



THE INTERNATIONAL  
COMMITTEE FOR THE  
CONSERVATION  
OF THE INDUSTRIAL  
HERITAGE

[www.mnactec.com/ticcih](http://www.mnactec.com/ticcih)



Restoration of the Harlan coach by the Friends of the Vilanova-i-la-Geltrú railway museum - see the report on the meeting of the TICCIH railway section on page 2. The coach was built for the Pullman Palace company by the Harlan and Hollingworth Co of Wilmington, Delaware (USA) in 1881. It is being restored after a long and varied career on the Spanish railways.

Photo: Museu del Ferrocarril de Vilanova-i-la-Geltrú.

## number 45

Summer, 2009

### Inside:

The damage modern miners do to historic mines

■ TICCIH's great merit over the thirty-five years of its existence since the 1973 Ironbridge Congress has been to lead the worldwide acceptance by much of the cultural establishment of the industrial heritage. It is a unique event in the history of the last hundred years, for a world related to the material culture of production, one that is neither old, nor noted for its beauty nor much appreciated by society, to become part of the set of elements that we study and conserve and promote. Its value is as a material record (archaeological document) and a witness (ethnological document) to a new form of production that changed the world. TICCIH's task of making people aware and disseminating this consciousness has complemented the work already begun by the industrial archaeology associations of the first industrialized countries where this movement began.

TICCIH has made itself the world reference for the industrial heritage, has created a global network of institutions and individuals and lastly has spread its influence among national and international institutions with the goal of winning universal acceptance for the industrial heritage. The recognition by ICOMOS of TICCIH as its partner expert institution is a good example of this, as is the list of new world heritage inscriptions agreed in Seville early in the summer. Without us industrial heritage would not enjoy the recognition it has today.

Over the past fifteen years TICCIH made a substantial change in its organization. It has gained a legal status, published a regular newsletter and journal, adopted the Charter of Nizhny Tagil, has set up a website and created a logo which is recognised everywhere. In recent years we have expanded around the world, especially in the countries of Eastern Europe and Latin America.

But what exactly is TICCIH? Even as president, I sometimes struggle to answer this question. TICCIH is a complex institution that deals with a complex heritage. On the one hand, a great variety of industrial and technical sectors and on the other a reach that extends to the whole planet. Industrialization is a universal phenomenon and its sites are interrelated through transfers of raw materials, finished products, technology, people and knowledge. The heritage of one country is interlaced with another. TICCIH is an atypical organization, neither an association nor a federation of national associations. We could say it has developed a mixed formula. TICCIH is a diffuse entity, not defined by specific parameters such as number of partners or its activities or the number of associations to which is linked. Its great values are intangible and related to it being a brand mark of quality and professionalism while representing the industrial heritage worldwide and formed by networks in the broadest sense of the word. You could say TICCIH is made up of networks of people, of knowledge, of heritages whose most important assets are knowledge and relationships. TICCIH is certainly an institution of the era of the communication and information society, an institution of the Internet.

Proof of its brand value is the demand from organizers of events, meetings and publications to include our logo among their credits, to increase their prestige. A test of the network value is that happened before the time that I am referring to here. In 1993, Barrie Trinder said that without TICCIH's network it would have been impossible to compile his Encyclopaedia of Industrial Heritage. Today, TICCIH is more well-known than it is was then, the connections are greater and more well-defined, and extend beyond the TICCIH Board and the committees of national representatives.

TICCIH is an organisation of several dimensions that are difficult to quantify but which has an undeniable influence, despite its weak operating environment.

We now have to work on a third parameter, to increase our "stakeholders", those individuals, groups, companies or institutions that affect on our actions, objectives and policies. TICCIH needs to deepen relations with other institutions working on specific assets like the railways, the world of work, and so on, and to include individuals who are internationally recognized for their knowledge of industrial heritage, and finally to bring in companies and institutions to provide resources that will allow the development of actions that are not possible now but are needed to take a qualitative step forward.

If we think of the future, we should strengthen TICCIH in these three intangible parameters: increase the value of its brand so that it with the passage of time it may be considered more seriously as an institution that produces quality products, strengthen its value as a network and increase the number of its "stakeholders." The Internet and other possibilities offered by the virtual world are ideal tools for TICCIH. Lastly, I must insist that TICCIH should strengthen its thematic ties. If national organizations give us structure in a world organised in nation states, the transverse thematic sections are what will give us our international dimension.

## Opinion

Eusebi Casanelles  
TICCIH President

### TICCIH: analysis and perspectives for the future

This bulletin is produced and distributed with the support of the mNACTEC



MUSEU DE LA  
CIÈNCIA I DE LA  
TÈCNICA  
DE CATALUNYA

## ■ TICCIH on-line inventory of world industrial heritage

The new interactive database is now active and everyone is encouraged to upload details of their favourite industrial sites. The page has a help section and is pretty self-explanatory. Like any inventory, it will become more useful as it grows, so please take time to fill in the details on the TICCIH web site and explain this great project to your local groups and societies. ([www.mnactec.cat/ticcih/inventory.php](http://www.mnactec.cat/ticcih/inventory.php)).

## ■ New UNESCO world heritage

The 33rd session of the World Heritage Committee meeting in Seville last month inscribed two new natural sites and 11 cultural sites on UNESCO's World Heritage List - and withdrew one site from the List, the city of Dresden, to which many delegates to the Freiberg congress will be flying in August.

