are among the domestic and industrial sites that ring the once prosperous mini-metropolis of Hazleton, Pennsylvania.

One major source of data for the project are the administrative archives of the Lattimer Coal company, which survives today in private ownership. The project is assembling a rich picture of company practices and town life from this unique collection.

Details of labor practices, employee demographics, financial policy, and management of the built environment are represented in this collection. Documents connecting company policy to significant events in national and regional history situates our examination of material history in broad historical and social contexts.

Finding the shanty enclave

For two summers the University of Maryland has focused study on the new immigrants of the late nineteenth century - the poorest and most resource deprived segment of the coal mining community. This research is about exploring a community that historically was not accepted into American society. It explores how they coped and adapted to a harsh physical landscape and a social environment often defined by racial prejudice and poverty. Confined to the periphery of the company towns, the new immigrants were responsible for their own housing, building shanty enclaves that were often described as unsanitary, unplanned, and ephemeral. In some areas, these shelters developed into more permanent housing while in many other cases these buildings have been erased from the landscape.

In 2010 the project assembled a GIS database of historic maps assembled from company documents. The database revealed areas of the towns once densely occupied by shanties. Starting in 2011, excavation began in two neighborhoods settled by Italian and Eastern European immigrants starting around the turn of the last century. One goal of this work was to document ephemeral architecture and family usage of yard space. The archaeology provides information about materials and tactics residents used in coping with everyday life as well as details about the circumstances of general health and wealth conditions in these enclaves.

Report

Excavation provides clues about the development and changing perceptions of investment among the new immigrant workers in these communities. For instance, the company initially rented to miners land in vacant and undesirable areas located on the periphery of longer established settlements. These families were then responsible for the construction of their own houses. Foundation stone, lumber and hardware for dwellings was scavenged from various places around the colliery. As the residents became more invested in the community, they built more substantial dwellings. Archaeology in the Lattimer enclave shows that the earliest dwellings were constructed on low minimal stone piers. In Pardeesville, as generations of workers became attached to the community, there is a second generation of building with more substantial foundations, and in some cases, with basements.

For the laboring family, the most important use of yard space was for gardening, as a way for the families to have some independence from the company store. Gardens served to stretch the meager wages after supplies and other company store expenses were deducted from salaries. Excavations document garden landscapes through features such as shovel divots from planting, tilling, and the supporting and fencing of plants. Soil samples will yield pollen and seeds to help reconstruct this diet.

Unsanitary conditions in the shanty enclaves often served to signify, for outsiders, the inferior racialized character of these settlements. Excavation and oral history in the town of Pardeesville documented community efforts to improve sanitation by draining and directing waste away from houses and public spaces. Evidence for a “wildcat sewer”, a community built system that drained waste directly into the coal mines, was also evidence of these efforts at improving living conditions.

A major project goal is to connect the meaning of immigration and racialization in the past to current social and economic conditions in the region’s present. Small items recovered such as toys, coins, writing implements, religious icons and work and Union-associated paraphernalia help us chart moments along the passage of changing immigrant identity.

The research project will be summarized in doctoral dissertations to be produced by Michael Roller and Camille Westmont. Researchers and community members maintain an ongoing conversation about the meanings of memory, materials and identities staged at the yearly archaeological excavations, the project blog (<http://lattimerarchaeology.wordpress.com/>) and at public events throughout the region.

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A 1938 aerial view of Pardeesville showing Italian shanty enclave (circled in red) and company-built double houses. Stripping operations can be seen immediately to the south of the town.

(Photography courtesy of the Pennsylvania Geological Survey, 1938)

Worldwide

Philippines

History and uncertain future of the Philippine railroad

Christina G. Ealdama

Little is known or heard about the Philippine railroad trains. They made a big difference in the lives of most Filipinos and are now being recognized as an important industrial heritage that fostered the development of towns and agricultural exchanges and improved the poor condition of travel as well. This important influence was initiated by the Spanish colonial government through a royal decree in 1875 by King Alfonso XII. Construction started in 1887 and first operations beginning in November 24, 1892 credited to the Manila Railways Co. Ltd., (MRC) a London-based firm. The *Ferrocarriles en la Isla de Luzon* was a plan prepared by Eduardo Navarro, public works engineer in charge of railroad planning at that time. In the proposed plan for Luzon there were three railway lines strategically intended to connect Manila with the most productive agricultural regions in the island.

The first line, the Main Line North, covers the route from Manila to Dagupan with a total of 195 km of track and was the only one built during the Spanish period. The British MRC represented by Anglo-Spanish civil engineer Carlos Bertodono was tasked to supervise the construction using imported materials, railroad ties and bridges from Australia and cast-iron cylinder, steel bridges, bolts and other important railroad-building components from England.

Many towns enjoyed the benefits of interregional agricultural trade and promising economic prospects. Rail transport meant swifter and safer movement of more merchandise from small industries (such as hat-making, clay jars and baskets) to Manila where most bulk goods were exported by ship. Yet the impact was not immediately felt because of the Philippine Revolution in 1898 followed by the Philippine-American war which ended in 1902.

By the time American rule was established, the second line commenced construction and the railroad operation was shifted to an American concession, the Manila Railroad Company (MRRCo). The second line covered central Luzon but the intention of reaching Cagayan Valley in the northeast of the island did not materialize. The third proposed line "Main Line South" from Manila to Bicol was the only line completed in its entirety. From the commencement of its construction it took a long time before a straight trip from Manila was possible, formally inaugurating the Northwest-Southeast unified system in 1938.

During the 1935 Commonwealth government, natural disasters through both a series of raging typhoons and record droughts in central Luzon affected the production of sugar, rice and tobacco. In addition there were labor union problems to be addressed along with a decrease in mass purchasing power. Construction of highways and roads to the rural areas and the unstoppable advancement of new motor vehicles, trucks and buses competed with the steam-engine trains, especially for short-haul services, aggravated the downside of railroad revenues.



Now in a pitiful state, the Paco railroad station in Manila was inaugurated in 1908. Designed by American architect William E. Parsons, the style is supposed to mimic that of the grand Pennsylvania station in New York. The National Historical Commission, PNR and other governing bodies decided to restore the structure in celebration of the station's centennial, with the addition of a historical marker on the structure in 2009. Yet until now we await the realization of this project.

Worldwide

To make matters worse, the damaging effects of World War II destroyed the improvements completed in less than a decade ago. After the war, the railway system was left with only 452 km of operational tracks, barely half its maximum length. Efforts to save what could be restored of the railroad system were undertaken piece by piece, and some parts of the line have to wait until today.

In the 1950s, the MRRC converted its trains from steam to diesel-powered engines ten years before acquiring its current name, the Philippine National Railways (PNR). Progress at 50% rehabilitation from the war damage, the railroad was back and running in the early 1960s and is said to be the wealthiest government arm with its now diversified investments and assets which include public bus and freight services. Today the state-owned PNR has recently launched metro-commuter die-

sel multiple engines that serve a large portion of the working populace in Metro Manila.

There is a need to recognize and revive old railways of Luzon as opportunities for new industries perhaps by branching out newer railway tracks that could link to well-planned residential-commercial or business-industrial developments. Industrial heritage, quite unfamiliar to the new generation of Filipinos, should be part of considerations set for future regional and urban planning by experts in the field and foresighted government decision-makers. Apart from uncontrollable forces of nature, destruction of wars and perhaps time itself may have physically erased the railway lines prepared and supervised by Spanish engineers, constructed and operated by the British, then the Americans, but the legacy of the railway industry will remain indelible in all important aspects of Philippine history.



An inactive portion of railroad in Calamba, Laguna, south of Manila. Most Filipinos living along the railways (informal settlers) have improvised their own cart, transporting people short distances. This cart is an improvisation. The operator is a little 12-year old boy who earns 20 pesos (about half US dollar) for every trip for those in a hurry to get to the nearest village.

