TICCIH
Bulletin

THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF THE INDUSTRIAL HERITAGE

# Number 69

3rd quarter, 2015

**Contents**



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View of the De Bosscherwaarden brick factory, Netherlands

*From wastelands to creative hotspots. The changing appreciation of industrial heritage in the Netherlands, c. 1975-2015:* Karin Stadhouders has started a PhD-research project at the Centre for Global Heritage and Development at Leiden University, Netherlands, investigating the (re)discovery of industrial heritage sites. It focuses on the ways in which local interest groups and engaged artists reshape places, from the initial "rediscovery" of abandoned industrial sites and landscapes as places of value to their deliberate redevelopment and reuse for new purposes.

# Opinion

## Valuing industrial heritage in the Anthropocene

**Dr Inger Birkeland**
**Telemark University College, Norway**

On the 5th July, 2015, UNESCO inscribed Rjukan-Notodden Industrial Heritage Site on the World Heritage list. This represents great opportunities for the local communities of Rjukan and Notodden, located in the interior southern part of Norway. According to the proposal, the site is a unique expression of new industrial developments during the second industrial revolution, based on hydroelectric power production, industry, transport system and urban communities. However, the development of industry here depended totally on the presence of the water landscape, so that the cultural and physical features of this landscape is here a total production system (Birkeland 2015).

How are we to value industrial heritage in the Anthropocene? The Anthropocene refers to the human-dominated geological epoch that we are now living in. It is a concept that covers the last 250 years' immense human impact on the earth where global warming, environmental degradation and unsustainable development are huge warning signs.

# Opinion

I want to argue for perspectives on industrial heritage research that meet these challenges. This implies partly to uncover some of the taken-for-granted premises in industrial heritage research, namely human-centeredness, or anthropocentrism.

Human-centeredness is a central feature of industrial, modern society, and it is often missed in industrial heritage discourse. In modernity, nature was socialised and domesticated in particular ways. Industrialisation brought a sea change in how humans understood nature. We can view industrialisation as a crisis of reason (Plumwood 2002). Industrialisation turned nature into an object for human projects and interests and naturalised the need to transcend the limits of nature to create value for humans and society through the use of machines.

I suggest that making nature into a resource is part of the heritage of industrial society. This requires an understanding of the relationship between nature and society as a power-relationship. We need a social analysis that includes nature-society relationships (Castree and Braun 2001). The need to include nature is overlooked by most researchers from the humanities on industrial society, who focus on issues of social and economic injustice, power and class relations within society, but who are blind to its own anthropocentrism. An analysis of class relations only is not enough. Nature is the neglected other in the industrialised world, expressing a profound society-nature dualism.

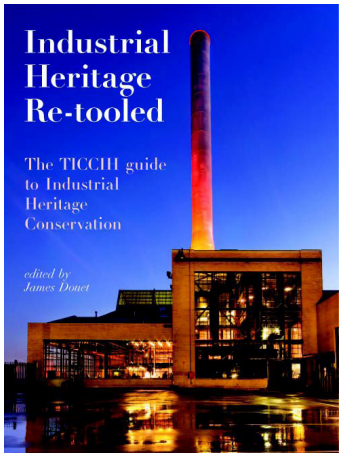
In this perspective it is important to ask whose heritage is industrial heritage, and how the interests of those who have a right to this heritage - but who are not in power to secure this right - are to be heard. This is an important question as there are some stakeholders who in industrial societies have been silenced, the natural landscape.

Who speaks for the natural landscape?

One simple reason for this perspective is the need for youth to learn about the two faces of industrialisation: how it contributed to improved welfare, health and a better world for the masses, but also how it led to global warming and an urgent need for improving environmental sustainability and climate change transformation.

So, what can be done? New research confirms that the understanding of industrial heritage as a living landscape is promising in terms of a move away from human-centeredness and towards facilitating cultural change by seeing culture as a fourth pillar of sustainability (Birkeland 2008, 2014, 2015, Soini and Birkeland 2014, Dessein et al 2015). Industrial heritage is a living landscape, a totality that results from the mingled agency of the human and more-than-human world. The industrial landscape is, further, an everyday landscape, the landscape as seen from those who live or inhabit the industrial landscape.

Sustainable heritage management must reflect a conscious inter-generational and non-anthropocentric view of the industrial landscape. The crucial question is whose values ideas of industrial heritage reflect, and whom heritage should be for. These core questions should not be left for the technocrats and engineers to manage. Use and re-use of industrial heritage must be embedded in the values and interests of those who have stakes in the industrial landscape, but most important, should include the care of the physical landscape. These questions concern cultural sustainability understood as eco-cultural justice, justice in relation to local values and justice in relation to nature, and the overall role of culture in sustainable community development




***Industrial Heritage Re-tooled: The TICCIH guide to Industrial Heritage Conservation.***
James Douet (ed.). Lancaster: Carnegie. 2012.
71 colour photos. pp. 244. £14.99.
ISBN 978-1-85936-218-1

The book is now available worldwide through Left Coast Press and other retail book sites and stores. Note: Left Coast Press is giving a 15 % discount for online purchase of the book.