Several of the industrial sites which were inscribed were inspected and assessed by experts nominated by TICCIH last year. They included Nikos Belavilas, Michael Cotte, Jaime Migone, Axel Föhl, Francesco Calzolaio, Robert Passfield, Peter Cloughton, John Morris, Pierre Lamard and Michael Mende.

The newly inscribed sites related to industry include the Shushtar, Historical Hydraulic System in Iran, the Tower of Hercules lighthouse at the entrance of La Coruña harbour in north-western Spain, the watchmaking town of Chaux-de-Fonds / Le Locle in Switzerland for its town-planning interest, the Pontcysyllte Aqueduct and Canal in Wales, United Kingdom, and the Great Saltworks of Salins-les-Bains, France, which have been inscribed as an extension to Claude-Nicolas Ledoux's Royal Saltworks of Arc-et-Senans.

All the new and extended inscriptions can be seen on the UNESCO WHS site [whc.unesco.org/en/news/536/](http://whc.unesco.org/en/news/536/)

TICCIH recently proposed experts to carry out assessments for ICOMOS of the current crop of industrial sites, which are Augustowski Canal, Belarus / Poland: a work of man and nature; Mining sites of Wallonia, Belgium; Matheran

Light Railway in India (extension to the "Mountain Railways of India"); Upper Harz Water Management, Germany (extension to Mines of Rammelsberg and Historic Town of Goslar); and Røros Mining Town and the Circumference, Norway (extension of «Røros Mining Town »).

In helping TICCIH to find relevant people, the 'interest' section of the Membership directory is very useful, so anyone who'd like to be considered in future should keep their details current.

## ■ II meeting of the TICCIH Railway Section, Vilanova-i-la-Geltrú, Spain

The Museu del Ferrocarril de Vilanova-i-la-Geltrú is one of two national Spanish railway museums. With the liberalisation of rail services finally taking effect in Spain, there is considerable interest in comparing the experience of conserving historic materiel used by the private rail operators that have replaced so many national monopolies over the past ten to fifteen years. The need for inventories was a central issue, both of easily recognised fixed heritage and also of the vast amount of 'movable' historic goods or assets still used on the railways, but which may become redundant or obsolete at short notice. TICCIH's new international database was presented as one way of gathering comparative information on world railways. The other main issue discussed was the approach to inscribing railway heritage on UNESCO's World Heritage List, with several differing strategies on offer for the complex task of identifying historic railways with their infrastructure, stations, rolling stock and so on and getting them recognised.

The meeting coincided with an exhibition on 40 years of automatic gauge changers, fitted on the Spanish railways to cope with up to six different rail diameters but specifically to connect with the European standard gauge at the frontier with France.

Speaking of the French situation, Marie-Noelle

Polino of the International Association of Railway History (AIHF) noted the withdrawal of the state from railway conservation and the decline in volunteer participation, a trend partly offset by the rise of the tourist or heritage railway. This phenomenon is also visible in Mexico. José Luis Garcia, president of the Section, explained how passenger rail services had been decimated in his country but that there were now some 22 network museums.

AIHF chair Henry Jacolin drew delegates' attention to the Riga Charter approved by the Federation of European Museum and Tourist Railways (Fedecrail) in 2005, a very pertinent 'statement of principles which guide the conservation, restoration, maintenance and repair and use of historic railway equipment'.

Speaking on the issue of World Heritage railways, both Keith Falconer of English Heritage, who prepared the document for the Great Western Railway tentative bid, and Günter Dinhold, of the Austrian OBB railways, spoke of the problems of reconciling conservation aims with operational needs. In Britain, inscription of the GWR has been opposed by Network Rail, the national infrastructure company, and is unlikely to be put to UNESCO. On the Semmering railway built between Vienna and Trieste and one of the earliest industrial World Heritage Sites, Günter showed many instances of works to the railway which would not be approved on conservation grounds. But the current proposal to build a new tunnel through the Alps will take commercial traffic off the old line completely, presenting a new challenge to the 160-year old line.

With the presentations compressed into a single day the meeting was intense but effective. Pilar Garcia, the director of the Vilanova railway museum and organiser of the meeting, promised to publish the discussions which followed the presentations so a wide public can benefit from them.

■ Thanks to all the contributors.

Photographs are by the authors unless stated otherwise.

### TICCIH Officers

*President:* Eusebi Casanelles  
Museu de la Ciència i de la Tècnica de Catalunya  
Rambla d'Egara 270,  
E-08221 Terrassa, Spain

*Life presidents:*  
Sir Neil Cossons  
Professor Marie Nisser  
Professor Louis Bergeron  
*Secretary:* Stuart B. Smith OBE, 'Chygarth',  
5 Beacon Terrace Camborne, Cornwall TR14  
7BU, UK, t: +44 01209 612142, e: [stuartbsmith@chygarth.co.uk](mailto:stuartbsmith@chygarth.co.uk)  
*Editor:* James Douet, office of the President

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.

**Editor:** Articles and news of recent and future events should be sent to the Editor, James Douet, Museu de la Ciència i de la Tècnica de Catalunya, Rambla d'Egara, 270, 08221 Terrassa, Spain, [ticcih@gencat.net](mailto:ticcih@gencat.net).

**Design:** Xavier Solé/Disseny Visual, SL  
**Dipòsit Legal:** B-23.114-1998  
**ISSN:** 1605-6647

## Can the World Heritage List protect South America's greatest mine?

■ The conquistadors were working the mines of Porco as early as 1538 and it seems likely that it was from here that the Spaniards first heard of the legend of neighbouring Potosí. The veins of Potosí were so rich that by 1546 all the mines within the surrounding area were abandoned, and within a few years, Potosí became a town of 14,000 people and the single richest source of silver in the known world.