Worldwide

Austria

Demolish? The Linz Railway Bridge

Following frequent press reports in the last weeks, the Austrian Federal Protection Office has announced a decision regarding the old railway bridge over the River Danube which has experts rolling their eyes. The Linz railway bridge is one of the landmarks of the city. The riveted iron bridge with curved upper flange was opened in November 1900. After its improper use due to the construction of a solid lane for motorised traffic, clearing the road with salt in winter and years neglecting its maintenance, the bridge was said to be in such a poor condition that its repair would cause appropriate high costs. The owner, the Austrian Federal Railways, which has no use anymore for the bridge, asked the Federal Protection Office – with reference to the high repair costs – for permission to demolish the monument. After the end of a quite unusual procedure (in the sense of principles based on the rule of law) and after ignoring the evidence prepared by independent and renowned experts of the advisory board for the preservation of monuments

(Denkmalbeirat, who were appointed by the Minister), the Federal Protection Office paved the way for the bridge's imminent demolition.

In the view of experts all are called upon to raise their voices to preserve the last big iron-frame bridge over the Danube in Austria as a monument of national importance.

TICCIH Austria



The railway bridge over the Danube river was considered a national monument

Worldwide

Iran

New research on the industrial heritage in Iran

Hadi Naderi

School of Architecture, University of Tehran

Iran was affected by the Industrial Revolution of the West after a considerable delay. From 1785 to 1925 was the time of the Qajar dynasty, during which reformists made efforts to keep pace with these changes, but for different reasons their attempts were mostly unsuccessful. In the following Pahlavi dynasty (1925–1979), reforming the government and its legal and economic systems caused a new order and security among the country. Industrialization in Iran began with the support of the government and industrial factories, railways, bridges, and many of other structures started to be built. Here we will look at four of these which had great effects on the next development programs.

Petroleum Industry

The first oil well in Iran and also in the Middle East was detected in 1908 near to Masjed Soleyman, an ancient city in the west-south of Iran. Exploitation and detecting other wells made a new history for this region and the country. New structures were built for extraction and refining oil in this and other oil-rich areas. Workers from all parts of the country came and new towns were founded for them. Maybe the most important historic refinery was built in Abadan, another city in the west-south of Iran. Great structures were founded and the city became an important area for the petroleum Industry in Iran.

The detection and exploitation of oil had great effects on the political and economic issues and also developing programs in Iran which continue today. Some of the structures including the first detected oil well have been registered on the Iranian national heritage list.

Iran's first factories

Founding industrial factories was also considered during the Qajar period, but only a few small factories were built which could not compete with foreign competition. In the next dynasty, developing the factories was a great achievement, and in the political and economic stability of this period new factories emerged in different areas. The first were textile factories and factories on agricultural products such as rice, cotton and tea. But gradually the number of factories and their fields of work developed, in Isfahan, Yazd, Kashan and other Iranian cities. The structures and equipments of many of these factories still exists and they are an important part of the industrial heritage in Iran. Some are registered in the national list, but many are threatened by urban development programs or negligence.

Railways

The first railway in Iran, established in the Qajar period, was a horse-driven suburban line connecting Tehran to an important religious place in the south of the city. It was later converted to steam. But the most important railway construction program was from 1925 to 1937. This connected Bandar Torkman on the Caspian Sea in the north to Bandar Shahpour on the Persian Gulf in the south of Iran. To finance this project the government made a new tax on sugar and tea products and also borrowed from two Iranian banks.



Abadan Oil Refinery

Worldwide

About 90 stations were constructed along this railway, many are valuable structures and some have been registered on the national list. After that, other rail-road tracks such as Tehran-Mashad, Tehran-Tabriz and Tehran-Yazd were constructed, and these lines are still transferring the passengers and cargo.

Bridges

The knowledge of bridge constructing was an important skill in Iran from ancient eras, before and during the Persian empires and also in the Islamic periods. Influenced by the industrial developments, new bridges had started to be constructed along important routes and railways. Many of them have been built in the difficult terrains with the limited facilities. One of the most famous bridges of this era is Veresk Bridge which was constructed in 1936 by an Austrian engineer.



Risbaf textile factory, surrounded by new construction
Isfahan, Iran



Veresk Bridge on the Trans-Iranian Railway

Having an important role in World War II, Veresk Bridge was known as the bridge of victory and serves the Trans-Iranian Railway network in northern Iran. It was registered on the national heritage list in 1977. Another famous bridge of this era is the White Bridge in Ahwaz City in the south of Iran.

This report is a brief introduction to some of the Iranian industrial heritage and legacies. Among academics, new attention is being paid to the study and conservation of these legacies, but these are in initial steps. Although these heritages are among the earliest in Iran, many are under threat through negligence or urban development programs.

Regarding to these threats and also the values of the Iranian industrial heritage, national and international attentions and supports for protecting them are needed.

To promote these aims, some of the interested Iranians have recently joined TICCIH. This new group working with other interested professionals in the country has already done some activities:

1. A one-day tour of industrial heritage. Participants will visit the first factories established in Iran, influenced by the new technologies of their time.
2. An e-magazine on architectural heritage in which we have introduced TICCIH and the importance of the industrial heritage: www.sarvestanmag.ir. The pdf-file of the magazine is available on the website (in Persian). One of the new members has set up a weblog on this topic: <http://iih.blogfa.com>
3. The team has interviewed an old engineer, Dr. Gholamreza Kobari, who had worked in the first railways of Iran, and this interview will be published in the e-magazine.

The Iranian new group on TICCIH hopes to have good collaboration with TICCIH and other national parties to promote conserving and safeguarding of the Industrial Heritage in our country.

Worldwide

Japan

World Heritage Sites of Japan's Meiji industrial revolution

Stuart B Smith

Shinzo Abe, the Prime Minister of Japan, personally decided in September 2013 that the next nomination to be put forward to UNESCO for World Heritage Site status would reflect the rapid industrialisation of Japan during the Meiji Restoration (1868-1912). This can be seen as a first for Japan, and possibly for Asia, as the nomination includes sites which are still operational.

The application process was carried out by Japanese and industrial consultants from all over the world, many of whom are TICCIH members, and was masterminded by a Consortium led by Governor Ito of Kagoshima prefecture, who drew together funding and technical support from many cities and prefectures. If the application is successful it will be the beginning of a process initiated by an ICOMOS report to UNESCO, largely written by Professor Henry Cleere (Honorary Life Member of TICCIH) who in his GAP report recommended that there were far too few industrial sites on the World Heritage list and far too few sites from Asia. This will certainly start to redress the balance.



Hashima coal mining island building (Gunkanjima)

Photograph: Stuart Smith.

During the Tokugawa period, 1600-1867, Japan became a totally closed country as they feared the effect of Christianity on their society and authority. Christians were all cruelly suppressed, foreigners were not allowed to land on Japanese soil and Japanese were not allowed to travel abroad, on penalty of death. Large ships were not allowed to be constructed and international trade was limited to contacts with the Chinese and Koreans, under strict supervision, and a small contingent of Dutch who were confined to the island of Dejima in Nagasaki. This was a peaceful period in Japan, although governed by strict rules and a very strict hierarchy with the Emperor merely being a puppet living in Kyoto, whereas the Shogun who ran the country lived in Edo (modern day Tokyo). The clans in the south, Kyushu and Yamaguchi, became particularly rich and strong because of their contacts with the Dutch and limited trade with Okinawa, and they were horrified when a small nation which they had scarcely heard of, the UK, defeated China during the Opium wars. They realised that their isolated country had no army, poor weapons and no large ships, and in 1853 the visit of Commodore Matthew Perry of the US Navy, with a squadron of black ships, demanding the opening up of Japan to trade threw them into a frenzy of industrial development, initially by copying furnaces and machinery from imported Dutch text books. Soon, however, foreign merchants arrived, particularly the Scotsman Thomas Glover, who settled in Nagasaki and was happy to supply guns, ships and anything else that people wanted, particularly to the Satsuma and Choshu clans who eventually overthrew the Tokugawa Government and restored the Emperor Meiji to power.

Further details of the application are shown separately in the article from Professor Akira Oita.