The TICCIH Guide to Industrial Heritage Conservation is also available in the USA for $24.00 USD plus $5.00 shipping and handling for a total of $29.00 (USD). This link is only for mailing addresses in the USA.

## Conception of the development of historical centers in the historic metallurgy of the Urals

**Nadezda Solonina, Ural States Academy of Architecture and Arts, Yekaterinburg, Russia**

In the conditions of gradual transition to the post-industrial period in Russia, the architectural society increasingly raises the issue how we can save and efficiently use absolutely abandoned factories or partially functioning industrial buildings and territories. The practice of the conversion of former industrial buildings and constructions is only in the largest cities, such as Moscow, Sant-Petersburg or Yekaterinburg. Architects – the authors of conversion projects – as a rule use the foreign experience in their creative conceptions. The sites located in the historic centers of the large cities became, after their adaptation, places of public attention, creative resources and investment.

The conversion, adaptation and popularization processes of provincial industrial heritage are in quite different conditions now. In the current situation, the relics of the industrial period may become the centers around which a new infrastructure of old industrial towns can form, aimed to new functions, particularly touristic. Therefore it is necessary to make historical and theoretical studies for these company-towns.

The industrial heritage of the Urals is a large network of metallurgical plants and today it numbers more than 300 sites. Its physical state varies from completely lost to well-preserved and opened for the public. As a result of the monitoring and synthesis study of the current state of the historically formed plants in the Middle Urals, it was found that the conservation degree and architectural and historical potential of the industrial heritage site depends on conditions of the works' forming and developing.

The study revealed the following five degrees of preservation:
*1) Historically formed industrial complex is the most complete saved, modern works is active, there is a museum, a territory is partially abandoned (Fig.1).*
*2) Works' pond and dam are saved, a modern enterprise is active, valuable historical buildings and constructions are not saved (Fig.2).*
*3) Work's pond, dam and some ruins are saved (Fig.3).*
*4) Only work's pond and dam are saved (Fig.4).*
*5) Works is absolutely demolished (Fig.5).*

Fig.1. Nizhnetagilskiy metallurgical works (1st preservation degree)

Fig.2. Pervouralskiy Starotrubniy works (2nd preservation degree)

Fig.3. Verchnesisertskiy steelmaking works (3rd preservation degree)

Fig.4. The dam remains of the Mariinskiy works (4th preservation degree)

Fig.5. The site of the Shuwakishskiy works (5th preservation degree)

The plants located in the most profitable areas in relation to transport routes and resource base have the greatest preservation degree. These sites combine current production and protected historical and cultural industrial relics. Accordingly, the plants with a depleted resource base located far away from major transportation routes have the lowest preservation level. Today such sites are absolutely destroyed.

Monitoring the current state of the historical metallurgical works and mining enterprises of the Middle Urals contributed to reveal the specificity of the objects' distribution through the region (Fig.6). Such specificity of preserved industrial heritage objects is explained by the districts' organizing principles. The goal of each district was metal production. Each metallurgical district was independent. It includes some works and mines which were connected to each other with technological and economic links. The way of industry organization in the Urals changed in the 20th century, but today we can observe the partially preserved system of metallurgical districts on the territory of the region.

The principle of the metallurgical districts can be the basis of the conception of the Ural's industrial heritage integrated development. In this case, adaptation, conversion and popularization of the industrial heritage will be implemented on the new level and it will support the preservation of the historical feature of the Ural's industry. The qualitatively different formation now connecting preserved industrial relics can be named as historically formed industrial and cultural centers. They are the specific clusters, in which the historical enterprises combine by the principle of neighborhood around the maximum preserved site and the main transportation routes.

The designation of the historical and architectural potential of the Ural's industrial heritage allowed us to discover and explain the features of the location, activity and destiny of every site and to combine them into the special centers by the principle of neighborhood [*proximity*] and historical metallurgy districts. This specificity defines the conception of the Ural's industrial heritage integrated development. In this case, each separated, historically-formed industrial and cultural center shows the particular character of the Ural's metallurgy. Besides, the historical legacy has become an important point of attention in the conditions of post-industrial society development, and the basis for determining the local cultural identity.

