bulletin

TICCIH

The International Committee for the Conservation of the Industrial Heritage

www.mnactec.com/ticcih

Toronto Union Station, Canada, c.1930. East end of train shed with Royal York Hotel in background.
Source: Archives of Ontario

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Inside:
Bridges of iron

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MUSEU DE LA CIÈNCIA I DE LA TÈCNICA DE CATALUNYA

Opinion

Dr Jan af Geijerstam

The need for TICCIH to act in Asia

■ I recently returned from two week's travel in India, conducted independently and as member of the Board of TICCIH Sweden. It resulted in a number of contacts and initiatives that I would like to explain. I believe the time is ripe for a collected effort to deepen and extend TICCIH's contacts with Asia. This is especially urgent since the long-expected TICCIH conference in China had to be cancelled.

In the spring of 2006, Divay Gupta, our representative in India who works at the Indian National Trust for Art and Cultural Heritage (INTACH), proposed an intermediate TICCIH conference in his country, but nothing came of it. That proposal still stands, though as an NGO, INTACH's economic resources are limited.

I am quite convinced that an excellent conference can be carried out in India.

Two prime candidates are firstly Mumbai, which has a rich industrial heritage with several areas of international importance including the textile mills and the port, today under extreme threat from change, and secondly the former Union Carbide factory site in Bhopal, Madhya Pradesh. In both cities there are active local actors and scholars engaged in preserving and developing former industrial sites, and are easily accessible by air. The conference could combine a workshop in Bhopal with a more general program in Mumbai.

The opportunities – and challenges – in the area of industrial archaeology and heritage in Asia are immense. In the rapid growth of cities, heritage in general is subjected to irreversible damage, and so is industrial heritage.

This is a joint concern for all us. The roots of industrial heritage in Asia have global connections on a political, economic, cultural and social level in all periods of time, but especially in pre-independence or colonial times.

One possibility that should be considered is for collaboration with the Modern Asia Architecture Network (mAAN). The organizational structure, agenda, and action plan of mAAN were adopted at its first international conference in Macau, 2001. Yearly conferences have been arranged since [http://www.m-aan.org]. Reviewing the results of previous mAAN workshops, not least the one in Shanghai in 2003, it is evident that mAAN has valuable experience in arranging this kind of work.

One step in creating ties between TICCIH and mAAN could be to join forces for an intermediary TICCIH conference in India in 2010. Another great opportunity will be the 2011 mAAN conference in Seoul, to be dedicated to industrial heritage.

Finally I would like to add to the call for TICCIH to contribute to the preservation of the former Union Carbide factory site in Bhopal.[1] The disaster in 1984 shocked the world. Today the site of that disaster ought to be preserved. This calls for international attention. There are few industrial heritage sites anywhere which embody such wide and extensive immaterial values.

In 2005 the State of Madhya Pradesh proposed to redevelop the factory land as a memorial, but the administration has lately threatened to pull it down. The Union Carbide works has recently been nominated to the 2010 World Monuments Watch List of the 100 most endangered cultural heritage sites.

Having visited the factory in Bhopal in February and inspected the structures and the site and discussed it with several of the involved parties I would like to strongly endorse preservation of the structures. This will involve a thorough on-site mapping and safeguarding of external archival material, and other tangible and intangible material relating to the site. Preservation and future use call for international cooperation and assistance in the practical fields of industrial archaeology, conservation and heritage studies. Expertise is needed to evaluate, document, analyse, critique, clean, conserve, communicate, market and support this cause.

It should be possible to have plans for both an Indian workshop/intermediary conference and the Seoul conference ready in advance of the XIV TICCIH Congress in Freiberg. Both initiatives would project TICCIH into a new territory and fill it with a new purpose. I would be pleased to help set up a working group as a first step.

1. See *TICCIH Bulletin* #43, Winter 2008, or 'Bhopal disaster' on Wikipedia

jang@kth.se Skype: janafgeijerstam

TICCIH news

■ TICCIH elections

The TICCIH General Assembly is held every three years, and this year will be on the last day of the Freiberg Congress, Saturday, 5 September, at 2.00 pm.

This is the occasion for the elections to choose who will be on the TICCIH Board for the next three years as well as the new president and treasurer. The following five Board members are due to retire by rotation, though they can offer themselves for re-election: Maria Teresa Maiullari Pontois, Patrick Martin, Gyorgyi Nemeth, Miles Oglethorpe and David Worth. There may be more vacancies, too, as not all the Board members have confirmed with the Secretary if they want to continue or not.

Who can stand and who can vote?

Any fully paid-up member of TICCIH is eligible to stand for election. Nominations need to be supported by two members of TICCIH. If you are not sure whether you have paid for 2009, check the on-line Directory of Members on the index page of the TICCIH web site, which is automatically updated when you either join or renew your membership.