Although controlled economically by the Spaniards, prior to 1570 the Indians were free miners. They bought concessions on the mountain, and also worked for the Spanish mining entrepreneurs on a contract basis. Silver ores were either crushed and ground by hand, or else by "water engines" supplied by long lines of leats or by "blood engines" (the Spanish term for mills worked by animals or Indians in harness). However, the smelting of ore was still carried out by the Indians in the traditional pre-Columbian fashion, using small wind-draught furnaces called *guayras* fuelled by *ichu* grass. Contemporary accounts record the Cerro lit up at night by the light of thousands of such tiny furnaces.

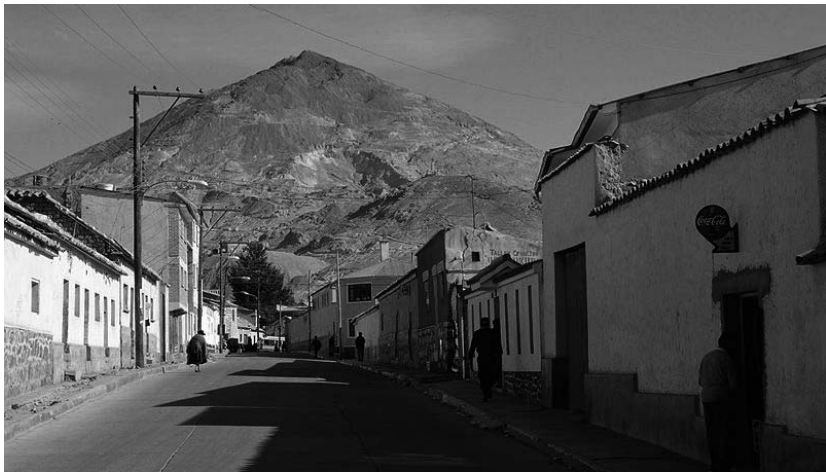
By 1566 the best veins of easily mined ore were exhausted. To maintain the flow of silver, Spain had to secure Imperial control of both the processes and the product. The colonial authorities dispatched the progressive Viceroy Don Francisco de Toledo to Potosí. Toledo reforms included the establishment of a new mint, smelting and refining furnaces in the town, the re-introduction of a conscript labour system (a form of the old *mita* labour tax first imposed on local peoples by the Incas), and other technological improvements including the patio or mercury-silver amalgamation process developed in Mexico for the treatment of the now poorer *fahlerz* ores. The most immediate effect of the introduction of this process was to break the only remaining Indian control over production. Within the space of a few months 6000 native smelters were replaced by a few hundred refining workshops. Amalgamation was brought to Potosí in 1571, the timing being quiet important since this was linked to the discovery of the mercury deposit at Huancavelica (1500 kilometres north of Potosí) in 1566.

The earliest technical account of the Potosí process describes the ore being heated in vessels with brine prior to thorough mixing with mercury droplets. It was then agitated until amalgamation was complete, following which the recovery of the silver and separated mercury was undertaken in the refining furnaces.

At the height of activity and production in 1574 there were some 150 *ingenios* or water powered crushing mills at work, supplied by

## The silver mines of Potosí, modern mining threatens an epic heritage<sup>1</sup>

Dr Simon Timberlake  
Department of Archaeology, Cambridge



some 20 reservoirs, accompanying dams and leats, of which the cost of maintaining was said to be some 2 million pesos a year.

By 1600 some \$30.25 m worth of silver was arriving back in Seville (see the article on the Seville mint on page 7. Ed.). Despite losses to piracy and considerable embezzlement en route, some 85% of all the silver leaving Peru still reached its destination. The greatest loss from the Spanish coffers was in the debt repayments to the English, Flemish and Genoese banks: unbridled borrowing to pay for Spain's lavish domestic expenditure and European military campaigns meant that much of the silver from Potosí legally ending up in the hands of Spain's enemies or competitors.

The fortunes of Potosí reached a low point in 1818 coinciding with the drop in the silver price following the discovery of the Comstock Lode in Nevada. Following the collapse of the tin market in the mid 1980s and the closure of the state-owned COMIBOL mine, production here has been small-scale and undercapitalised, though unemployed miners have since begun to trickle back since the Bolivian government introduced new incentives in the 1990s.

Currently up to 50 small mining co-operatives are working on the mountain. The problems of acute poverty for the majority of the Quechua living in Potosí remains the same, as do the conditions of mining; with collapsing tunnels, bad air, silicosis, and on occasions the use of

child labour underground.

The Cerro Rico has been designated as a World Heritage site and UNESCO is said to be backing restoration projects for about 2000 colonial buildings. However, the kilometres of leats, reservoirs, mills, tunnels dating from the time of Viceroy Toledo, alongside earlier remains of mines and native *guayra* furnaces, remain largely unrecorded, and threatened by the activities of small-scale mining undertaken by the co-operatives. More significant still is the threat to the whole site from a plan to opencast the mountain. If this went ahead, mining would effectively remove what has become over

Looking from Potosí up to the Cerro Rico. Mining plans could remove much of the mountain.