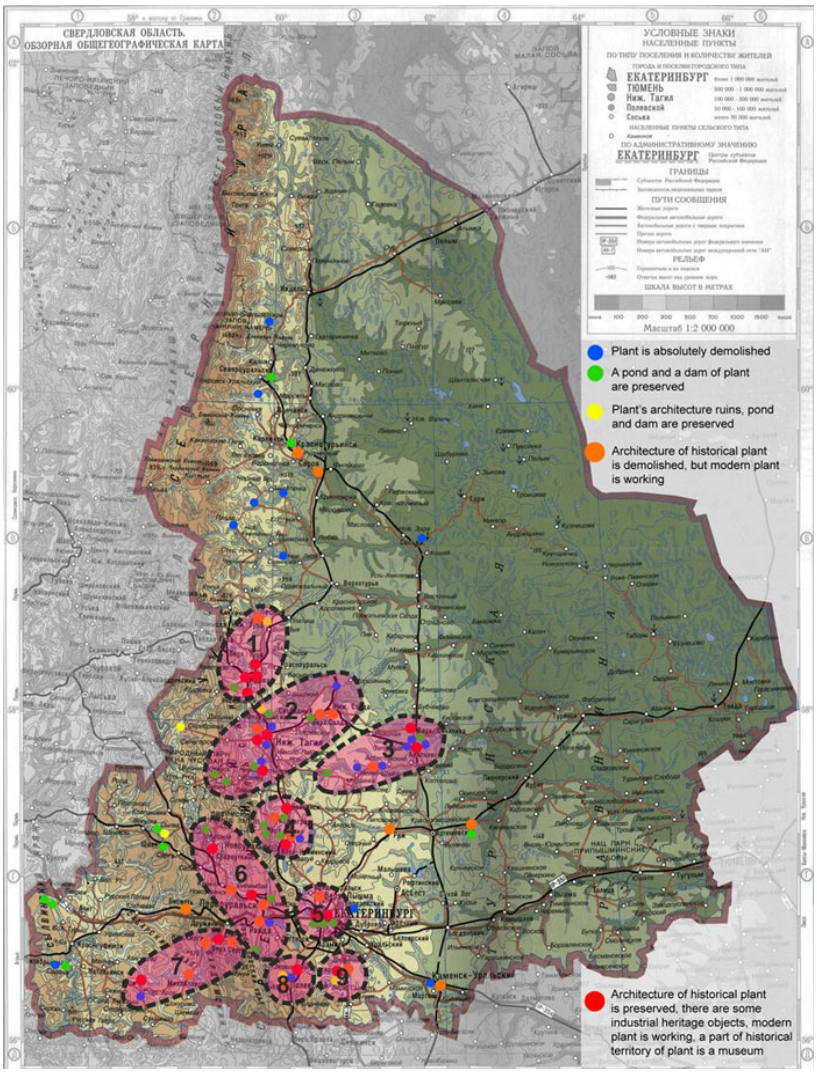



Fig.6. Nine historically formed industrial and cultural centers have been designated in the Sverdlovskaya region: 1) Kushvinskiy, 2) Nizhnetagilskiy, 3) Alapaevskiy, 4) Nevyanskiy, 5) Yekaterinburgskiy, 6) Revdinsko-Pervouralskiy, 7) Nizhne-Serginskiy, 8) Severskо-Polevskoy, 9) Sysertskiy. The names of these centers were assigned due to large historical industrial cities, located inside the clusters.

## Mining heritage in Namibia

**Judith Fait**

Some interesting legacies of the German colonial era still exist in Tsumeb, Namibia, where copper mining started in 1900. Tsumeb is the end point of the first colonial railway line, and the site of one of Africa's richest copper mines. The railway stretched from the port of Swakopmund 576 km into the interior. Two head frames and other components of the treatment plants have been preserved in an almost original state. The city owes its existence solely to the mine, because the absence of water meant it was not a natural settling place. Meanwhile, this inhospitable spot is now a town of 22.000 inhabitants. Copper mining ended in 1996, after 91 years of almost continuous operation and a final operating depth of 1.650 meters.

**Current state** The De-Wet-headframe, landmark of Tsumeb, is quietly rusting away. Since 2005, corrosion in the upper crossbars has taken place, and ground subsidence has probably occurred. The older headframe, the "Friedrich-Wilhelm-shaft", is of the "Promitz" type, as was common until 1925. It is still used for raising water and is in better shape than its younger brother. Apart from the large-scale surface corrosion its preservation seems entirely possible. The rest of the equipment, stone crushers, horizontal conveyors and the like are generally in good, albeit neglected condition.

The mine's successor companies have made significant investments since 2012: $240 million went into the expansion of the smelter with an annual capacity of 240.000 metric tonnes. A sulfuric acid plant started in 2015, and the slag heap is being reclaimed.

The Tsumeb Museum is accomodated in the historic school building. It is considered one of the finest in Namibia and is mainly dedicated to mining. Old steam locomotives from the colonial era are on display in its outdoor area.

**History** There was already open pit mining in the area around Tsumeb in pre-colonial times. The first Europeans who mentioned the copper deposits were missionaries with the Rhenish Mission in 1857. In 1898 the "Otavi Mining and Railway Company", in short Omeg, was founded as a German Colonial company. It kept this legal form until 1976. The open pit mining started in 1900.