Only paid-up National Representatives are entitled to vote at the General Assembly. For any doubts concerning the elections, either read the TICCIH Statutes, sections E to I (www.mnactec.cat/ticcih/ticcih_statutes.htm) or write to the Secretary, Stuart B Smith (stuartbsmith@chygarth.co.uk)

■ Congress news

The Freiberg conference is only four months away and from of the number of registrations it looks as if it will be a great success. The conference organisers are urging you to sort out your accommodation as soon as possible as this will be under great pressure. Details of the four conference hotels can be found on the congress website or in the Second Call booklet, along with details of how to reach Freiberg, conference tours, draft timetable and so on. The 'Third Announcement' with the full conference programme was sent out in early April, and can be downloaded from the conference web site.

■ TICCIH on-line inventory of world industrial heritage

There have been discussions in TICCIH over the years around the issues of identifying the most important historic industrial places in the world. Already TICCIH gives advice to UNESCO - through its partnership with ICOMOS - to help decide which industrial sites, nominated by their countries, should be included on the World Heritage List. To sustain this advice TICCIH encourages thematic studies of which there are so far five, which consider how to evaluate coal mines, company towns, canals, bridges and railways. And the origin of these studies was a list prepared by TICCIH as long ago as 1994 of the eighty best industrial heritage sites in the world.

A new project to create a TICCIH inventory aims to advance knowledge of the global state of industrial heritage. It is an initiative of the out-going TICCIH president Eusebi Casanelles who wants to develop the searchable, structured database of historic sites that has been built for the Museu de la Ciència i de la Tècnica de Catalunya (MNACTEC), in Spain. The TICCIH database will adapt the criteria for selection and the information on each site, and recycle the digital architecture of the database. One innovation will be to make the project participative by including an on-line form which anyone can complete, to send in details of a site which they think ought to be included. Once they have been suitably edited and verified, new sites will go straight into the list.

The plan is to divide the list up into twelve industrial sectors, to help search for sites. Nine of them are familiar classifications used for industrial heritage, while three more cross-cut these thematic divisions with typological criteria: architecture, civil engineering and landscape.

To set the project in motion, the database will be primed with the 80 TICCIH sites chosen in 1994. To these we can add other internationally-recognized industrial heritage monuments: the fifty or so already acknowledged by UNESCO; sites mentioned in the TICCIH/ICOMOS thematic studies; sites from the *Dinosaurs of Industry* project of a few years ago, and so on. A researcher at the MNACTEC will continue adding sites until the database has achieved a critical mass of sites, from which point it is hoped that it will take off into self-sustained growth. The Internet address of the database will be published shortly. Meanwhile, suggestions to improve the project will be most welcome (ticcih@gencat.cat) as well as any other lists or compilations of important sites that the project team could include.

■ New TICCIH representatives in Africa

Two new correspondents will extend the reach of TICCIH into North Africa. In Egypt, Dr Yasser Aref is an associate professor in the Department of Architecture at Menofeya University and head of the Architecture Unit at the Alexandria and Mediterranean Research Center in the Bibliotheca Alexandrina: www.yasseraref.com. Our new contact in Morocco is Professor Wartiti, a mining expert in the Mohammed V University since 1978 (wartiti@fsr.ac.ma). Her project can be seen at http://clik.to/geolaprabat/

■ 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'Égara 270,
E-08221 Terrassa, Spain

Life presidents:
Sir Neil Cossons
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Secretary: Stuart B. Smith OBE, 'Chygarth',
5 Beacon Terrace Camborne, Cornwall TR14 7BU, UK, t: +44 01209 612142, e: 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 send 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.

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A tail of two Spanish cast-iron bridges

Joaquín Cárcamo Martínez
Surveyor
TICCIH Spain and the Basque Industrial Heritage & Public Works Association

As Bilbao in the Basque Country, Spain, began to grow, its two bridges become inadequate: the old bridge of San Antón and the San Francisco chain suspension bridge by architect Antonio de Goicoechea (1827, the second built in Spain). The process of building a new bridge began with the presentation of a plan by the same architect at a city council meeting on 20 May, 1844. Spain's Ministry of the Interior later imposed a series of technical conditions concerning abutments and piers. Above all, the Ministry insisted that the central arch be raised.

Construction work on what was originally known as the Isabella II bridge began in mid-1845. It was under the provisional direction of Goicoechea until Pedro Celestino Espinosa, appointed by the Corps of Civil Engineers, arrived to take over. The bridge was not opened until January, 1848. The four cast-iron arches, each spanning 11 m over the river, and the mobile central section rested on stone piers and abutments. Each arch comprised six heavily-braced ribs consisting of a lower arch (the arch is best suited for cast iron, which basically resists compression) formed by five I-beam section segments assembled and jointed with transversal braces, an upper beam to support the deck and a succession of three circular rings of varying diameters in each spandrel, tangential to both parts and mutually braced by tie rods.

In subsequent years the condition of the bridge deteriorated, particularly in 1874 when Bilbao came under siege during the third Carlist civil war. Bombs and the work of the river left the bridge unusable and it was rapidly replaced. Construction work on the new stone bridge lasted from 1875 to 1878 and was the work of the liberal engineer Adolfo de Ibarreta.