Photo © Christophe Meneboeuf, Wikipedia Commons

centuries a national emblem, and with it its World Heritage title. Not surprisingly, more than 97% of the people polled in Potosí said they were against this plan, the alternative option being large scale underground mining to dig the mountain out from the centre, thus preserving both its shape and surface remains ([www.unesco.org/courier/2000\\_03/uk/dici/txt1.htm](http://www.unesco.org/courier/2000_03/uk/dici/txt1.htm)).

There is a real and urgent need to document this site properly. As a precursor to this, and at the very earliest opportunity, a small fact-finding mission should be organized to assess the surviving industrial archaeology and also the current and future threats posed to it. I would be pleased to hear from colleagues (particularly those in South America) who might be interested. The time to act is now.

Contact: st410@cam.ac.uk

<sup>1</sup> This article is a much shortened summary of the author's paper "Treasure of the World, King of the Mountains, Envy of Kings" The Imperial Spanish Silver mines of Potosí, Bolivia' (Mining History volume 14 (4) 2000).



■ Cerro de San Pedro is a mining town located in a canyon at the doors of the Sonora Desert whose origins date back to 1592 when rich deposits of gold and silver were discovered. The region was soon populated by Spanish families and miners who brought large groups of Indians from Central Mexico. The sudden population of Cerro de San Pedro by groups of very different ethnic origin created a new and vibrant culture. Lack of water caused the establishment of a new administrative seat in a nearby valley, the city of San Luis Potosí, which became the capital of a large territory. At the end of the Colonial period, the richness of the mines had



The old mines and village in 2004.

## The Cerro de San Pedro mines, San Luis Potosí, Mexico

**Miguel Iwadare**  
National Representative, TICCIH Mexico



Blasting in the opencast pit just beyond the village this year.

Photos: Tamara Hermann, Beatriz Septién, FAO (Frente Amplio Opositor a Minera San Xavier), and Miguel Iwadare.

converted San Luis Potosí into the third largest and richest city in New Spain and an important neuralgic commercial center.

Cerro de San Pedro had three important bonanzas. The last one started in the early 20's when the ASARCO (American Smelting and Refinery Company), property of the Rockefeller family arrived to San Luis Potosí. ASARCO ended its operations in 1947 and dismantled all its installations, including the railway. Nowadays Cerro de San Pedro has a population of only 150 inhabitants, some of them still working as miners.

In 1994, a Canadian mining company, Metallica Resources Inc. launched a mining project in Cerro de San Pedro, but this was highly contested. Many NGO's, mostly ecological, questioned the project arguing that it would pollute the air and water and destroy the fauna and flora of the region. Other organizations, like TICCIH and ICOMOS, questioned the protection of all the monuments and cultural landscape of the district in the middle of an open pit. Finally in 2005, after a long not-so-clear legal battle, the company began to work. The project comprised the exploitation of gold and silver deposits by a method called open-pit-mining by opening a crater in the site. The run-of-mine ore is crushed and transported to the leach plants by aerial bands. Grounded rock that contains no gold or silver is deposited

in the mountains surrounding the pit and the gold is extracted by cyanidation in large ponds.

More than 373 hectares are being profoundly affected by the project, including the historic mines, the historic industrial infrastructure such as processing plants, workshops, laboratories, canals, bridges and housing complexes, some of them dating from the XVI century and most important, the hill that is represented in the coat of arms of San Luis Potosí.

In 1997 the National Institute of Anthropology and History registered and catalogued the industrial and historic monuments of Cerro de San Pedro, and established a zone of monuments. So far, fourteen catalogued industrial buildings located out of the protected zone have been demolished and ten of the colonial mines have all but disappeared, as they are located into the open pit. Twenty more industrial buildings and infrastructure are at risk. Moreover, the landscape has been permanently altered despite the promulgation of new laws aimed to protect Cultural Landscapes of Historic Relevance. Intangible values such as the sense of belonging, traditional craftsmanship, social relations and the industrial history of the region are fast disappearing, too.

The colonial nucleus of the town in the middle of the protected zone is also being affected

because the open pit is just 50m from the main square. Around 110 monuments have been catalogued including two churches, two hospitals, administrative buildings and houses. A soils mechanics analysis made by a seismic scanner revealed that the zone is highly unstable and not suitable for a continuous blasting, resulting in the possible destruction of the historic monuments of the town. The natural heritage is fast disappearing, too, and the pollution of water and air by cyanide and mineral dust will eventually affect the inhabitants of Cerro de San Pedro.

In 2004 TICCIH sent a letter to the governor of San Luis Potosí, expressing concerns about the future of the industrial heritage in the region, especially Cerro de San Pedro. The letter was never answered. TICCIH has also been invited to participate in discussion tables and academic events promoting the conservation of the town and its mines. The case of Cerro de San Pedro has also been published in *Patrimoine de l'industrie* #13, and presented in several ICOMOS and TICCIH academic events in Mexico, South America and Europe.

At the meeting of the World Heritage Committee in Seville in June, UNESCO postponed for one year the inscription to the World Heritage List to San Luis Potosí, Almadén (Spain) and Idrija (Slovenia) on the Intercontinental Route of Mercury and Silver, because the Mexican dossier had some inconsistencies. Basically, the dossier failed to mention and register the mines and industrial monuments of San Luis Potosí (located in Cerro de San Pedro), as requested by local authorities, because the Canadian mining company was already working in the site. UNESCO questioned the inexistence of an operational guideline for the management of the mines and its surroundings, unaware that these are in process of being destroyed. On the other side, Almadén and Idrija registered all its mining properties along with the urban settlements and landscape surrounding them. Unfortunately, the case of Cerro de San Pedro is not unique. Small mining towns and cultural landscapes are at risk of disappearing in Peru, Chile, Argentina and other regions of Mexico and Latin America (see the article on Potosí, Ed.) because the voice of the communities is minimized by the federal governments, who frequently seem to work for the big companies that promise economic benefits for the region. The fate of Cerro de San Pedro is uncertain, but the people of this community is still fighting to rescue what is left from its mines in order to preserve the memory of a region and its great industrial legacy.