The construction of a jetty in Swakopmund started in 1902, and construction of tracks and railway stations began in 1903. During the Herero uprising in 1904 all railway construction and mining operations stopped. They resumed in 1905 and finally workers were recruited. The first smelting furnaces for copper and crude lead started in 1907. Additives had to be imported, pyrite came from Norway, coke from the Ruhr. In 1910 some "Siegerlaender" miners arrived in Tsumeb, but no immigration boost ensued.

In 1919, the Versailles Treaty put German South West Africa under the mandate of the League of Nations. In 1921. The mandate was given to South Africa which managed Namibia as a fifth province - including homeland policy, apartheid and restrictive passport - and employment laws. The plants in Tsumeb underwent modernisation until 1924 and all trade relations with German companies remained.

Industrial Heritage under dark clouds: The "De- Wet" headframe is the landmark of Tsumeb.

Photo: Judith Fait, 2013

The trustee of the South African Union ordered the termination of mining activities after the outbreak of the Second World War. In 1949, the engineer De Wet came from South Africa to construct a modern headframe, which is still named after him. It should allow a mining depth down to 2000 meters and was built as a "Doernen" type headframe with its characteristic massive sheers.

In 1996, a miner's strike halted all activities. As a result the galleries flooded and some of the smelter's furnaces were ruined by the sudden shutdown. Consequently, the lead smelter was closed, as was the De-Wet shaft.

In the end, the employment of hundreds of miners was terminated. All mining activities ultimately stopped in 2004.

The next steps are a complete inventory and documentation of the remains of mining and smelting plants. An illustrated book about Tsumeb's industrial history is planned for 2016, all revenues will go to support the museum's work and should help to tackle the recruitment problems. A didactic path, starting at the museum and leading through the historic mining area, is in planning, but so far no funding has been allotted. The overall aim is to conserve this cultural heritage which is in danger of disappearing before it can be investigated.

The horizontal conveyor from the Friedrich-Wilhelm-shaft was about 200 meters long, about 100 meters are in good condition.

Photo: Judith Fait

The "Friedrich- Wilhelm-Schacht" headframe dates back to 1925.

Photo: Judith Fait

## Survey, communication and valorization of the automotive heritage

**Rossella Maspoli, Arch. Ph.D Professor of Architecture Technology, Department of Architecture and Design, Politecnico di Torino, Italy**

### Car-driven phenomena

Changes in mobility were, globally, a key theme of the second industrial revolution. Relevant transformations were made to the infrastructure and structure of western roads and cities, to accommodate motor cars and to respond to the changing in lifestyle. The 'car-driven phenomena' have had a great impact on the environment and the landscape, from the adaptation of existing roads and buildings to the needs of cars to the growing development of motor-related building types and to the contemporary trend in urban planning for sustainable mobility.

An exemplary case-study is the city of Torino [Turin], the 'Italian Motown', where the development and crisis of the automotive industrial district has required a complex change of social, economic and technological models.

Re-development following the industrial decline is characterized by the transition from the 'city to make' (the industrial city) to the 'city to know', focused on research centers, creative industries, high tech productions and sustainable infrastructures. Emerging automotive industrial trends are in R&D, environmentally-friendly technologies, sustainable fuel sources and types of design with built-in recyclability.

The 20th-century's motor industry has left an indelible mark, ranging from the 'mere' industrial and technological aspects to the more cultural, having influenced not only design, architecture and landscape, but also music, visual arts and fashion.

Since the '60s, the movement for historical vehicles has highlighted the importance of maintaining and respecting the historical features of artefacts, the 'Fédération Internationale des Véhicules Anciens' and important motor museums were founded. The automotive heritage concerns different types of artefacts: infrastructures and landscape, sites and architectures, motor and car design, trademarks and patents, vehicles and components, companies and actors, artistic and cultural testimonies. Furthermore, an integrated and multidisciplinary approach is essential to the study of the potentials as driver for cultural re-development.

At the beginning of the crisis phase in the '80s, public opinion and decision-makers were not sensitive to valorizing the architectural heritage and landscape of the motor vehicle, and the imaginative scenario was that of a 'green city' in opposition to a 'gray city' of factories, smoke and pollutants.

The scenario of the 'historic automotive heritage' emerges in relation to a new prospect of territorial brand, valorizing the industrial past in relation to innovative re-development.

**Different UNESCO designations** In the case of 'Motown', the architectural heritage consists of a few sites recognized of high architectural value – Ford Piquette Plant at Detroit [*see TICCIH Bulletin #64*], Lingotto at Torino, Fort Dunlop at Birmingham … - and many sites of architectural-testimonial value, which may be designated heritage assets.