Until recently, all traces of the bridge were believed to have disappeared completely. However, not long ago I had the opportunity of examining a small road bridge with a single, 11-metre arch spanning the mouth of the Udondo, a tributary of the Bilbao river estuary. The Udondo flows into the estuary at Lejona, not far from the port of Bilbao and the famous Transporter Bridge at Portugalete. My examination led me to the conclusion that the arch was in fact one of the original arches of the bridge in Bilbao. In 1876, an engineer called Pascual Landa, Head of Public Works, asked the Bilbao City Council for permission to use one of the arches to reconstruct the small bridge dynamited by the Carlist troops. For the last 133 years, the arch has remained in use, "hidden" from public view.

Some decades ago, the road was widened and another, modern bridge of pre-stressed concrete beams was attached upstream to the old one. The cast-iron bridge lacks the original deck, the present one being a reinforced concrete slab. Despite remaining in service on a road currently owned by the Port of Bilbao and with heavy daily traffic, the metal structure appears to be in good condition. However, as with similar bridges, it is probably deeply fissured, in which case it will need some intensive rehabilitation work. The Basque Industrial Heritage & Public Works Association has asked the Basque regional government to declare the bridge a monument, given its historical importance, particularly as Bilbao lost virtually all its city bridges when they were dynamited in 1937, during the Spanish Civil War.

Until now, the only remaining bridge in Spain with a cast-iron structure was assumed to the Isabella II bridge (also known as the Triana bridge) in Seville. Indeed, the Seville bridge is the best surviving example of a type begun by French engineer Polonceau in 1834 when he built the sadly long-since disappeared Carrousel bridge in Paris. With three arches all spanning 45 metres, the Seville bridge was part of a project presented in 1844 by French engineers Ferdinand Bernadet and Gustave Steinacher, who started construction work in December 1845 after winning the contract from the City Council. Building work ran into major difficulties in the following years, until the Ministry of Public Works took over, appointing Spanish engineer Canuto Corroza to the job in 1851. Corroza finished the bridge in early 1852.

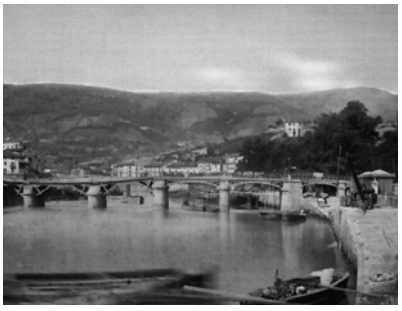
In 1918, the Seville bridge's original deck was replaced after being damaged by the increased loads it had to bear. The bridge held up until 1958, when it was closed to lorry and bus traffic. A few years later, a lively debate broke out in the city when the possibility of demolishing the bridge was mooted. However, in 1977 local engineer Juan Batanero superposed a self-supporting deck on the cast iron arches. Although destroying the structural essence of the bridge, the measure guaranteed it would remain in use, preserved the look of the bridge and maintained the original features.

In Europe (and in fact the world), cast-iron bridges were a British monopoly from the construction of the original 'Iron Bridge' in Coalbrookdale until approximately 1850. After this date they were also widely developed in France, up until the end of the 19th century.

One final point. Although both bridges were cast in Spain, one by the Santa Ana de Bolueta foundry in Bilbao and the other by the Narciso Bonaplata foundry in Seville, the technology did not catch on. The use of iron, which gradually imposed itself from 1850 on, was popularized by foreign firms until towards the end of the century, largely because of the weakness of the national iron and steel industry and despite the high technical level of Spanish civil engineers.

Contact: jcarcamo@telefonica.net
Translation: Mark Gardner

The Isabel II bridge in Bilbao in 1876.
Photo: Museo Vasco de Bilbao



The re-used spans of the Bilbao bridge over the river Udondo at Lejona

The Isabel II bridge in Seville today

report

Bridges of iron

The Malleco rail viaduct. Chilean design, French construction

Dr. Arq. Jaime Migone Rettig
President TICCIH-Chile

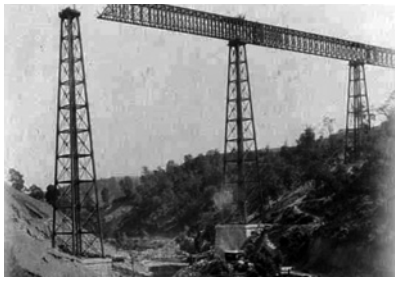
■ The Malleco viaduct is the highest railway bridge in South America. It was opened by President José Manuel Balmaceda on October 26, 1890 and stands 110 m above the river Malleco, representing one of the great feats of metal engineering.