The reverberatory furnace at Hagi

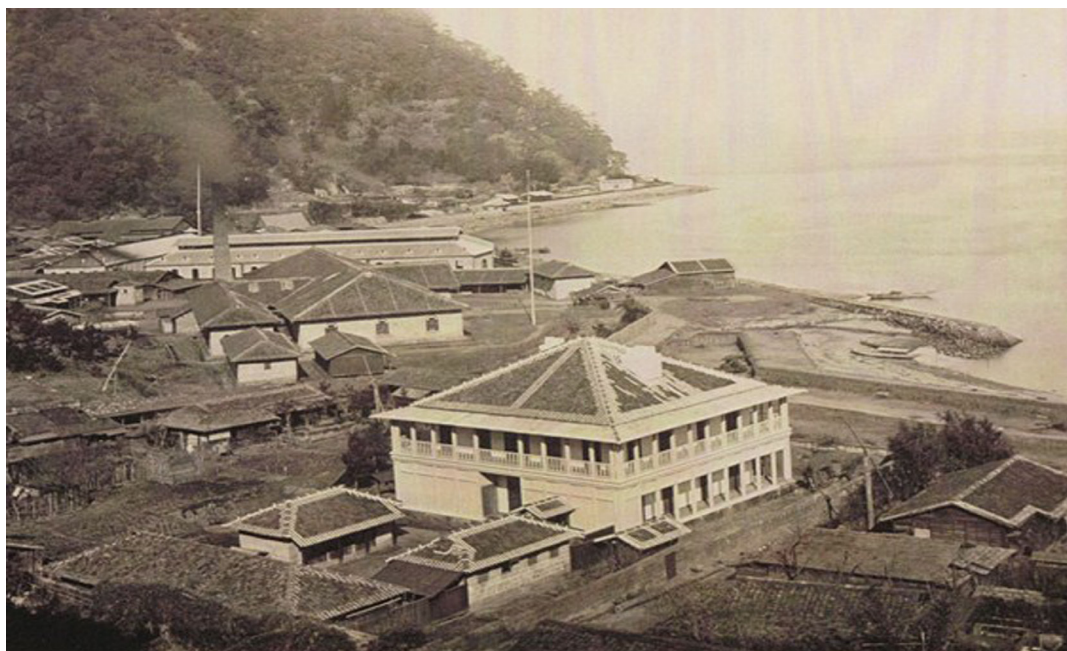
Photograph: Stuart Smith.

Worldwide



Hashima coal mining island (Gunkanjima), an undersea mine powered by electricity based on an artificial reclaimed island that became one of the world's most extraordinary mining communities.

Photograph: Stuart Smith.



In Kagoshima the Satsuma clan set up Japan's first modern steam-powered textile mill in 1867, within months of the rapprochement with the British Navy following its bombardment of the city. Nearby stands Foreigners' Residence, where the team of Lancashire engineers lived while they set up the mill. This pioneer factory complex, with its origins in the 1850s, embraced a blast furnace, reverberatory iron smelter; shipbuilding, iron and cannon manufacture, textiles, glassware, food, publishing and chemical products. Firebricks were produced for the smelters, and fine pottery and glassware was made to help generate income to capitalise industrial development. Some 1,200 people were working at Shuseikan at its peak. These pioneering innovations in Kagoshima formed the basis for other textile industry developments elsewhere in Japan, most notably in Osaka. Shuseikan also introduced the Factory System to Japan.

Photograph: The Pioneer factory complex at Shuseikan, next to the Shimadzu summer garden, Kagoshima, 1872 copyright Shuseikan Museum

Worldwide

Japan

Sites of Japan's Meiji Industrial Revolution (Kyushu, Yamaguchi and related area)

Professor Akira OITA, TICCIH Japan/ICOMOS Japan

Sites of Japan's Meiji Industrial Revolution is a nomination to the World Heritage List. The nomination is a series of 28 individual component parts in eight areas of Japan, relating to three key aspects of that nation's industrialisation – coal mining, iron and steel production, and shipbuilding. The sites, as a group, are representative of the first successful transfer of Western industrialisation to a non-Western nation, and the creation of an Asian industrial society. Japan's industrialisation was very rapid — accomplished in little over 50 years — and was characterised by a unique process of Western technology transfer that was not controlled by Western colonial and economic powers, and in which Japan delineated its own social and economic future. The rapid adoption, adaptation and improvement of this transferred technology was enabled by Japan's traditional socioeconomic base that was receptive to it, and illustrates not only the opportunities but also the challenges of industrialisation in the non-Western world.

The nominated sites comprising the property are:

- Hagi (Yamaguchi prefecture),
- Shuseikan (Kagoshima prefecture),
- Mietsu Shipyard Archaeological Site (Saga prefecture),
- Nirayama Reverberatory Furnace (Shizuoka prefecture),
- Hashino Iron mine (Iwate prefecture),
- Nagasaki Shipyard sites (Nagasaki prefecture),
- Takashima coal mines (Nagasaki prefecture),
- Glover House (Nagasaki prefecture),
- Miike coal mines and port (Fukuoka prefecture, Kumamoto Prefecture),
- Misumi West Port (Kumamoto prefecture),
- and Yawata Steel Works (Fukuoka prefecture).

The property is nominated under criteria (ii), (iii) and (iv) for its outstanding universal significance as:

an exceptional example of the transfer, adoption and adaptation of industrialisation from the West to a non-Western nation, for the first time in history — an important interchange of human values (criterion (ii)); and an exceptional example of the interaction of traditional cultural practices, social structure, and craft skills, with a transferred technology to produce an industrial culture distinct on a world scale — a unique testimony to a living cultural tradition (criterion (iii)); and an outstanding technological ensemble of key industrial sites of iron and steel production, shipbuilding and coal mining that is testimony to Japan's unique position as the pioneering non-Western country to successfully industrialize — an important stage of human history (criterion (iv)).

In May 2011 the importance of the Industrial labour memory to all humankind was recognized when some of Japanese coal mining labor records “Sakubei Yamamoto Collection” were included in UNESCO's Memory of the World Register (see TICCIH Bulletin #59).

The Sites of Japan's Meiji Industrial Revolution have a high level of integrity and authenticity and fully meet the requirements of the UNESCO *Operational Guidelines to the Implementation of the World Heritage Convention*. A world class management system, initiated by a Japanese Cabinet Decision in 2012 and entitled the “General principles and framework for the conservation and management” (‘Strategic Framework’ for short), will ensure the full protection and conservation of the properties, which includes established historic sites and sites that are in continuing industrial use. The Strategic Framework enables the use of national heritage legislation to protect some of the component parts of the nomination, while the application of a package of national and local laws, backed up by inter-government agreements and contractual agreements with private owners protects the operational sites.

Worldwide

South Korea

Cultural heritage of Bukhang docks

Professor Dong jin, Kang
Kyungsung University (Busan, Korea)

Bukhang (or North Port) in Busan, South Korea, has been like the mother of Korea's modern history ever since the opening of the Port of Busan in 1876 and it has served as the base for the existence and development of the City of Busan.

Bukhang is in the process of reclamation in accordance with the redevelopment plans. Bukhang has a heritage with over 100 years of development history and is a key industrial heritage site of Busan, illustrating the evolution of the logistics industry (port passengers) of the modern history of Korea. The port facilities and spaces throughout Bukhang offer significant potential value as an industrial heritage site which can be preserved or utilized in the course of redevelopment. Based on the results of this study, not only the resources on the surface but also the resources that were destroyed, dismantled or buried would be able to be restored or recovered in the process of redevelopment.

The port started with the installation of the Busan Customs and Customs Pier in 1883. Full-scale development ran from 1902 (first landfill construction) to 1983 (completion of 2nd phase construction project) and in the last 80 years it has undergone ten reclamation projects.

As the birthplace of Busan's modern history and the site also of Korea's modern history and industry, Bukhang is highly valued for its cultural heritage, the industrial heritage of Bukhang possesses an additional outstanding level of external appearance. And the stories that are interlinked with the features and events of each pier are analyzed as having excellent potential.

In particular, the inner walls that were thought to be buried during the course of the reclamation and relocation projects, the railroads of Pier 1 and Pier 2, the sites of the old Busan Customs Office and old Busan Station, etc. offer outstanding historical value in that, in the future, they will require special measures such as excavation for various developments.

Bukhang is equipped with the capacity of the logistics industry as well. The evolution of pier construction technology can be learned through analysis of the records of evolution, forms of pier construction, materials used, etc. For Piers 3 and 4 and Central Pier it is possible to ascertain the level of caisson-type pier construction technology of the 1940s through the thousand or so caisson quay wall structures (3.3 m * 2.0 m * 1.5 m) discovered in the course of demolition for redevelopment.