Reference to the 'automotive heritage', the framework of the UNESCO initiatives concerns the designation of Outstanding Universal Value ('World Heritage List', 'Intangible Heritage', 'Memory of the World'), and the 'Creative Cities Network', in perspective to develop international cooperation among cities that have identified creativity – from the past to the future - as a strategic factor for sustainable social, economic and cultural development.

In the designation of Torino a UNESCO Creative City, the car industry, the material traditions, the creative design, the technical innovation during 150 years are defined as cross-elements of knowledge to be transmitted in order to promote the identity conscious re-development, to increase the cultural/creative production, to train the local attraction and the tourism. The designation of 'Creative City' promises to be an opportunity to preserve and to emphasize the historic and modern 'car brand heritage'.

### 'Automotive heritage' and the industrial tourism

The automotive industry was absent from the international heritage arena until the end of the '90s. The approach changed with the opening of highly at¬tractive industrial 'car corporate brand' sites, the Volkswagen Group's 'Autostadt' in Wolfsburg and after BMW, Daimler, Opel and Audi in Germany, Toyota in Japan and FCA in Italy have opened centers offering more interaction between the firms and their customers. Nowadays, the automotive sector shows promotion strategies, and success is related to the long-lived and high symbolic value of the products.

The collective consciousness - and not only the 'spectacularization' - of the 'automotive heritage', is connected to educational and informational programs and to the storytelling of the automobile industry and labor, it is a condition to promote conservation policies and to vivify the memory with new languages. The international perspectives of the 'historic car heritage' network regards the knowledge integration, the improvement of accessibility and interaction design, the extension of heritage points and routes. Emergent research and dissemination topic is related to industrial tourism and innovative and creative industries, based on automotive traditions.

The FIAT Lingotto plant was converted by Renzo Piiano, here showing the route up to the famous test track on the roof.

# Worldwide

## Industrial heritage in Indonesia

**Hasti Tarekat, Founder of Sumatra Heritage Trust (Indonesia) and Heritage Hands On (Netherlands)**

**Introduction** Indonesia inherits most of its industrial infrastructure from the Dutch-Indies period. After independence, most of them are under the authority of the Ministry of State Owned Companies. In 2014 there are 119 companies divided into 13 strategic sectors. For more details the Ministry publishes reports in English as well through its website.

Some industrial sectors are in transition to adjust themselves into the modern era and some stay as they were since the Dutch-Indies period without being able to keep up with current demands. Most obvious examples are plantations and their processing factories that stay exactly the same as when they were built in the 19th century. The 67 from 200 sugar factories that were built between 1800 and 1900 are good examples as if time stays put. For impressions, check out a video about Sugar Factory Olean in East Java: Pabrik Gula Olean (Bahasa).

**New challenges** Some institutions and government bodies begin to realize that they have to face the facts that modernization is needed and natural resources in some cases are diminished. This situation creates a new challenge to think over what should happen to the whole set of old production and service processes, either tangible (grounds, machines, buildings, etc.) or intangible (local knowledge, expertise, traditions, etc.). These new phenomena is not widely addressed yet except several efforts to make inventories, to publish books and to organize workshops to gain new ideas. In general, Indonesia enters a preliminary awareness of its industrial heritage potential. Nevertheless, there are a few exceptions have taken place since the last decade.

One of these is Sawahlunto, West Sumatra. The city of Sawahlunto has a rich heritage in coal mining. The coal was discovered in 1867, while Sumatra was a Dutch colony, by the Dutch engineer Willem Hendrik de Greve. At this time there was only a small hamlet. The village grew and in 1888 the Dutch government gave it the status Gemeente (small town). In 1891, the Dutch government opened their first coal mine in the city.

The Dutch also built a train system costing 17 million gulden as a mode for coal to be transported out from Sawahlunto through Padang. Having trains as a mode of transport brought in huge profits from the investment, losses turned into big profits as much as 4.6 million gulden in a year in 1920.

After Independence, activities were undertaken by PT Tambang Batubara Ombilin (TBO) which was later liquidated and became a subsidiary of PTBA (Bukit Asam) which is located in Southern Sumatra.

Globally, from 1940 till the end of the 70's the production of Ombilin coal declined, and returned only tens of thousands of tons per year. Sawahlunto also faced a decline in coal production indicative of the decline in population to only 13,561 inhabitants in 1980. After the golden period of mining and the mine sites closed, Sawahlunto became a ghost town. The mine was finally closed in 2001 and the local government had to find new ways to reuse the assets.

Since 2004, under leadership of its Mayor, Sawahlunto has a policy to explore its industrial heritage as a tourist destination. Historical buildings, sites and railway tracks were rehabilitated with public and private investment. A city marketing program was launched as far as Java and neighboring countries. Sawahlunto is also very active in various networks and platforms of heritage cities. The result is that in 2014 one third of its income comes from tourism.