The state of Chile made the Chilean engineer Lastarria Victorino Aurelio, head of the Ferrocarriles de Arauco, responsible for the design. After a public tender in which the French companies Gustave Eiffel, the Societe Anonyme des Anciens Establissements Cail and Schneider et Cie of Le Creusot all took part, the latter won the tender and production of the viaduct went ahead in France at a cost of 830,000 francs. Alexandre Eiffel's proposal was almost double, 1,500,000 francs.

Production of the pre-fabricated viaduct lasted from 1886 to 1888. It was transported by sea from France to Chile. Erection started in 1889 and finished before the inauguration ceremony the following year. The total weight of the structure is 1,400 tons and construction of the foundations was technically very complex for its time. Total length is 347.5 m and the viaduct is divided into 5 equal sections of 69.5 m each. The first and the fourth pillars are 43.7 m high, the second is 67.7 m high and the third 75.7 m. The rail tracks are 102 m above the bottom of the gorge. The gauge of this railway is 1680 mm wide.

In 1910, increases in the weight of the locomotives to 20 tons per axle meant that the bridge had to be strengthened to be able to resist properly. The responsibility for the solution was initially given to the engineer Francisco Mardones and was completed in 1923 by another Chilean engineer, Jorge Ewerbeck. These works were also by Le Creusot, started in 1923 and were completed in 1926.

The magnificent viaduct was declared a Historical Monument in 1990 and was completely renovated in 2006.



Malleco Viaduct: construction of the structure in 1889

Restoration of the viaduct during 2006

See www.hauptbahnhof-stuttgart.eu and 'Der Stuttgarter Hauptbahnhof – Vom Kulturdenkmal zum Abrisskandidaten' by Matthias Roser, Schmetterling Verlag, Stuttgart (2008) (ISBN 3-89657-133-8)

The Ojuela suspension bridge in Mexico

Belem Oviedo Gámez. President of TICCIH México
Miguel Ángel Iwadare. Natl. Representative of TICCIH México

■ When we talk about iron bridges, we usually imagine big structures crossing rivers, canyons and channels. With the arrival of the railways in Mexico, the landscape was transformed and many bridges were constructed across its vast territory, but engineers and entrepreneurs also constructed iron bridges on a small scale and in very different forms in order to satisfy the needs of their factories or mines.

It is the scale of these bridges that makes them particular and in a certain way, precious objects whose construction was supervised to the minimum detail. One of these is the Ojuela suspension bridge, a rare example of fine engineering of the early industrial era of Mexico.

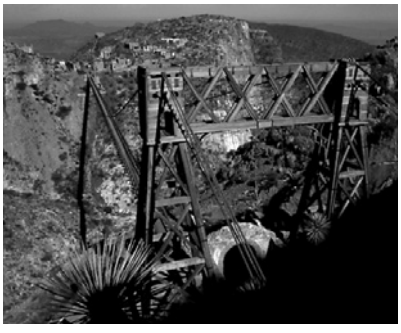
Ojuela is located in Mapimi, Durango, in the northern part of Mexico, and was the site of exploitation of mines of lead carbonate, gold and silver by the Spaniards during the Colonial period, who later abandoned them at the conclusion of the Independence war in 1821. The mines had different owners during the 19th century and at the end of the century the Peñoles Mining Company centralized the exploitation of the main mines of the region.

The mining company modernized the zone. They built a 24 km. narrow gauge railway in order to connect the main mines with the Bermejillo Station, one of the many stations of the Central Railways of Mexico, installed an electrical plant that served the mines and built one of the most important engineering pieces of Mexico, now seen as an important industrial monument of the state of Durango: the Ojuela suspension bridge.

The Ojuela bridge was built by the firm of John A. Roebling Sons Company, New York and completed in 1898. It was constructed in steel and wood in order to connect a railway that served to transport the mineral from the mines to the smelting plant located in the other side of the canyon, besides the town of Ojuela, so that instead of ringing the mountains, the carts filled with rocks crossed a canyon 180 m deep through this bridge 318 m long and 1.75 m wide, with a suspended weight of more than 112 tons. This bridge was supported by huge steel towers and six steel cables.

Unfortunately, during the early 1990's the steel towers were removed and replaced by new concrete towers that were later covered with wood panels. The original towers were taken to the city of Durango and placed at the main entrance of the Fairgrounds. It was in this same period in which Ojuela, a ghost town, and the bridge began to appear in tourist guides. Today, the suspension bridge is one of the main tourist attractions of the region. The visitor can stroll through the streets of the ghost town and cross the bridge towards the entrance of one of the mines.

Despite the influence of tourists, there is a lack of awareness of the need to protect these important landmarks. The Ojuela suspension bridge deserves a better future as it is one of the most important legacies of industrial activity in Mexico.



The Ojuela suspension bridge.
Photo: Marco Hernández Badillo

report

Bridges of iron

The Linlathen East Bridge digital scanning project

Douglas Pritchard

■ In March 2008, the Digital Design Studio at the Glasgow School of Art, the Planning & Transportation Department at Dundee City Council and the Technical Conservation Group at Historic Scotland began a collaborative project to digitally document and represent virtually the Linlathen East Bridge, east of Dundee. Scotland The bridge, which spans the Dighty Burn, is the oldest cast-iron bridge in Scotland. Built in 1804, the A-listed structure is to be restored as part of a planning gain agreement with a housing developer, at a cost of £390,000.