In addition, through Jaseongdae Pier, the country's first container pier, the 1970s-1980s logistics industry systems and the pier construction technology can be ascertained. In particular, the country's first container crane (Japan's Mitsui Company product) and the first container crane produced using Korean technology are still in operation today; through which it is possible to grasp the technological genealogy of industrial heritage of logistics-related mechanical components. Logistics handling and storage system, shipping delivery and recovery technology, and software-related techniques for logistics pier safety management functions, etc., are also considered to be of significant value of heritage.

Bukhang embodies a sense of identity for Busan as Korea's first maritime gateway. The port also offers an outstanding scenic beauty through constant repeating patterns from the facilities (columns for doors, gates, cranes, warehouses, etc.) that are distributed throughout. In particular, the silos in Yanggok Pier has an excellent landmark value, and the spatial patterns of the unloading area connected to the container docks, the sites of support facilities and the movement lines of various handling equipment and personnel are considered to be unusual sceneries.



The first South Korean-made container crane(Samsung Heavy Industries) in the immense Bukhang docks

Worldwide

Greece

Industrial evolution in the Black Sea area (IEBSA project)

Examples from Greece, Romania and Armenia

Olga Traganou-Deligianni, architect em. Ministry of Culture, Thessaloniki

The Black Sea Area is generally recognized as a crucial node in the development of cultures, trade and economic exchanges and crossroads between the Mediterranean and the Aegean Sea, the Caspian Sea and Caucasus. Furthermore, the Black Sea region is considered as a strategic bridge connecting Europe with Central and south-east Asia, the Middle East and China.

The “Industrial Evolution in the Black Sea Area, examples from Greece, Romania and Armenia” (IEBSA) project, is funded by the European Union (Black Sea Initiative 2007-1013), and involves partners from Greece (Thessaloniki Science Center and Technology Museum “NOESIS”), Romania (University of Galati) and Armenia (National Academy of Sciences). The project is focusing mainly to the identification of the characteristics of the main periods of industrial evolution for each national site (from its beginning in the second half of the 19th century up until the latest trends emerging in the late 20th and the beginnings of the 21st century), as well as the important historic events that influenced its development. The project is also aiming to create a common tool for the re-appropriation of the historic links between the three national / geographic sites involved and the creation of a new platform to encourage growing rapprochement between the national institutions of the partners.

The case study areas involved, are Northern Greece and specifically the Central Macedonia Region, South eastern Romania and the lower Danube-Black Sea area and Armenia as a whole.

The three case studies provide an elaborated comprehensive conceptual framework of key historical, economic and labor geography concepts, with insights from institutional sciences, paid specific emphasis on the analysis of distinct, successive phases of industrial emergence, evolution, crisis and restructuring and their interconnection to wider development circles of the Greek / Romanian / Armenian socio-economic formation and the prevailing (liberal, capitalist or state socialist) production. Throughout the whole study, special references are made to issues regarding:

- principal industrial sectors
- Infrastructure
- energy Sources
- the impact of the industrial development to the growth of urban centers
- industrial heritage

Common projects such as the IEBSA project are creating the positive synergies needed for the cultural and scientific rapprochement in the Black Sea region, proving the dynamics of good practices in the field for the future. The result of the project is presented in a catalogue, a DVD and an exhibition in order to communicate to the wider public of the three countries the main issues and conclusions of the case studies. The exhibition is using a variety of media, offering the opportunity to meet and build bonds, while promoting the concept of a common European road through socio-economic and geographic interactions.

Thessaloniki Science Center and Technology Museum “NOESIS” is the Project Leader. The exhibition was in Thessaloniki, Greece from June 20 - September 9, 2013 and it is planned to be presented in Yerevan (National Academy of Sciences of Armenia) from October 30 - 31 November and in Galati from 24 January - 24 March 2014.

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Modern industrial museums



Our new industrial museum this issue is the Athens gas museum, which unites historic industrial site and plant with digital applications, oral testimonies and video games, to explain how gas illuminated the Greek capital. Director Yannis Stoyannidis (above) studied history at the University of Thessaly. During his studies, he participated in a research program (2004-2011) which recorded the traditional workshops and cottage industries in the Mount Pilion. In 2012 he completed research on the history of Athens gasworks on behalf of the Industrial Gas Museum.

A lantern in twilight: the Industrial Gas Museum

Yannis Stoyannidis

On 27 January, 2013 the Industrial Gas Museum [IGM] welcomed its first visitors. IGM is the first industrial museum in

the city of Athens. The museum is in the premises of Athens gasworks, near the historical center of the Greek capital.

The first gasworks in Greece was founded in 1857 when King Otto, the Greek government and the Mayor of Athens assigned French businessman François Théophile Feraldi the task to illuminate the city with coal gas. Athens gasworks started operating in 1862.

The impact of the factory on the city's life and space was decisive. A new neighborhood was gradually established around the factory and acquired the name Gas-village from the gasworks. Along with a silk factory (founded in 1854), the gasworks was one of the first industries operating in the city in the midst of 19th century.

In 1887 Giovanni Battista Serpieri, founder of the French Mining Company in Lavrio, in the outskirts of Athens, purchased the gasworks and the unit achieved great technological and economic growth. Part of the mines complex has been restored and today hosts the Lavrion Technological & Cultural Park operating under the auspices of the National Technical University of Athens. In the following years (1887-1920), more retorts, new gasholders, steam-boilers, steam-engines, exhausters, condensers, an elaborate purification system and the first water-gas unit were installed in the gas-plant. During the interwar period, the plant transformed the neighboring Pireos street into a central avenue, by attracting more and more industries around its premises.

In 1937 the Athens Municipality took over the gasworks and thus the presence of Europeans in the factory's administration came to an end. In 1952 the number of consumers dropped dramatically mainly due to the advent and popularity of electricity.



A general view over the Athens gasworks museum

[Photo ©Yorgos Dimitrakopoulos 2013]

Modern industrial museums

The personnel were reduced from 800 to some 300 employees. Due to the demanding laboring conditions, the workers in the production stage were mainly male.

Since the 1970s the voices demanding the closure of the unit became stronger. In 1984 the factory was shut down and the production of coal gas in Athens became history. During 1986-1989 the Ministry of Culture declared the gasworks and its equipment as worthy of preservation. The restoration of the complex began in 1997 and was concluded in 2004. A large number of buildings were restored, including two retort houses, the washer-scrubber, the purifier, two water-gas units and all three emblematic chimney-stacks.

The municipal company Technopolis has been hosting art events (open-air concerts, art exhibitions etc.) in the old premises since 1999 and has thus transformed the area into a cultural venue. Warehouses, a tannery, a foundry and various industrial buildings of the surrounding area were restored to theatres and art halls thus establishing a cultural hub next to famous archaeological sites such as the Ancient Market, Thission Temple and the ancient cemetery of Keramikos.

Today the exposed mechanical equipment includes three Babcock & Wilcox steam-boilers, together with two Belgian steam engines (Liege) and two German exhausters (Berlin), vertical condensers, Pelouze & Audouin apparatus, purification tanks, large meters used in gas measurement, almost complete machinery of the two water-gas units, 84 horizontal retorts and three gas-holders. IGM holds a large collection of gas house apparatuses such as wet and dry meters, water-heaters, gas stoves and various tools, which may be [browsed online](#). The museum route follows the production line thereby presenting most of its buildings and installations to its visitor. IGM re-introduced the notion of industrial heritage to the citizens of Athens by historicizing a site previously known only as a cultural venue.

The project of the Industrial Gas Museum was coordinated by Professor Christina Agriantoni (University of Thessaly) and Athanassios Hatzigogas, Mechanical Engineer/Researcher in History of Technology, documented and interpreted the production line. The museum's exhibition was designed by Erato Koutsoudaki-Yerolymbou, architect-museologist. Maria Florou and Thalia Spiridaki, archaeologists-museologists completed the project's team.

In 2012-2013 more than 14,000 pupils and students visited the museum. According to the public, the success of IGM's exhibition is partially attributed to its modern design and digital applications; oral testimonies installed inside the retorts, 3D screens depicting machinery's function, a retorts model in motion, a digital map portraying the expansion of the gas network in the city, portraits of entrepreneurs and inventors, video games, and documentary films displayed on screens. IGM intends to host new educational projects and short-term exhibitions in the near future.