## Japan

### The Industrialisation of Japan

**Stuart B. Smith**  
TICCIH Secretary

■ For over 12 years, Stuart Smith, the General Secretary of TICCIH, has been working with Ms Koko Kato, the author of a book on industrial archaeology worldwide, and they are now working with Sir Neil Cossons and several foreign experts in order to put forward the idea of a world heritage site for the industrialisation of Japan based on Kyushu and Yamaguchi. This project, sponsored by six prefectures and eleven cities, is possibly one of the largest world heritage sites to be considered and is already included on the Japanese World Heritage Site Tentative List.

There are remarkable survivals of the early attempts to provide European style furnaces and factories, built entirely from illustrations in text books, in Kagoshima and Hagi, and archaeological remains in Saga. In Nagasaki you can see the development of the earliest buildings of an ironworks and shipbuilding yard, which is now the site of the Mitsubishi shipyard, with the complete survival of a ship repair dock sponsored by Thomas Blake Glover from Aberdeen, who was also instrumental in developing modern coal mining technology in Hashima and Takoshima. Modern coal mining was further developed at Meike Port and Meike mines which not only supplied local demand but also that of the Pacific fleet through Shanghai and exports into China.

The final development of the story is to be seen in the Yawata ironworks at Fukuoka where a fully integrated iron and steelworks was constructed from German technology from 1897 onwards, being finally successful in 1910. The Japanese Chief Engineer was trained in Freiberg!

This application is of fundamental importance to the Japanese as they have only previously put forward one industrial site in Japan, at Iwami-Ginza. This is for a very large area over many different sites and includes the protection and nomination of many which are still in operation. Currently the Japanese do not have any legislation to cover this issue but this is something which is being negotiated. Of particular concern to the consultants is the fact that the period of the Meiji restoration, from 1870 to 1912, is one which is very little considered in the Japanese educational system. To many Japanese people it is seen that the natural progression of industrialisation and the growth of the Japanese Empire was the Second World War and its disastrous consequences for Japan. However, the consultants believe that unless people understand this story they will never understand why Japan rose from being an

undiscovered country in the 1850s to the world's second superpower in the present century.

## Spain

### Resurrection of the Segovia Mint: Europa Nostra Prize - 2009

**Dr. Glenn Murray**

■ For years what has seemed like an impossible dream is finally becoming a reality. The famous Segovia Mint (1583) is being brought back to life, thanks to the 15 years of dedicated effort by the Friends of the Segovia Mint Association to get the project off the ground. The Association's work to attract world attention to the restoration and museum development of the Mint has recently been given a boost with project director Dr Glenn Murray being awarded the prestigious European Union Prize for Cultural Heritage / Europa Nostra Award – 2009, after being nominated for the distinction by the Segovia Chamber of Commerce. The award in Category 3 was for "dedicated service by individuals or organisations whose contributions over a long period of time demonstrate excellence in the protection, conservation and enhancement of cultural heritage in Europe". The award requires the contribution to have a European-wide impact. Murray and the Association he leads have been recipients of many other prizes, the most recent being Segovian of the Year Award and the Peñalosa Medal. Murray has steadfastly promoted the restoration of the Segovia Mint for over 21 years when he first designed and presented the idea to City Hall in 1988.

Reconstruction work finally began on February 14, 2007, now known and celebrated in Segovia as "Mint Day". The Architectural project was designed by Eduardo de la Torre, and his team at Gerencia y Proyectos S.A., of Madrid, and is based on the Museum Concept Plan drawn up for Segovia City Hall by Dr. Murray as Technical Director of the Royal Segovia Mint Foundation, with the help of its Scientific Committee, in 2004. The construction work, being carried out by Volconsa-Velasco, is moving along quite well and should be finished by late 2010.

Meanwhile, the Friends of the Segovia Mint Association continues to investigate and promote the Mint's unique technological history. In 2004, TICCIH-Spain recognized the Segovia Mint as the oldest example of industrial architecture remaining in Spain, and made a commitment to seek international recognition for the plant. Shortly thereafter, Glenn Murray wrote an opinion in the TICCIH Bulletin (Winter 2004, n° 27, page 1) presenting the idea that the Segovia Mint is nothing less than the world's oldest, still

standing, industrial manufacturing complex designed specifically for in-series mechanical production. Now, the Chamber of Commerce and Industry of Segovia, using the extensive and well documented scientific and technological reasoning developed by Murray in a text which it has recently published, is requesting recognition of the facility by TICCIH and ICOHTEC as the "oldest most advanced and complete industrial manufacturing plant remaining in the world". This claim is based primarily on the highly complex and precision-oriented industrial processes used in the production of coinage as documented by Murray in the above-mentioned book. At Segovia this process was mechanized as the 14th such mechanical mint in the world, and today is the oldest and most complete still standing. Thus, the Segovia Mint was mechanically producing millions of identical high precision products, in series, in a specially built and completely departmentalized manufacturing plant a full 200 years before the Industrial Revolution. The Chamber of Commerce has also called for the Mint to be recognized as a World Heritage Site by UNESCO.