The Pan-Sumatra Network for Heritage Conservation (Pansumnet) takes an initiative to address issues of industrial heritage in Indonesia through the Pansumnet 2015 Gathering in Sawahlunto, 22-24 October 2015. Besides Sawahlunto, several other initiatives like the cement factory and old harbor of Padang, the capital of West Sumatra, will be case studies.
During this gathering, experts, policy makers and researchers from Indonesia and several other countries will exchange knowledge and experience how to get the best of industrial heritage potentials of Indonesia.

There are a lot of questions from heritage networks in the country about this issue. How to find balance between conservation and economic benefit? What is the right way to reuse industrial site for current needs? What kind of expertise needed to explore an industrial site? Where to begin to exploit such a large industrial site?

# Worldwide

## European heritage awards

No less than seven industrial and engineering sites were among the 2015 Europa Nostra Heritage awards, presented at the Europa Nostra general Congress in Oslo in June 2015. They included the €10.000 Grand Prix, awarded to the Salt Valley of Anana in the Basque County, Spain, which is keeping alive the production of high quality "Flor de Sal" on raised terraces, and the Middleport Pottery in Stoke on Trent, GB, which was built in 1888 as a model factory for the production of world-renowned Burleigh earthenware. In 2010 the business was rescued by The Prince's Regeneration Trust, a conservation charity. The pottery continues to use traditional techniques as well as a growing visitor destination with museum and teaching space.

Valle Salado: Salt has been produced here continuously for over 6,500 years. Wooden channels transport the salt water on to evaporation terraces built of dry stone, wood and clay.

© EscapadaRural

An unprecedented number of items and visits related to Industrial and Engineering Heritage was included, resulting from the activity of its special Industrial and Engineering Heritage Committee (IEHC). Its programme included a visit to the Timber Floating Museum, which perpetuates the large-scale floating activity that started in the late 1700s and stopped in 1985, and a visit to Kistefos, one of the main wood pulp mills of Norway, which helped disseminate reading materials to all until its closure in 1955. IEHC chair Pierre Laconte and members David Morgan and Cyril Winksell briefed the participants on the visit and on IEHC's activities. An amazing sculpture collection installed in the gardens of the former mill includes important works by Anish Kapoor and Tony Cragg.

# Worldwide

**European Heritage Railways Federation reinforces its lobbying**

The European Museum and Heritage Railways Federation, FEDECRAIL, had its General Assembly in Padua, Italy, on 16 April 2015, with more than a hundred delegates from all over Europe sharing information and funding experiences at national and European level.

President David MORGAN emphasized the successful lobbying of heritage railways towards EU institutions, in particular the European Parliament, through former MEP Brian Simpson, who was the Chair of its Transport and Tourism Committee, and the European Rail Agency – ERA – responsible for rail regulation and access of historic railway equipment to the tracks.

The French Heritage Railways Association UNECTO presented the 'Train for Peace", a French-German rail network project. The Italian Railways presented their initiative to create a FS Foundation exclusively in charge of its own Historic Rail Heritage.


**Italy**

We are happy to announce the launch of inGE, an association devoted to encourage the awareness of industrial heritage and culture in Genoa and the rest of Liguria. Our goal is to activate and promote projects able to enhance the studies in the field, the knowledge of industrial architecture and of local industrial tradition. Founded by three experts of industrial heritage and tourism who have significant international experience, inGE is foremost a resource for the territory, aimed at helping it claim its proper place in the international scene of industrial heritage and archaeology, as well as in the constantly-expanding field of industrial tourism.

In June there was the first initiative, a walk through the Ancient Port of Genova. In 1992, in the occasion of the Christopher Columbus Celebrations, the area was transformed into one of the main tourist venues of the city. Once, it however was the core of the commercial, industrial and merchant activity of the Republic of Genoa: a multi-century port structure that still houses important traces of its transformations.

We are looking forward to find and involve scholars, students and citizens, as well as public authorities and private companies, as either associates, sponsors or collaborators. They will have the opportunity to discover, share, suggest and promote the history of industry and local productions in Genoa and Liguria, with the purpose of figuring out its possible future developments.

# Worldwide

## The gap closes - new industrial archaeological World Heritage Sites

**Stephen Hughes, TICCIH Secretary**

This year's annual UNESCO World Heritage Committee held in Bonn on 10-20 July saw an unprecedented number of World Heritage Nominations of industrial archaeology character inscribed on the List. No less than eleven of the sites inscribed, about half the total of 23 cultural sites accepted on the World Heritage list this year, have substantial functional elements. As TICCIH's representative on the two meetings of the December 2014 and February 2015 ICOMOS World Heritage Panel, I was able to examine the characteristics of these nominations in detail, excepting of course the Forth Rail Bridge which was nominated by my own country.