Since 1980s a significant turn has been brought about in Greece in the way public space showcases industrial heritage. Empty shells and large complexes have been revived and have taken up a new role in the urban economy. Some of them have been transformed to technological or industrial museums, whereas others have preserved only their original architectural form and neglected any reference to the historical past of the initial structure. What needs to be stressed concerning industrial heritage in Greece is the inadequate archival policy, especially in the turbulence of the late economic crisis. Large companies and industries close down and their archives are either abandoned or thrown away. Current times seem to require a re-evaluation of the role of archives in the construction of our public and social memory and also an interdisciplinary contribution to the fulfilment of this cause.

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A panoramic view in the old retorts built in 1862

[Photo ©Yorgos Dimitrakopoulos 2013].

TICCIH News

TICCIH historic mining landscapes initiative

Rising commodity prices and enhanced extractive techniques are putting pressure on historic mining sites and post-mining landscapes around the world (for example, see on page 23 John Baeten's review of the 2010 *Post-Mining Landscape Conference*). Proposals extend from re-working landscapes like the 5,000 year old gold mine of Sakdrissi in Georgia, to re-opening historic mines within mining World Heritage landscapes, such as Falun, Sweden, and Cornwall, UK, and the considerations about new mining in the recent nomination of the German-Czech "Cultural Mining Landscape Erzgebirge/Krušnohory" (Ore Mountains).

In this climate of tension between conserved landscapes and continued mining activities, the TICCIH Board sent a Draft Memorandum to ICOMOS for discussion at their Scientific Council meeting on 8 October in Costa Rica.

The text considered 'sites where past mining or quarrying activities... form the specific *raison d'être* for defining Outstanding Universal Value and for inscription', and asked that 'consideration should be given to analyzing the impact upon OUV before decisions are taken to allow or disallow such interventions'. The organisation's position is that 'in certain special cases mining can be allowed where this continues a cultural tradition, method of technology or extension of an historic process that already forms part of the OUV, under specific pre-determined and agreed conditions'.

Following up this approach Professor Helmuth Albrecht and TICCIH Germany held a seminar on 25 October to examine the preservation, conservation and suitable re-use of historic industrial sites and landscapes as well as the special problems of public and political acceptance, of financing and of external development pressure. A follow-up workshop is already planned for 2014, and a report on the Freiberg seminar will be in the next TICCIH Bulletin published in December.



The Sakdrissi gold mine in Georgia was discovered in 2004 by German archaeologists from Ruhr-University Bochum and is dated to the third millennium BCE. It is one of the oldest known gold mines in the world, with stone hammers and antler picks used to extract the ore. It was given protection by the Georgian Heritage laws in 2006 but its life as a conserved site was brief. A change of government saw pressure put on the ministry of culture and its status as a protected monument was removed in June. The Georgian mining company Rare Metals Group Ltd plans to start opencast operations which will swallow the area of prehistoric mining. The Institute of Archaeological Studies at **Ruhr-University of Bochum has mounted a campaign** to save it.

(Photo: Deutsches Bergbau-Museum)

TICCIH Lille 2015

Industrial Heritage in the Twenty-First Century, 5-14 September 2015. Save this date!

As we announced at the last TICCIH Congress in Taipei, the next XVIth TICCIH congress will be in northern France from 5 - 14 September 2015. This Congress is being organised by the French association CILAC and the Université Lille Nord de France (Artois), and will take place in Lille under the High Patronage of Mrs Aurélie Filippetti, the French Minister of Culture and Communication.

It will open on the evening of 6 September and finish on 11 September, and mainly take place in the Lille Palais des Congrès. Pre-congress tours will be proposed for the 5 and 6 September, and post-congress tours from 12 - 14 September.

The first decade of the twenty-first century has seen considerable change in the way that industrial heritage is considered, both in academic spheres and by society as a whole. This congress will consider how much is still necessary to give industrial heritage the social recognition it deserves and to show how this heritage, throughout the world, can help bring answers to today's needs for sustainable development, urban regeneration, architectural invention, local economies, culture and education. The role of the citizen and the part that the public can play will be at the heart of our approach.

Four main themes have been chosen:

1. Listening to citizens and educating them

The audience for the industrial heritage comprises the public as a whole. They are both participants and the target for actions in favour of the industrial heritage. Their way of perceiving industrial heritage, and what they expect from it, varies with where they live, in town or the country or according to the particular industrial history of their country.

2. Industrial heritage and economic activities

In becoming heritage, the vestiges of industry enter an economic sector which has little to do with their original one. What part can the industrial heritage play in developing the cultural economy and the tourist sector? What is its place in rural areas? This question is one faced on all five continents, whatever their degree of industrialization.

International Forum for Industrial Heritage Associations

Since its creation, TICCIH federates national associations of industrial heritage and helps in the implementation of their projects. The national associations are fundamental to the action of TICCIH on the ground, officially recognised by the public authorities throughout the world. TICCIH is an unequalled point of convergence and of expertise, whose principles are always expressed in a visible way in reference books.

Since the years 2000, the number of local associations has increased, reflecting the awareness by citizens of the industrial heritage and its legitimacy in the cultural and historical landscape of the countries. TICCIH and its national representatives

3. "Building the city over the factory"

For contemporary societies, sustainable development means rebuilding cities, developing economies in terms of energy and space. This generates tensions between interpretations of values: the real estate value of a factory's location, or the heritage values of its buildings.

Industrial heritage and real estate issues

The place of industrial heritage in urban regeneration
History and heritage in the "new territories of art"

4. Defending and promoting the industrial heritage: the actors

For the main figures who promote and represent industrial heritage in different countries the congress will provide an opportunity for comparing approaches and objectives. Amongst the institutions, UNESCO and ICOMOS have a special part to play. By taking the industrial heritage into consideration they have considerable influence in changing the ways this heritage is considered by people in different parts of the world.

National industrial heritage and industrial archaeology associations, federations and regional associations have for more than forty years evolved both in their ambitions and their membership. A comparative approach would be useful in order to appreciate national issues and to explain how these have evolved.

Since the 1980s, the importance of state intervention in the study and protection of the industrial heritage has declined, encouraging the emergence and affirmation of new participants. What has become of the industrial sites and buildings designated by early inventory campaigns? How are study projects and inventory campaigns being carried out today under the aegis of local authorities, and what are the objectives of these campaigns?

The industrial heritage is a subject now taught in schools and universities, but how does this teaching vary according to educational systems or according to the impact of industrialization and the proximity of its traces? The TICCIH congress will be an opportunity to compare teaching experiences and to examine types of training for the skills needed for industrial heritage work.

The congress website and call for papers will be sent out at the end of 2013. Watch out for dates and information!

provide their help and experience to everyone in an ethical, scientific and intellectual framework recognised at the highest international level, by ICOMOS and UNESCO.

Under the XIV Congress TICCIH Lille 2015, the CILAC proposes the organisation of an international forum of associations, which will give visibility to the work of national associations by geographic area: the Americas, Europe, Asia, Oceania and Africa. Each national association will have the opportunity to present its actions, achievements and publications, as well as those of its members. The forum will be open to non-member association in the limit of places available.

A space dedicated to the organisation of this forum will be provided on the conference website as soon as it online.

TICCIH News

TICCIH advocacy: Swedish industrial heritage site demolished

Dr Dag Avango

Division of history of science, technology and environment, Royal Institute of Technology, Sweden

A unique industrial heritage site in Sweden, recently advocated by TICCIH for preservation, is currently undergoing demolition – the Forsby-Köping cable way. This cable way transported limestone from a quarry in the community Forsby to a cement factory in the town of Köping in mid southern Sweden. At the time of its inception in 1941 it was the longest cableway in the world, 42 km, and ran through two counties and five municipalities. When the owner AB Nordkalk closed down the system in 1997, few other cable ways had been in operation for such a long time.