The Association has recently updated its website [www.segoviamint.org](http://www.segoviamint.org) with hundreds of new photos of the reconstruction of the building, historic coins produced at the site, and modern coins which the members of the Association and the general public are able to strike themselves on a specially-built hammer coining press. The past, present and future implications of the historical importance of the building, its future use as a living and working museum of minting technology, and the participatory nature of the Association's hammer struck coining program, all converge to make this a unique project with a distinctive European dimension. As such, the effort to install the museum contents and displays in the finished building is recognized by Segovians as the "Feature Project" of the city's candidacy to be the European Capital of Culture in 2016. It is important to note that while the reconstruction of the building has been fully financed by the three administrations (local, regional and national), there is still no funding earmarked for the installation of the museum elements as drawn up in the 2004 Museum Concept Plan. The



The Segovia Mint as seen from the nearby Alcazar castle.

Association thus aims to help the city's candidacy efforts for 2016 via a Mint awareness campaign, and at the same time have the candidacy effort help attract funding for the creation and installation of the museum in the finished but empty building.

## France

### New industrial museums

Dr Geneviève Dufresne

#### Cité internationale de la dentelle et de la mode, Calais (International City of lace and fashion of Calais)

■ This new museum has been in preparation for many years and opened in June 2009. The museum is installed in a remarkable building, a former mechanical lace works comprising three buildings forming a U-shape. This was the Boulart factory, active up to 2000. Its generous space allows for a complete presentation of the technical aspects of lace production, in particular thanks to the exceptional collection of Leavers looms, purchased over several years and, for the most part, still in working condition. The Alain Moatti & Henri Rivière team of architects was selected by a jury of councillors and professionals in the spring of 2004. The Pascal Payeur studio is responsible for the scenography and museography. A contemporary construction facing the quays, the town and the port acts as a figurehead to complete this structure. On the façade, a screen-printed design of Jacquard cartoons symbolises machine-made lace and emphasises the project's emblematic aspect. From the outset, the museum was anxious to associate the Calais lace-makers still working, and the local population. The city of Calais has also acquired another old lace-making factory in order to shelter its reserve collections and to have a facility for the restoration of the machines and to guarantee the correct treatment of the annex collections, in particular the textiles.

#### Musée du sel (Salt museum) Salins-les-Bains

■ Since January 2008, the salt-works at Salins-les-Bains have been placed on France's tentative list of potential world heritage sites as an extension to the Arc-et-Senans site, on UNESCO's world heritage list since 1982 (but see TICCIH News. Ed.). At that date, the principal justification for listing was Arc-et-Senans' exceptional architecture, designed by Claude-Nicolas Ledoux. Today, the extension of the world heritage perimeter gives Arc-et-Senans itself more sense, since it cannot be understood without association with



the works at Salins, to which it's linked by a 'saumoduct' some twenty kilometres long. The site at Salins represents a history of salt production dating back to the Middle Ages. The restoration of the Salins works and the creation of a new museum are of course an integral part of the world heritage candidature. The project has received the support of the European Union, the French State, the Franche-Comté region and the Jura department. The conservation and interpretation of the collections are placed under the direction of the Musées des techniques et culture comtoises.

The salt-works at Salins-les-Bains represent one of the major sites of French industrial heritage, given total statutory protection in November 2008. The new museum opened its doors on the 18th April, the visitors discovering the restored site of salt production and new exhibition spaces. The itinerary will comprise the salt warehouses, hitherto not visited. Bearing witness to the golden age of 'white gold', this part of the museum will present the industrial site in its totality and will accommodate an audio-visual presentation. Important restoration work was necessary, mobilising numerous specialists. All the objects and documents on display in the museum have been patiently studied and restored in order to present the history of salt at Salins-les-Bains as faithfully as possible. The programme also involved the restoration of

what is now a unique object in France, one of the last pans used for boiling the salt solution. Its survival was threatened by corrosion, but various experts have offered advice on how to conserve this object. The operation is piloted by the services of the Ministry of Culture and will hopefully serve as a model for future restoration programmes in comparable cases, with a budget: € 7.5 million.

## China

### Mining Heritage in China

Que Weimin

World Heritage Research Center, Peking University

■ P. R. China discovered, developed and has utilized mining for over 2000 years. China possesses many mining heritage sites around the country, although without one mining project in the UNESCO World Heritage List.

On the national heritage protected level in China, as well as 11 National Protected Monuments managed by the National Cultural Heritage Bureau, the National Mining Park system was set up in 2005 by the National Territory Resource Bureau. This plays most important role to protecting the mining heritage in China, as well as the whole industrial heritage.

The first list of National Mining Park consists of 28 sites, distributed through 20 provinces, especially along the eastern side of the country (see map).

Among the 28 Mining Parks, nine are metal-mining sites (gold, iron, precious metal and mercury), 12 are non-metal mining (coal, oil, salt, kaolin and mica), two sites are usual stone quarries and five are special stone extraction (marble, Balin, Shoushan, jade, diamond).

For scientific exhibition, research and tourism, the Mining Park has influenced the society gradually. The second list of National Mining Park is going on the process for nomination.



No.21 Hubei Huanshi Iron Mining Park.