The Forth Rail Bridge, opened in 1890, reflects a time when the heroic scale of engineering enabled humankind to overcome the large natural barriers that still impeded economic development. In this the Forth Rail Bridge continued the progression of early nineteenth-century engineering masterpieces such as the Pontcysyllte Canal Aqueduct, previously inscribed in 2009. One of the first of the TICCIH/ICOMOS World Heritage Studies provided a comparative survey of Bridges and highlighted the international importance of this structure in what was seen an objective global study. The Forth Bridge remains the largest multi-spanned cantilevered bridge in the World.

What may be termed the second industrial revolution was represented by the inscription of two sites. Fray Bentos in Uruguay [see below] and the Rjukan-Notodden, Norway, hydro-electric complex both represent attempts to meet the dietary needs of the hugely expanded and urbanised industrial-era populations of Europe and North America. The dockside Fray Bentos Factory complex was founded in 1859 and began exporting its trademark beef extract and tinned corned-beef to Europe in 1865. The transfer of German meat processing techniques to Uruquay, and of machinery from Scotland, both constituted significant intercontinental transfers of expertise. It has become a treasure-house of British and German machinery installed by overseas partnerships, especially as examples of much of this machinery have disappeared in their countries of origin. The huge factory complex has found a new role as a Museum of the Industrial Revolution.

At Rjukan-Notodden, familiar to film-buffs as the setting for the 'Heroes of Telemark' attack on heavy-water production during the Nazi era, nitrogen extracted from the air was produced on a huge-scale for fertilizer to radically improve crop-yields for industrial populations, initially in three factories built in 1905-15. These were powered by some of the largest power-stations of their period and helped pioneer DC energy production. The extensive associated water- and rail-based transport network has no less than ten surviving lighthouses.

The ambitious Japanese nomination of the Industrial Sites of the Meiji Period is of global significance in that it evidences the first successful intercontinental transfer of industrialisation from Europe to Asia over 23 sites set in 8 areas. The earlier mid-nineteenth century sites represent how the slavish copying of engineering drawings in textbooks failed but that a later melding of knowledge of Western artisan knowledge with indigenous techniques laid the foundation of an extraordinarily rapid and large-scale Japanese industrialisation. Its concentration on iron-smelting, shipbuilding and coalmining complements the earlier inscription of Japan's Tomioka Silk Mill which represents the textile industry. A very public controversy erupted over the use of forced labour on seven of the sites inscribed but the Japanese have committed to interpreting all aspects of the history of the inscribed sites.

One of the world's largest concentrations of warehouses was also inscribed: the Speicherstadt, a complex of 15 huge warehouses built in 1885-1927 on a 1.1km long group of canals and islands set in the Elbe River at the Port of Hamburg, Germany. In planning form these were successors to the mid-seventeenth century Western Islands of Amsterdam: Bickerseiland, Prinseneiland and Realeneiland, inscribed as the north-western buffer zone of the Amsterdam Canal Ring World Heritage Site in 2010. They are complemented by six very large port office complexes including the outstanding Modernist brick-clad architecture of the famous iconic Chilehaus building.

The aqueduct of the Franciscan Padre Tembleque on the Mexican Central Plateau is a 48km drinking-water supply system constructed between 1554 and 1571. Its importance lies in the fact that its technology is a fusion between traditional European aqueduct building techniques as evidenced by Roman constructions such as the Pont du Gard and Segovia Aqueducts (inscribed as World Heritage sites in 1985) and the Meso-American adobe-building constructional techniques used to form the arches. However, the six sections of supporting arches with 137 arches form less than five per cent of the total hydraulic system. The 68 arch Tepeyahualco Aqueduct Bridge remains the highest masonry single-arch aqueduct ever constructed with a 33.84m high central arch supporting a water channel reaching 39.65m.

Two other landscapes were part of the post-medieval and modern expansion of the food and drink production. These were the vineyards, production-sites and cellars of the Champagne and Burgundy agro-industrial landscapes in which the rail-connected stores and warehouses are difficult to differentiate from other industrial landscapes. Yet again, the simultaneous inscription of two examples of one type of functional landscape demonstrates the effectiveness of the series of comparative World Heritage Studies in facilitating a rapid multiple inscription of one type of site. Two French winemaking landscapes are already inscribed and in another subject area, the inscription of six canal World Heritage Sites has followed a similar pattern.

In Turkey, Ephesus is included as a Port City on the Kaystros Estuary with three important and successive harbour basins: Roman, Byzantine and Medieval.

The inscription of the Singapore Botanic Gardens represents a site for intercontinental transfer and propagation of economically valuable plant species and research (including rubber, palm oil and gutta-percha (used in underwater telegraph insulation) in 1859 as a daughter of the Kew Botanic Garden in Britain.