In 2003 the Swedish TICCIH section (SIM) awarded the "industrial heritage site of the year" prize to the limestone cable way. The nomination stated that the cable way was one out of very few examples of what used to be a common transport infrastructure in industrial production, in Sweden as well as internationally. Moreover, it was extraordinarily well preserved (still operational) and managed by a devoted heritage association. In 2010 a heritage expert investigation concluded that the cable way had extraordinary importance because of what it represented in the history of technology and industry in Sweden, as well as for its educational, experiential and environmental values. Its significance in Swedish history also built on its role in the 20th century modernization of the country. The limestone was used for producing the cement for large-scale housing programs that the state undertook in the decades following WW2, as a response to the massive industrial development in the country over those years.

In July 2012, however, the owner AB Nordkalk submitted an application to demolish the cable way. In response to this threat TICCIH Sweden, as well as other organisations in Sweden, campaigned to stop AB Nordkalk's plan. In early 2013 the board of TICCIH joined the effort, issuing a statement calling for preserving the cable way. TICCIH sent the statement to AB Nordkalk as well as to the relevant heritage management authorities in Sweden – the Swedish National Heritage Board (Riksantikvarieämbetet), the county administrative boards (länsstyrelsen) of Södermanland and Västmanland, as well as to the bodies governing the five municipalities. TICCIH's heritage alert encouraged all relevant actors to stop the demolition plan and instead contribute to preserving the cable way as cultural heritage.

The heritage authorities of Sweden duly noted TICCIH's heritage alert, but did not take any initiatives to act on it. To the contrary, in April 2013 the county administrative boards decided not to undertake any measures to save the cable way, arguing that neither the owner nor the municipalities had made the necessary financial and organisational commitments to preserve it. This decision gave the green light to AB Nordkalk to go ahead with their demolition plan.

Over the months that have passed supporters of preservation have taken various new initiatives to save the cable way, or at least part of it. So far they have been unable to reverse the process and since June 2013 Nordkalk has started to dismantle the cable way. At present they have removed most of the cables and cable cars from the system. Next step will be to pull down the pylons, a task the company expects to have finished by 2014 or 2015.

Why were we not able to save such a prominent industrial heritage site? To answer that question properly would require a minor research project that is beyond the scope of this newsletter note. I will point out some factors, though, that are likely to have contributed.

One of them relates to the character of the cable way - an infrastructure stretching over a large distance. To save it meant that several municipalities would have had to make budget decisions accommodating the costs of buying and maintaining the system for an unknown number of years. Achieving that in one municipality is a challenge, in five even more so. Another factor is the rather limited public engagement to save the cable way, which can at least partly be explained by the fact that it did not employ a lot of people. Most employees worked either at the quarry in Forsby or at the cement factory in Köping, meaning that relatively few people felt personal attachment to the system, as a physical anchor point for memories and professional or local identity. A stronger local popular movement to save the cable way could have pushed decision makers to save it.

The most important explanatory factor, however, is the changing climate for industrial heritage preservation in Sweden in recent years. At a conference in October 2012, professionals and researchers within the field in Sweden all gave witness to a trend in which industrial heritage preservation is not a priority anymore. The fall of the cable way is a sad but very clear example of that trend. It will be an important task for TICCIH as well as the larger community in the field of industrial heritage to reverse that tide.



A section of the Forsby-Köping limestone cable way.

Photo: Arvid Rudling (Creative Commons)

Conference Reports

Rust, Regeneration and Romance: Emerging Agendas

**Professor Mike Robinson (Director, IICH) and Dr
Matt Thompson (Senior Curator, IGMT)**

In 10-14 July 2013 at the World Heritage Site of Ironbridge, UK, the birthplace of commercial iron production, some 155 delegates came from 34 countries to attend the conference 'Rust, Regeneration and Romance: Iron and Steel Landscapes and Cultures'. Some 103 papers were presented at the conference along with keynote speakers Professor Patrick Martin, the President of TICCIH, Sir Neil Cossons former Director of the UK's National Science Museum and Professor Dietrich Soye, University of Cologne.

The conference was jointly developed by the Ironbridge International Institute for Cultural Heritage (IICH) at the University of Birmingham and the Ironbridge Gorge Museum Trust (IGMT) and was supported by TICCIH. The aim of the event was to examine the legacies of iron and steel production and consumption in terms of landscape and social change and, in the process, begin to set a new agenda for research in industrial heritage in a world radically altered through financial, social and political change. The event formed part of the IICH's research agenda on Industrial Heritage Futures and the location of the Ironbridge Gorge provided a working case-study for many of the issues discussed.

The conference itself was an active research site, exploring as it did the research terrain around a very open invitation to academics and practitioners. What was at once noticeable was the sheer diversity of disciplines represented at the conference indicating not only the openness of the field but the depth of interest in more or less every aspect of its main theme of transformation. Once seen solely as the preserve of a specialist academic field emanating from industrial archaeology, industrial heritage has found itself at the forefront of research into the transformation of society and understandings of the relationship between people and place. Notwithstanding practical issues, preservation of the industrial past has always faced the challenge of recognition in the face of a wider heritage agenda characterised by 'older' heritage and a more traditional aesthetic. So too has it faced the issues relating to the sheer size and technical complexity of its management and its non-industrial use.

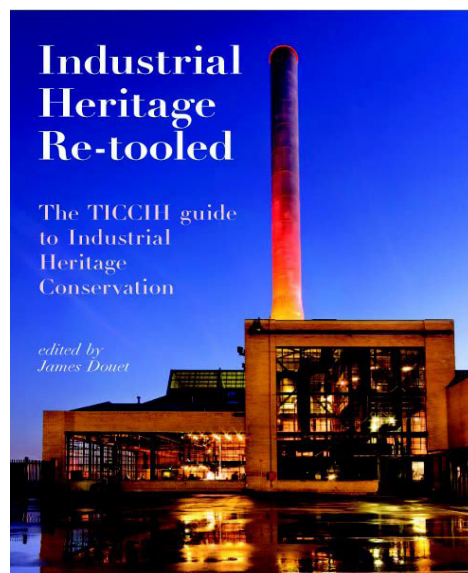
Numerous papers at the conference addressed the issues that lie beyond protection and stabilisation and relate to matters of utility, public access and economic sustainability. How do we make industrial heritage work beyond the monument or museum approach? Of course the answer is complicated and varies with respect to country, culture and conditions, but a number of cases discussed at the conference explored possible futures for industrial heritage in a post-industrial world. In doing so they pointed to the need for more research into ways in which the legacies of the industrial past can be integrated with the

structures of the present. Integral to this is an understanding of the role, not only of the material cultures of industry but also of their immaterial impacts upon identities and social practices of communities. It is the understanding of the deep and persistent connections existing between industrial artefact and process and between these and social life that assists in shaping both policy and practice.

The conference demonstrated through a significant number of papers that industrial heritage has long shaped society in culture not merely by its physical presence but also through the ways it is represented in artistic expressions - literature, photography, music and the like. At present there still remains a gap between the scientific/technological engagement with industrial heritage focusing on the protection and preservation of sites and more creative, artistic engagement focusing on the promotion of its wider messages and meanings. The key point is that these are not mutually exclusive positions. Indeed, we need to find ways of better integrating our intangible and rooted connections with the industrial past with its material legacies.

Perhaps the most enlightened, if the most challenging, agenda to emerge from this event is the need to be truly international in the scope of our research. The IICH, the IGMT and our partners are committed to gaining an international understanding of the future of industrial heritage and a genuine exchange of knowledge, not only in relation to specific sites and monuments, but also in terms of the wider socio-cultural, economic and political contexts in which our relationships with the industrial past resides.

**Industrial Heritage Retooled
The TICCIH Guide
to Industrial Heritage Conservation
On Sale Now**



Conference Reports

Industrial Heritage Symposium, Melbourne, Australia

Tanya Wolkenberg

What are the opportunities in our industrial heritage? How can reusing these fascinating places and spaces help reinvigorate our cities, towns and landscapes? What roles might they play in twenty-first century Victoria, Australia?

The remains of industry include dramatic buildings, landscapes, sites and precincts, as well as everyday structures and spaces that work together to give our cities, towns and regions their character. All of these industrial sites offer opportunity for reuse. Done well, such adaptive reuse can contribute to the building of social and cultural capital, environmental sustainability and urban regeneration.