The purpose of the project was to accurately document the bridge's current physical condition, to show a disassembly process, and propose virtual restoration options. Although complete 2D CAD plans, sections and elevations were required, the 3D model was the most effective way to represent the well-worn structure.

From a technical standpoint, 3D laser scanning was immediately proposed to properly capture the twisted metal, burnt timbers and irregular terrain. Informally, the project was a test between 3D terrestrial laser scanning vs. the traditional survey. A two-person scan team utilising a Leica ScanStation, captured 9 individual 'scan-worlds'. The scanning system has the capability of capturing data up to 300 meters, but for this project it was placed within 20 to 40 meters from the bridge. The bridge was scanned from various positions around, above and under - completely surrounding the bridge.

For 3D texture purposes, the bridge was extensively photographed using a Nikon D2X digital camera and wide angle lens. The ScanStation's built-in digital camera was only used for reference imagery. Considering the stand-alone nature of this project, no additional survey control or global coordinate system was used.

Both survey targets and feature registration were used to combine the scans into one master point-cloud database. Typically the scan resolution for the bridge was 1 - 2 mm with the surrounding terrain at 1 cm. Unlike a traditional survey, no hand measurements or scaffolding were required. During an 8-hour period, 64, 451 and 161 individual 3D points were captured.

Without any user modification or post-processing to the data, the 3-D point-cloud models can be used directly as dimensioning tools. The point-clouds can be orthorectified and sectioned, and individual measurements can also be taken.

The point-cloud data of the bridge was originally collected within the Leica Cyclone software. To generate the 2D CAD drawings, it was accessed using Autocad 2007 with the Leica CloudWorkx software module. The development process of the 3D model was less direct, the point-cloud was imported into 3D Studio Max as a 3D mesh. The modelers then 'snapped' to the mesh to assemble the 3D model. For this project, the bridge and stone textures were derived from the onsite photography.

The results that the Council was given included the 2D drawings, a series of photorealistic 3D renderings and a 40-second 3D animation depicting the current state of the bridge dissolving to a proposed disassembly.

To provide the Council and contractors with a better understanding of how the bridge will be repaired and modified, it is intended that the proposed restoration plans and alterations be incorporated into the 3D model. A final animation will be developed showing the before and after state of the bridge.

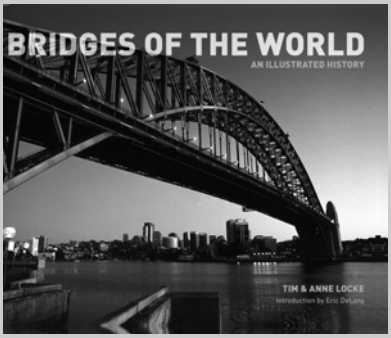
This project was presented at a digital documentation conference in Glasgow in April, and the animation can be viewed on the conference web site: www.digitaldocumentation.co.uk/#linlathen

Digital scan of the Linlathen bridge. © Digital Design Studio / Glasgow School of Art

Publications

Bridges of the World – an illustrated history
Tim and Anne Locke,
introduction by Eric Delony

AA Publishing 2008. ISBN 978 0 7495 5911 3. 256 pp



This lavish publication has fabulous photographs and starts with an illustrated history of bridge building. There then follow separate sections describing bridges in Europe, Africa, Asia, Australia, North America and South and Central America, covering altogether more than 65 beautifully photographed examples. If the geographical coverage is rather uneven - 13 from the UK, nine in the US, six from France, South and Central America have five, only two in Africa and Japan, none in Russia, but four in China and one in India - this reflects the large scope of the book. The authors are travel writers and archaeologists and are concerned about the significance of architectural achievements.

The introduction was first published in the ICOMOS/TICCIH joint thematic study 'Context of World Heritage Bridges' in 1996, and was used with the permission of the author, TICCIH and ICOMOS.

Stuart B. Smith

world wide

Norway

Mixed site on Norwegian Tentative World Heritage Site List

Stuart B. Smith
National Representative of the Russian Federation

Delegates to the 2006 TICCIH Conference in Terni, Italy, could not help being enthused by a team from western Norway led by Randi Bårtvedt, who came to the conference and told everyone about the splendours of the Tyssedal power plant located at the Hardangerfjord. With its beautiful 90 megawatt power plant constructed in 1906-1918 close to the holiday destination of Odda, it soon became the site of huge electrochemical plants.