## Indonesia

### Asian Industrial Heritage and other stories: an introduction to the modern Asian Architecture Network (mAAN)

Moulshri Joshi

What was being referred to as a loosely-knit network of modern architecture enthusiasts, mAAN in Asia is steadily emerging as a dynamic collaboration of architects, historians, conservationists, anthropologists, sociologists, landscape architects, artists, students and teachers from over a dozen cities in Asia working towards re-establishing and refreshing the way people connect to their built heritage. Over the years, mAAN has had memorable rendezvous with industrial sites...sometimes by chance but almost always by design, as the vast effect that industrial sites have on the collective cultural heritage of Asian cities they are difficult to exclude in any study of cities. The mAAN Macau Declaration (26 July, 2001 [www.m-aan.org](http://www.m-aan.org)) shares this belief and concern very vividly. "Industrialization, urbanization, westernization, colonization, decolonization and nation-building-these phenomena have variously defined Asian modernism. Modern Asia evolved through sustained interactions with the West, which has had a constant presence in our collective consciousness. This shared experience of the world unites us as Asians. The history of dealing with the West, with our neighbours and with ourselves, is manifested in the myriad forms of our architecture. The history of modern architecture in Asia is the history of how Asians have become modern.

As I write this introduction to mAAN - a precursor to the mAAN-TICCIH formal meeting at the forthcoming Freiberg Congress - a huge social experiment is already underway in Padang, Indonesia. ("International Design Workshop: The Great Padang Cement Factory Revitalization" (29 June - 8 July, 2009). PT Semen Padang, the oldest and one of the largest cement manufacturing companies in Indonesia, has initiated cooperation with mAAN to guide the revitalization process of their 100 year old factory plant of Dutch parentage & Danish manufacturing in West Sumatra. In its efforts to evolve an inclusive and educational agenda in industrial revitalization - which can be used as a model for development for other such sites, mAAN is acting as the catalyst in the change by connecting industry to community, education to practice, legacy to memory and past to the future, simultaneously. Over a hundred people combining students, academics, historians, architects, conversation architects, landscape architects, planners, policy experts, film makers, engineers and project managers, are



The 99 year old PT Semen Padang factory forms the backdrop of a design dialogue at The Great Cement Factory Revitalization Workshop 2009.

Photo by Suditya Sinha

engaged in an intensive creative exploration. Teams are exploring diverse interventions while a dedicated group is documenting the process in various media, languages and for a mixed audience as an extension to mAAN's role as an engine for disseminating information in the public realm.

This methodology of generating collaborative enterprise between members and to implement research into practice is unique to mAAN. This also reflects mAAN's understanding that its team is "large group of diverse individuals with specific skills and knowledge and that mAAN is able to bring these people together for positive & proactive purposes from both theoretical and practical perspectives".

The confidence to believe that the mAAN team is in a position to sculpt a new dream for such derelict sites across Asia comes largely from the success of the Great Shanghai Factory Revitalization Workshop held at the abandoned industrial estate by the Huang-pu river in Shanghai in 2004. After conducting inventory building field school in Medan, Ulan Batar, Samarkand and Malacca, the case of industrial site in Shanghai came to mAAN's notice where the government was making preparations to dismantle the structures. Over 70 students from China, India, Japan, Indonesia, Malaysia, Singapore, Italy, Macedonia, Mongolia, Korea and Turkey under the guidance of architects & professors from various universities camped at the factory site for a fortnight, exploring through design & discussion ways to revitalize the historic site and reestablish its links to the city. The

outcomes of this collaboration were as fascinating as the process itself. Not only were numerous creative strategies engaging with the historic site established, this collective energy became the catalysts for the eventual revitalization of the factory that was awarded the UNESCO Asia Pacific Award for Conservation of Cultural Heritage.

*Notes: "Collaboration is the Lifeblood of mAAN" Factory Transformed: The Story of the Great Shanghai Factory Revitalization Workshop, published by mAAN (2006)*

## Peru

The new blog Industrial Heritage in Peru ([patrimonioindustrialperu.blogspot.com/](http://patrimonioindustrialperu.blogspot.com/)) has news from the Comité Peruano de Conservación del Patrimonio Industrial - Copecopi (Peruvian committee for industrial heritage), and information on the conservation of industrial heritage. As well as being informative, the blog aims to push Peru's industrial heritage into the wider discussion of cultural heritage in the Andean state. Everyone is invited to visit the site and make comments, send photos and create links with their own sites.

## Croatia

In Croatia, the TICCIH representative Miljenko Smokvina, the president of Pro torpedo, is now the vice president, after 6 years' hard work. His place as president has been taken by Daina Glavocic who will announce further information about the next meeting on shipbuilding heritage in Rijeka during the XIV congress in Freiberg.

## Conference Report

### 8th International Mining History Congress

Cornwall (United Kingdom)  
12-15 June

**Dr Peter Cloughton**  
University of Exeter

■ The universal appeal of mining heritage was on display in Cornwall (United Kingdom) over the weekend of 12-15 June with the 8<sup>th</sup> International Mining History Congress. Here was 'industrial' heritage in its widest sense – mineral production for a wider market; from the Bronze Age to the 21<sup>st</sup> century, its economic and social history, archaeology, heritage conservation and interpretation, be it in Argentina, Portugal, France or Australia. The Congress itself is a loose network of mining history interests which has, since 1985, been providing for peripatetic gatherings, in which to share the product of current research with an international audience. The meeting is devoted to 42 research papers and a couple of field trips. This year was the eighth meeting, organised by a group affiliated to the University of Exeter and supported by the university's campus in Cornwall, Geevor and King Edward Mining Museums, and the Cornwall and West Devon Mining World Heritage Office.