On July 15 2013, the Heritage Council of Victoria held a symposium on the adaptive reuse of former industrial places. Hosted by the Melbourne School of Design and chaired by architectural writer and critic Justine Clark, it brought together a range of practitioners from different fields to discuss some of the challenges and opportunities in reusing our industrial heritage.

The event was held not only to engage in public discussion, but to launch an Issues Paper and set of 12 Case Studies around the adaptive reuse of former industrial places. This project of the Heritage Council of Victoria aimed to improve the ways we use such places, and demonstrate through best practice case studies what can be achieved.

The case studies highlight a range of successful Australian projects, across scales and building types. Many of these were difficult projects, dealing with complex issues such as contamination, but in all cases the results are outstanding. Despite, or perhaps because of the challenges, the projects selected benefit the broader community as well as the owners and occupants. These projects take advantage of industrial spaces and places to create new and exciting facilities for contemporary life.

The symposium was separated into two panels – one looking at New Uses and Users; the others at Urban Opportunities. In conceiving of the event, we were interested in exploring the different facets of industrial places, thinking both about how individual places could be remade and for whom; and about how industrial places or precincts sit within a larger urban (or rural) fabric.

More than 170 people attended and sat, listened and questioned for over three hours. Represented were architects, urban designers, heritage specialists, planners, developers, local council and state government staff, students, academics, artists and arts administrators.

The event and the Issues Paper and Case Studies they launch are timely in Australia, both in terms of opportunities in some of the larger urban regeneration projects occurring in former industrial areas; and as the contraction of manufacturing leaves former industrial sites begging for a new life.

The issues paper and case studies are available at <http://www.dpcd.vic.gov.au/heritage/projects-and-programs>. Videos of the symposium will be online soon.



Paddington Reservoir Gardens is a striking new urban park that makes a ruined former reservoir available for the public to enjoy and explore. Among the other case studies are a former tyre factory and an Easter Egg factory.

Conference Reports

Big Stuff 2013: Saving Big Stuff in tight economic times, Ottawa

Alison Wain

The fourth Big Stuff conference on the conservation of large technology heritage was held on the 25-27 September with the theme “Saving Big Stuff in Tight Economic Times”. Hosted by the Canada Science and Technology Museum (CSTM) and the Canada Aviation and Space Museum (CASM), the conference included three days of talks, museum, lab and workshop tours, and lots of networking.

One of the key things to emerge from the conference was that, despite the size of large technological heritage, doing the “little” things was really important. Tasks like keeping weeds down, preventing water pooling, removing dirt, building roofs over key areas, and maintaining waxing and painting programs make a real difference to the condition of large objects, and even more importantly provide opportunities for local communities to become involved with the care of their technology heritage.

A second theme that emerged was the value of thinking “out of the box”. Traditional conservation approaches do not always work well on a large scale, but it takes creative thinking to see the alternative opportunities that big technology offers. Innovative ideas included localized desalination of an archaeological paddle wheel, ways to show off the interior of a gasholder, the creation of modular technology displays to facilitate exhibition changeover, developing industrial landscapes into recreational and sporting assets and making a Cold War bunker a “go-to” place for youth visitors. Delegates were challenged to see different presentation styles as filling different audience needs rather than being “right” or “wrong”, and heard the story of keeping the “spirit of place” alive in a Birmingham silver factory by preserving 52,000 objects in the places where they were last put down.

Good planning, storage and maintenance can be hard to sell to managers and sponsors, but this may change if we learn to hit the right buttons. Presentations on a CCI/CTSM system for comparing and ranking risks, industrial paradigms for assessing durability and risk, designs for eco-friendly storage, an amazing volunteer effort to win council and community funding and support, and the development of Indumap – a web-based industrial monument planning tool – all offered ideas for speaking to bean counters more effectively and getting much needed support.

A final theme was individual projects – moving an 1812 era a gunboat hull, hand-puttying glass panes in a mining building, documenting operation at a hydro power plant, defining safe levels of access at large industrial plants, laser image capture and 3D computer modelling, the impact of changing treatment philosophies over time and the legal turbulence around acquisition of an experimental wind turbine.

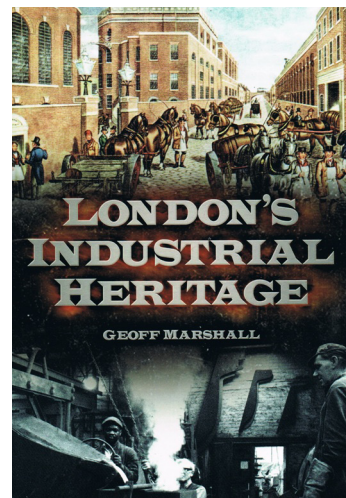
The consensus of the delegates was that Big Stuff offers an opportunity to discuss the challenges of large technology heritage from a uniquely holistic viewpoint. Regardless of the genres or materials of large technology objects, they all have community wide impacts and involve large and varied teams of people. Some of the biggest challenges are to draw these people together, develop a shared vision, and maintain their interest and co-operation through both initial project work and ensuing decades of dedicated maintenance. Big Stuff 2013 drew its delegates together and helped them to develop a shared vision, and a lot of fun was had in the process.

Presentations and papers from Big Stuff 2013 can be viewed at http://www.sciencetech.technomuses.ca/english/whatson/bigstuff_conference.cfm

Publications

London's industrial heritage, Geoff Marshall, The Industrial Heritage History Press, 2013

A readable history of industry in the British capital divided between 28 sectors, from utilities, transport, manufacturing to food.



Publications



The Legacy of American Copper Smelting: Industrial Heritage versus Environmental Policy, Bode J. Morin, Knoxville, University of Tennessee Press, 2013, 274 pages. \$ 49

This is a very good book and innovative in its approach. It is important on three levels: it is an historical, archaeological and environmental assessment of the three biggest later nineteenth-century copper-mining areas in America (two of them in the world), around Houghton, Michigan: Butte, Montana and Ducktown, Tennessee. It is also important in relating the story of the balance in former industrial (here – copper-smelting) landscapes between environmental remediation and heritage conservation as these industries decline. Finally, but certainly not least, is the invaluable provision of a toolkit to assess the stage reached in the lifetime of an industrial area and how to reach a satisfactory balance between necessary environmental remediation and the retention of a viable heritage core of key elements, with the integrity to allow valorisation and heritage-led regeneration for the community.

This is possibly the first comparative study of the difficult balance, and struggle, to be achieved between the retention of key heritage components of an industrial landscape and the necessary remediation of the worst effects of pollution. Careful analysis is made of how the heritage values of an industrial region, and indeed the concern of a community for commemorating the past, begin to grow as the industries decline.

In my experience there is a short 'nostalgia gap' when the job losses of the cessation of heavy basic industries induce a brief desire to obliterate all memory reminding a community of employment lost. Then, as noted here, residents do look to commemorate the industrial past as a means of retaining their self-respect and 'power of place'. This in turn generates the valorisation of an area with the fostering of tourism and economic development opportunities. The value and perception of the landscape can become much more important as mining and mining income dwindle in the decline phase.

All these processes are examined in great detail. Particularly revealing as an historical process are the narrative of the complex negotiations undertaken and the necessary compromises reached by outside remediators and inside preservationists as each argued for what they considered to be the best course of action.

This saga has global lessons to be learnt for all of us working in the regeneration of former industrial areas. It also elucidates key internationally-important factors at play where 82% of USA copper-smelting took place as America assumed global dominance in the later nineteenth-century, in succession to the UK and Chilean industries. The central issues driving that dramatic technological change in copper-smelting are clearly identified here. One was that copper demand increased at such a rate in the industrial period that supply lines often required significant modifications to existing technology to an ever greater extent. Secondly, the lean (0.5-5%) and sulphur-rich American copper lodes required complex mechanical, chemical and thermodynamic processes to economically extract copper from the ores.

Some of the structures remaining are awesome, such as the towering 500 ft Anaconda Stack, 'the tallest masonry-built structure on the planet', and the Quincy Copper-smelter, the most complete historic works remaining anywhere with its full set of furnaces.

Bode Morin has done a great service in producing lessons for us all from the careful analysis of the sites and landscapes of a once-great industry and clearly stated the heritage and environmental consequences available through political and community interaction.