Just over the Hardangervidda mountain plateau, the largest in northern Europe and now a National Park, is the Vemork 132 megawatt power plant built in Rjukan in the Telemark region in 1911. At that time they were the largest generating plants in the world. Recently, controversy raged over which of the two power stations was the most complete, but ICOMOS Norway had the foresight to commission a survey and study in 2008 on what should constitute a world heritage site of hydropower and electrochemicals. The subsequent report was adopted by ICOMOS Norway and given to the Norwegian Government. It proposes a huge mixed site stretching over hundreds of kilometres which will include the Hardangervidda Plateau itself – home to the largest reindeer herd in northern Europe - and also the supplier of water to several hydroelectric plants including those at Tyssedal and Vemork. The site proposed in the report will include the Hardangerfjord itself, which is also a natural site, all of which will be advised upon by the International Union for Conservation of Nature (IUCN) rather than by ICOMOS.

The man-made aspect of the landscape is reflected by the two power stations and their electrochemical plants, which survive to a very high degree at Odda with furnaces for the production of carbide and the subsequent process for producing fertiliser.

Over in Vemork not a great deal remains of the chemical plants in Rjukan, where there was a well-known heavy water plant which the Allies attempted to destroy during the Second World War. However the railway line, together with its rolling stock, survives from Rjukan to Notodden and the large inland lake at Tinnsjo still has two of the famous rail-carrying river boats, the third one now being at the bottom of the fjord with its cargo of heavy water.

The two splendid settlements at Odda and Rjukan have some fine buildings and could quickly be designated as conservation areas.

This very large and exciting project could be one of the very few mixed sites on the world heritage site list and will certainly be the first power station and electrochemical plant to be inscribed.

The National Museum of Waterpower at Tyssedal is acting as Secretariat for the TICCIH Section on Electrochemicals and Hydropower and we are assured that they will have a strong presence in Freiberg where they will bring the story up to date.

Tyssedal power plant on the Hardangerfjord, Norway

Russia

The National Program for the Preservation of the Industrial Heritage

Professor V.V. Zapary
National Representative of the Russian Federation

In Russia as in the rest of the world, interest in the problems of preservation and rehabilitation of the industrial heritage has grown since the beginning of the new millennium. A reflection of this process has found in the growth of the number of publications, of the variety of conferences, of memorials celebrating the industrial heritage, the creation of new museums and museumisation of memorable places. In some universities, courses of lectures on the history of science and technology have been organized.

Carrying out of the scientific conferences on industrial heritage has became an appreciable phenomenon. It is traditional (since 1996) to hold a conference on «Ural Industrial» in Ekaterinburg. Problems of an industrial heritage are seriously considered here along with other questions (the history of a science and technology, economic history). It is not a coincidence that the National Representative of the Russian Federation in TICCIH, Professor V.V. Zapary, takes direct part in the organization and carrying out of this conference.

The organization of a series of three scientific conferences on the basis of the Mordovian state university of Ogaryov (Udmurtiya) by Professor N.M. Arsentev (member-correspondent of the Russian Academy of Sciences) is another important phenomenon. They were devoted to problems of economic history and to industrial heritage. These conferences were organized and held in a number of Russian cities: in 2005 in Saransk, in 2006 in the Goose Hrustalny and in 2007 in Vyks, under the aegis of the Russian Academy of Sciences and national representation of Russia in TICCIH.

The big interesting work done by the Moscow institute of steel and alloys, which regularly holds conferences devoted to problems of studying the history of metallurgy and questions of the museumisation of the monuments of metallurgy. The project head is P.I. Chernousov and they have close contacts with the mining academy in Freiburg (Germany).

One essential event is the creation in Nizhny Tagil of the memorial estate on the basis of the old Demidov factory. On its base the considerable of regional studies and educational work is conducted. Monuments of an industrial heritage of world value remain and are being restored.

Staff of the Russian scientific museums conduct research on the studying and propagation of the industrial heritage of Russia. These works seem to us interesting, timely and perspective. So E.A. Kurlaev of the Institute of history and archeology of the Ural branch of the Russian Academy of Sciences in Ekaterinburg has prepared a computer model of the Ural metallurgical works of a 18th century. This model, with added animation and sound, creates a unique sensation, helping to present better the kind of factory of that time, and to understand the operation of metallurgical manufacture. With a computer drawing it is possible to show how mechanisms of that time functioned.

Work of increasing scope is proceeding on new museums of objects of the industrial

heritage in many regions of the Russian Federation. The major work in this direction is being done in Vyks, the Nizhniy Novgorod region, where works are being conducted at the Verhnevyksunsky blast furnace factory. There have remained a number of objects such as a fragment of an 18th century blast furnace, most of the workshops of the same time, factory shops from the mid-18th to early 19th century and others objects.

World exhibitions of modern art in Moscow recently became an interesting realization of the use of industrial heritage. One of them has taken place, for example, in the 2000 m^2 basement water basins of the «Winery». In the middle of the 19th century, workshops and warehouses around Kursk station belonged to the «Moscow Bavaria» brewery from the beginning of the 20th century- the Moscow wine industrial complex. After the bankruptcy of the winery at the beginning of 2000, seven dilapidated buildings (more than 20,000 m2) have been converted to the largest Russian centre of the modern art "Winery". The group of designers led by A. Brodsky decided not to make profound changes to the architecture and as much as possible to underline «an industrial glamour» of the ancient constructions.