During the Congress, the conservation of industrial heritage was at the forefront of discussion on subjects which included the Moat Pit at Culross, in Fife (Scotland), when Donald Adamson from the University of Glasgow explained the archaeology and interpretive potential of the inter-tidal shaft which provided access and a shipping point for coal from 16<sup>th</sup> century undersea workings; the interpretation and public access to 20<sup>th</sup> century wolfram mining on ecclesiastical estates in northern Portugal (João Meixedo, Instituto Superior de Engenharia do Porto); the 19<sup>th</sup> century copper mine and associated settlement at São Domingos, also in Portugal (Maria João Ramos P. Silva); and the future for copper mining heritage in South Australia (Greg Drew, a geologist with the state government). Many presentations also highlighted the value of research touching on conservation, for example the detailed work on the archaeology of late-medieval silver mining in Les Cevennes (Gard - France) carried out by Marie-Christine Bailly-Maitre of the French CNRS, or the technology and archaeology of blasting, using gunpowder, in the mines at Le Thillot (Vosges - France) as early as 1617 (Francis Pierre, a research associate at the Sorbonne / Université de Paris).

Presentations covered the economics of mining whilst others examined the social aspects of and its impact on the community, be it health, safety or identity. Inevitably, for a Congress held in Cornwall, the occupational identity of the

Cornish in mining fields across the globe was touched upon by many speakers. In their introductory lectures, Paul Deakin of the Institute of Cornish Studies and Ainsley Cocks of the World Heritage Office, emphasised Cornish identity and its links to international mining which might form the basis for a proposed expansion of the World Heritage inscription. The subject was later brought into focus by Philip Payton, also from the Institute of Cornish Studies, in respect of comparisons between Grass Valley (California) and Moonta (South Australia), and differing roles ethno-occupational identity played in those communities from the 19<sup>th</sup> century to the present day. Gender too played a part in ethnic identity, emphasised in the role of women and immigrant workers in the Provençal coal mines over the same period, resulting in a retention of a rural identity for mining communities despite their close proximity to the city of Marseilles (Hanna Diamond).

All the presentations were of the highest quality, and stimulated lengthy discussion. It was literally wall-to-wall international mining history and archaeology for four days. It is hoped to publish the proceedings of the Congress on the Web if not in book form. Monitor the Congress web pages at the University of Exeter - <http://huss.exeter.ac.uk/history/imhc/index.php> - for further details.

## TICCIH Conferences

For all conference information consult [www.mnactec.cat/ticcih/agenda.php](http://www.mnactec.cat/ticcih/agenda.php)

### Germany

#### XIV TICCIH Congress: 'Industrial Heritage, Ecology and Economy'

Freiberg, 30 August – 5 September, 2009

■ TICCIH's triennial international congress, organised by the Institute for History of Science and Technology, (IWTG) of the Technical University of Freiberg, in cooperation with TICCIH-Czech Republic and TICCIH-Poland. Info: [info@ticcih2009.de](mailto:info@ticcih2009.de) or see the congress website: [www.ticcih2009.de](http://www.ticcih2009.de) for full programme.

### Argentina

#### II International meeting on the agro-industrial heritage,

Córdoba, 4-7 November 2009. Call for papers

■ This conference follows the first meeting in France last year. In

Spanish with simultaneous translation to English. Details on the TICCIH website.

Info: [amarillalaura@hotmail.com](mailto:amarillalaura@hotmail.com); [comunicaciones@civiles.org.ar](http://comunicaciones@civiles.org.ar)

### Finland

#### 'Reusing the industrial past': First joint international conference between TICCIH and ICOHTEC, with Worklab

Tampere, 10-15 August, 2010. First call for papers (deadline November 2009).

■ Conference organised by the Museum Centre Vapriikki at the University of Tampere and old factory premises in the centre of Tampere. The programme will include scientific and plenary sessions, business meetings and general assemblies of the organisers.

Conference Info: [www.tampere.fi/english/vapriikki/index.html](http://www.tampere.fi/english/vapriikki/index.html)

## World Conferences

### Germany

#### Archaeology of bridges

Regensburg, 5-8 November

■ Development of the construction of bridges, from prehistory to early 19th century. Info: [bridges2009@t-online.de](mailto:bridges2009@t-online.de)

### Slovakia

#### 3rd International Conference of the International Railway History Association

Bratislava, 24-26 September

■ Railways in transition: Eastern Europe's railways in the 20th and 21st centuries. Info: [www.aihc-irha-aihf.com/](http://www.aihc-irha-aihf.com/)

### Czech Republic

#### 5th "Vestiges of Industry" biennial

Centre for Industrial Heritage

at the Czech Technical University (VCPD)

Prague, 9-10 October

■ The usual sharp programme of exhibitions, an international expert conference and cultural events, the objective of which is to explore current themes in the field. Info: [vcpd@vc.cvut.cz](mailto:vcpd@vc.cvut.cz), [www.industrialnistopy.cz](http://www.industrialnistopy.cz)

### Serbia

#### 14th annual World Canals Conference

Novi Sad, 23 - 25 November. First call for papers.

■ Waterway managers, professionals in all related fields, users and opinion leaders meet for a full programme of technical sessions and site visits; a unique opportunity to discover the Danube. Info: [www.euromapping.com](http://www.euromapping.com)