**Stephen Hughes,
Director of Projects and Fundraising, Royal Commission on the Ancient and Historical Monuments of Wales**

Book Review

To complement the discussions that TICCIIH is promoting into modern mining in historic extraction landscapes we reprint John Baeten's perceptive review of the papers from the 2010 IBA conference in Germany on post-mining landscapes, the third in our series of book reviews from *IA: The Journal of the Society for Industrial Archaeology* (vol. 35, 2009). Our thanks to the editor, Dr Fred Quivik, and the author of the review for giving their permission.

Post-Mining Landscape: Conference Documentation (Bergbau Folge Landschaft: Konferenzdokumentation). Ed. by Internationale Bauausstellung Fürst-Pückler-Land. Berlin, Germany: Jovis Verlag Publ. Co., 2010. English/German. 240 pp, illus., diags., maps, notes. \$29.95 hb.

Our collective past, one rooted in the industry of extraction, has produced landscapes that reflect both the environmental and social impacts of mining's history. With reliance on mineral extraction fading, the number of post-mining landscapes and post-mining communities has increased, raising concerns about the future of post-mining landscapes. What directions, if any, should be taken to revitalize a post-industrial community's environmental, economic, and social milieu? The 2009 international conference "Opportunity: Post-Mining Landscape" focused on these issues. The conference was coordinated by the Internationale Bauausstellung Fürst-Pückler-Land/International Building Association (IBA), which has conducted research over a 10-year span in the post-mining region of Lusatia, located in East Germany. These ten years of study produced impressive results, including ten principles for developing post-mining landscapes. These ten principles, "intended to promote common understanding of how to tackle landscapes after they were no longer used for mining – regionally, nationally, and internationally" (p. 200), provided the inspiration for the conference.

The cover of *Post-Mining Landscape* depicts a harsh and arid scene, devoid of life. However, the book's premise is more optimistic, focusing on the future of the post-mining landscape, one whose outlook is anything but bleak. The editors divide the book into three parts: "Regions in Change," "Reflections," and "Outlook." The first part, "Regions in Change," is a compilation of success stories from nine countries on five continents. These papers explore the variety of approaches taken to transform and revitalize the post-mining landscapes. A recurring theme is the transformation of industrial landscapes into cultural ones, landscapes that celebrate the local population and their heritage, as well as introduce new uses for former mining sites. The various papers published in this section illustrate how this transformation has been carried out in a variety of ways following the concept of "preservation through new usage" (p.30). New uses for industrial sites, specifically in Europe, range in scope from cathedrals and opera houses to storage areas for cheese and wine. Once static environments were redeveloped into centers of action and use.

Cultural landscapes are not the only way that post-mining landscapes have been transformed. Other papers in the volume illustrate how, with the help of displaced populations, former mining landscapes were transformed into diverse eco-systems through reforestation and remediation, which in turn helped revitalize local economies. Reimagining the post-industrial landscape as a thriving eco-zone has promoted tourism, attracting both heritage and eco-minded tourists to the sites.

Other post-mining landscapes have been subject to a different form of industrialization. Some conference presenters discussed how government and environmental groups have worked in conjunction with industry to form plans of action upon mine closure. These plans of action set forth the steps that needed to be taken before abandonment, hoping to alleviate some of the remediation work. Unfortunately, all of the success stories in these conference proceedings were written by outsiders; missing from the discussion was the voice of the affected communities. Incorporating this voice would have provided an interesting perspective, one that is many times overlooked.

The second part of the volume, "Reflections," is a synopsis of the second day of the conference. Although well-organized, this segment would have been better titled "Plans" or "Tactics," as these better reflect its thrust. The focus was on how to convert theories of transformation into practical solutions in redeveloping post-mining landscapes. As the presenters saw it, landscape transformation and redevelopment involves three basic questions: who, what, and why? Who is a stakeholder? What are we trying to accomplish? Why are we interested in doing this? The contributors to the volume approached these questions through presentations on identity change in a post-mining community, on the strategies and tools utilized in the implementation of redevelopment, and on how new land uses could be incorporated in the overall transformation of the landscape. The IBA investigations examined identity change at both the local and regional levels and concluded that the post-mining landscape holds significant value to the local stakeholders as a visual representation of their combined heritage. Creating a new identity for a post-industrial landscape proved not as simple as "making a fish soup back into an aquarium" (p.205) and, in most cases, was a fluid process that varied from landscape to landscape. Conference participants stressed that building new skill sets within the displaced population is a fundamental aspect in the redevelopment of the landscape. One viable and frequently proposed solution was the incorporation of 'green' technologies and skills within the post-mining landscape, as well as a new land use. The conversion of a post-mining landscape into one that provides renewable energy, in the form of biomass or wind and solar farms, through the cultivation of "energy forests" (p.173) was another frequently proposed remedy. Another pervasive theme was that landscape policy should take into account an array of ideals and reflect "collective values" (p.182), that is, values concerned with preserving cultural resources as well as re-cultivation of the environment.

Book Review

The third segment of the volume, "Outlook," summarizes the conference, drawing on the ten principles developed by IBA in the course of its work in eastern Germany. The thrust of the principles was the need to balance social, economic, and ecological factors when proposing a redevelopment plan for a post-mining landscape. The summary points out that post-mining landscapes are encountered "all over the world and demand best practice" (p.208) and that while presentations at the conference reflect approaches successfully implemented in specific situations, they did not provide a universal strategy for post-mining landscape transformation. Each post-mining landscape and post-mining community should be approached on an individual basis, taking into account the environmental and cultural values of the stakeholders.

Post-Mining Landscape is an excellent resource for those interested in the redevelopment and transformation of landscapes with an extractive past. The conference proceedings review a variety of successful attempts at redefining what a landscape is and what a landscape can be. The large number of color images and maps assist in illustrating the extent of redevelopment efforts. Parts of the book are difficult to grasp, probably due to translation issues, but the central premise is clear: the importance of balance between ecological, cultural, and economic factors. Successful redevelopment plans also require open dialogue between planners and stake holders, transparency with regard to objectives, emphasis on sustainability and the environment, and involvement of local communities.

Review by John Baeten

Coming Soon

Austria - 18th International Conference on Cultural Heritage and New Technologies (CHNT), Vienna

11-11-2013 to 13-11-2013, Urban Archaeology and Correct Documentation: Documenting the Data <http://www.stadtarchaeologie.at/>

USA - Time-Based Media and the Museum, Pittsburgh

21-11-2013 to 23-11-2013, A Collection of Misfits: www.cmoa.org/misfits

Malaysia - 8th International Conference on Urban Regeneration and Sustainability, Putrajaya

03-12-2013 to 05-12-2013, www.wessex.ac.uk/13-conferences/sustainable-city-2013.html

2014

USA- Aluminum : History, Technology and Conservation, Washington, DC

07-04-2014 to 10-04-2014, www.icom-cc.org/51/news/?id=255#.Ui7UfayltjQ

UK - First international Conference on Early Main Line Railways, Caernarfon, North Wales, CFP

19-6-2014 to 22-6-2014, <http://www.rchs.org.uk/trial/gwfp.php?wpage=EMLRC>

Portugal- 12th International Conference of the European Association for Urban History, Lisbon. CFP

3/9/2014 – 6/9/2014, Cities in Europe, Cities in the world. Industrial Cities from the 19th and 20th centuries and heritage conservation. [http://www.eauh2014.fcsh.unl.pt/index.php?conference=conference&schedConf=index&page=pages&op=view&path\[\]=7](http://www.eauh2014.fcsh.unl.pt/index.php?conference=conference&schedConf=index&page=pages&op=view&path[]=7)

Italy - 2nd International Conference on Defence Sites Heritage and Future, Arsenale di Venezia, Venice. CFP

17-9-2014 to 19-9-2014, Conservation and regeneration of historic military installations. <http://www.wessex.ac.uk/14-conferences/defence-heritage-2014.html>

Opinions expressed in the Bulletin are the authors', and do not necessarily reflect those of TICCIIH. Photographs are the authors unless stated otherwise.

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There is an online membership form on www.ticiih.org

The **TICCIIH Bulletin** welcomes news, comment and (short-ish) 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 TICCIIH Bulletin is published online to members four times a year.

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