Similar projects exist in many big cities of the world. So the London gallery «Tate Modern» is in a former power station, and a widely-known Paris museum of impressionists is located in a building of the former railway station, the «Musee d'Orsay». As to Moscow, the first steps in this direction are the rehabilitation of the former «Red Rose» cotton-mill, where a centre of design is now placed. The «Red October», a former confectionery factory is another new cultural centre.

conservation

Toronto Union Station Rehabilitation

Dr Christopher Andreae
Historica Research Limited

When finally completed in 1931, most of the traffic through Toronto's new Union Station consisted of intercity passenger travel; commuter traffic was limited. This changed in 1967 when a provincial rail authority – GO Transit – introduced a new commuter service. Today, on a typical day over 180 trains carry 150,000 commuters through the station. It can no longer efficiently handle the volume of traffic. In preparation for upgrading the service, in 2000 the City purchased the building from the railway owners and GO Transit purchased the approach tracks, platforms, and trainshed.

GO has focused on two broad areas for improvements; increasing the efficiency of train operations into the station and improving the movement of passengers on and off the platforms. Improving train efficiency is the least controversial upgrade and has negligible impact on the historical integrity of the station. The approach tracks are being realigned and the track signals modernized to provide for simpler, faster train routings through the terminal.

However, the platforms have to be rebuilt because they were designed primarily for intercity passenger use. As built, each of the ten tracks (later increased to 12) under the trainshed were flanked by a passenger platform on one side and a service platform on the other. The service platform contained freight elevators for car supplies, baggage, express and mail, and utility connections for water, electricity and steam. Since none of these services are needed any more, the platforms are being converted to passenger use, doubling the available number of platforms in the trainshed.

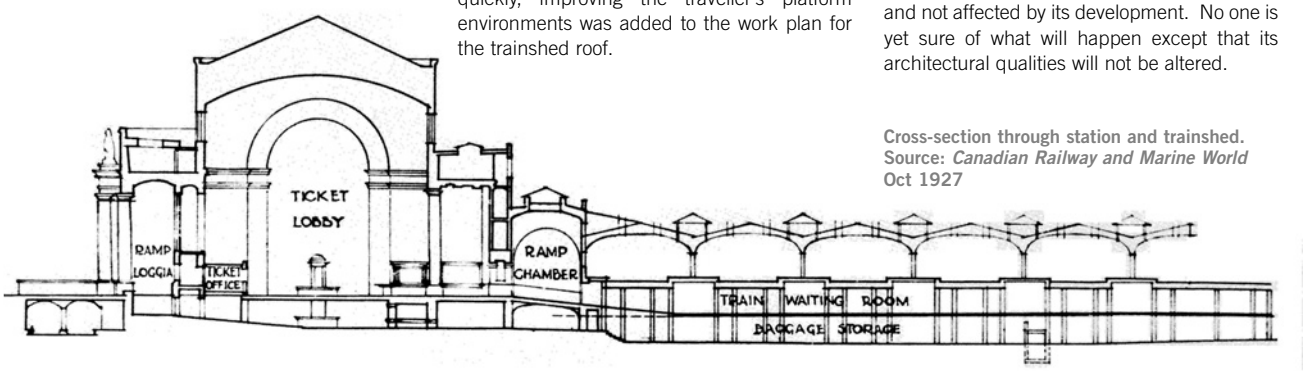
The trainshed roof has proved to be more challenging. It is an immense structure of about 30,000 m2 (three hectares) of steel framing and timber decking. Initially the roof was simply going to be refurbished because it was functionally adequate to protect travellers. But then GO discovered in traveller surveys that commuters found being in the trainshed was the least pleasant part of their trip. All of the upgrades at Union Station are anticipated to cost in the vicinity of one billion dollars (Cdn) and yet the most visceral part of the commuter experience was not going to change. Quite quickly, improving the traveller's platform environments was added to the work plan for the trainshed roof.

The trainshed ambiance became a problem with the growth of commuters. Historically, Canadian practice was not to allowing passengers onto platforms until shortly before the train left. Intercity passengers therefore waited in comfort in the waiting room and a brief trot along a "dark" trainshed platform was a minor event. GO passengers are permitted to wait on the platform and experience the trainshed for a relatively long period.

Building a new, light, airy trainshed was not feasible because the shed is a listed National Historic Site. The 1931 structure is the last, and one of the few surviving, Bush trainsheds in North America. The first was designed by Lincoln Bush and completed at Hoboken, New Jersey in 1906 – and is still in service. In the intervening years about twenty such sheds were built. Rather than an open, vaulted roof, platform protection is provided by low canopies separated from each other by a smoke slot over the centre of the rail. The design was, and still is, an efficient way to provide protection against the weather even if Toronto commuters disagree.

The compromise solution is to erect a raised, glass atrium across the centre third of the trainshed. This will allow the brightness and airy-ness requested by commuters while preserving a significant component of the historic trainshed.

Meanwhile the city, as owner of the station building proper, has taken a more "relaxed" approach to redevelopment. Most of the GO operations are now independent of the station and not affected by its development. No one is yet sure of what will happen except that its architectural qualities will not be altered.



Cross-section through station and trainshed. Source: *Canadian Railway and Marine World* Oct 1927

events

Conference Report

Heritage care through active citizenship

Mechelen, Belgium 23-24 March 2009

Pam Moore
pam.moore59@ntlworld.com

This two day event funded through the European Union Europe for Citizens programme, with support for the Flemish Authorities, brought together almost 200 participants from voluntary organisations in 30 countries.

Contributions varied from a moving account of the problems of NGOs in Azerbaijan to the inspiring success story of the Transylvania Trust's community building heritage project at Banffy Castle, Romania, and an encouraging account of change in attitu

des to volunteer effort in Hungarian Folk Culture. Organisations large and small took part, with papers from the English National Trust on their new approach to caring for the heritage through active citizenship to a small group from the Netherlands who have been promoting cross border unity in an innovative landscape project. Four members of my own organisation, ECOVAST (European Council for the Village and Small Town www.ecovast.org) spoke on a wide variety of topics.

The industrial heritage was addressed directly by two speakers, although it was alluded to by many others. My own contribution, "The Role of Volunteers in the Conservation of the Industrial heritage in Europe", addressed the contrasts in approach to practical volunteering. My research had revealed that in the former communist countries of central and eastern Europe it is very unusual for anyone to seek actively to preserve sites, certainly not in a "hands on" way. It seems this ethos is the result of history – the notion of "the State will provide" and a reluctance to be seen to stand out from the crowd, as in the past, this could place one under suspicion.

However, practical work in industrial heritage conservation is also rare in much of western Europe. Where it does take place, there are two motivations. In Sweden, for example, many communities have preserved monuments (e.g. blast furnaces or mills) in their village, but these are seen as community assets (and often used for local gatherings) rather than because of an enthusiasm for the industrial past's remains. In the UK and Flanders, however, a tradition has grown up of groups, either geographic (such as the county IA Societies in England) or thematic (for example, Levende Molens - Living Mills - in Flanders) who really "get their hands dirty" in preservation work.

I concluded that this is due to some extent to cultural factors, but also to a major extent to the degree of financial provision offered by the State for the conservation of sites of industrial heritage. This article is too short to provide my full thesis on this (which is, anyway, still developing – and any input would be welcome), but if anyone would like a copy of my paper, I would be happy to supply it.

The other speaker for the industrial heritage was Adriaan Linters of the VVIA (Flemish Society for Industrial Archaeology). Adriaan spoke about specific sites in passing, but his principal aim was to put forward a proposal for a European Industrial and Technical Heritage Year. This is to be promoted through E-Faith – the European Federation of Associations of Industrial and Technical Heritage, of which Adriaan is a leader. If the campaign is successful, the EITH Year would perform a valuable service in raising the profile of concern for and interest in, the industrial heritage, and would be likely to attract European Funding.

If you or your organisation is interested in joining this campaign, E-Faith would like you to sign their memorandum - see link http://www.e-faith.org/MEMO_ENG.htm - and send it to them at the address given on the form. There is information available on E-Faith's website in a number of languages.

All in all, the Mechelen Conference was a most useful gathering for the exchange of experience, the provision of a great deal of information about volunteer activity in Europe, and for networking. There is a hope of a further conference next year – I for one, will wish to be there.

TICCIH Conferences

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

Spain

TICCIH Railway Section Conference
Museu del Ferrocarril de Vilanova i la Geltrú, 18-20 June 2009

Following the inaugural meeting last year in Mexico, this conference will be at one of the two national rail museums in Spain. Info: museuferrocarril@ffe.es www.mnactec.cat/museum/museu_del_ferrocarril_de_vilanova_i_la_geltru.htm

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 or see the congress website: www.ticcih 2009.de for full conference 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; comunicaciones@civiles.org.ar

World Conferences

Germany

IIIrd International Congress of Construction History,
Cottbus. 20-24 May

Info: www.ch2009.de/home/index.html

Denmark

Incredible Industry - Preserving the Evidence of Industrial Society
Copenhagen. 22-27 May

Special issues arising from the conservation of industrial cultural heritage, industrial materials, products and production equipment.
The conference coincides with the opening of a new large exhibition on Industrial Culture at the National Museum.
Info: www.kongres09.nkf-dk.dk; kongres09@nkf-dk.dk

Great Britain

8th International Mining History Congress
Redruth, Cornwall, 12-15 June

Joint conference between Exeter Univerisity and Geevor Mining Museum. Info: huss.exeter.ac.uk/history/imhc

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