The Christiansfeld Moravian Chapel and Settlement of 1773 inscribed in Denmark represents the evolution of new types of idealistic settlement in the modern industrial period with Protestant workers and communities interpreting humanistic ideals of planned settlement including large institutional buildings for widows and young people in a movement that spread extensively across Europe and North America.

Other sites inscribed and extended include road construction and bridges such as the addition of the 1,500km of the four post-ninth century northern pilgrimage routes to Santiago de Compostela along four northern coastal roads in Spain. A bridge and buildings around Palermo in Sicily represent a fusion of Byzantine, Arab and Norman engineering and architectural expertise.

TICCIH members who are interested in helping develop more World Heritage Studies on comparative international studies in particular industries should contact the TICCIH Secretary at s.hughes10@btopenworld.com.

## Uruguay

### Fray Bentos Industrial Landscape: new World Heritage site

**René Boretto, TICCIH Uruguay correspondent**

Due to the need to increase the presence of industrial sites of heritage value in the list of UNESCO world heritage, Uruguay presented the Industrial and Cultural Landscape Fray Bentos, an example of great significance.

This is the name of the natural and cultural assets linked to the territory occupied by the former ANGLO meat factory and the community in which it was developed. The Industrial activity began here in 1863 with the Liebig's Extract of Meat Company Limited and from 1924 with the ANGLO OF URUGUAY SA, that disappeared in this late 70's.

There are still buildings, machinery and documents of great value to understand the industrial process of the meat in this place called "the great kitchen of the world."

In more than 350 ha it involves everything that could demonstrate and document the meat production cycle ranging from livestock farming to its greatest industrialization at the establishment in order to make it available on the market.

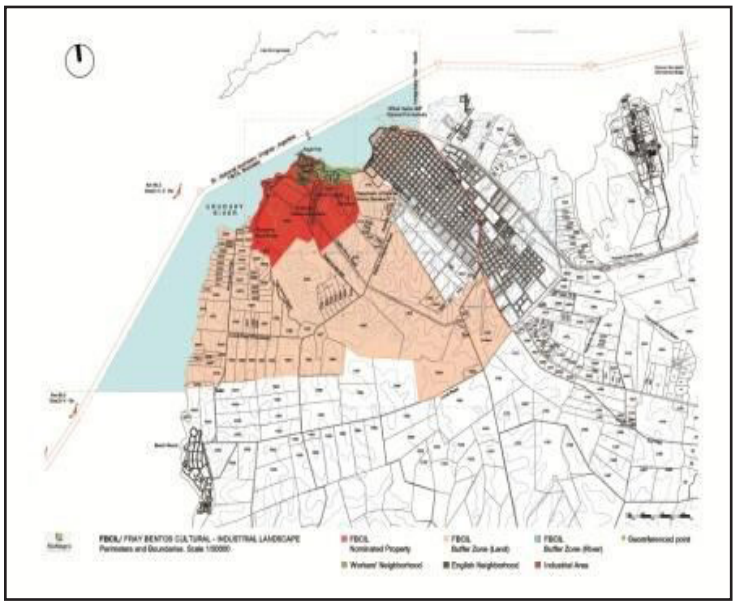
This area is situated near Fray Bentos city, part of which is integrated to the buffer area. The local government considered it as a "heritage system" and has been adequately illustrated in the Plan and Territorial Development of the Micro-region of the city of Fray Bentos, that is designed by the City Council as a strategic plan in which all actions are inscribed on the monument in sustainability criteria, stating the preservation of their values and their full integration into society.

The management tools of this heritage system have been delegated to a "management group" formed by inter-institutional agreement between the Municipality of Rio Negro, the Ministry of Land Planning and Environment; the Ministry of Education and Culture (through the Cultural Heritage Commission's National Office), Ministry of Industry, Energy and Mines and the Ministry of Tourism and Sports. The Cultural and industrial Landscape Fray Bentos is the second site in Uruguay to be included in the world heritage list. Colonia del Sacramento was the first in 1995.

The management group applied a new vision for the site, giving it a look of a system or landscape. The large area surrounding the factory and the neighborhood becomes a buffer zone to prevent the potential direct impact on heritage resources. New spaces and elements are included, understood as part of physical and intangible heritage.

This was a great effort of local researchers and technicians with international technical contributions. Examples: Eusebi Casanelles, Past President of TICCIH, Ec. Miguel Angel Alvarez Areces, President of TICCIH SPAIN and President of INCUNA, Asturias, Professor David Edgerton from England, Dr. Keith Falconer from England, Dr. Loic Menanteau from Nantes, France, Gracia Dorel Ferré of France; Dr. Mark Finlay from U.S., Julián Sobrino Simal from Spain, Dr. Maria Marta Lupano from Argentina , Joaquín Sabaté from Spain, Sr. Luiz Fernando de Almeida, Presidente del Instituto de Patrimonio Histórico y Artístico Nacional de Brasil and Dr. Nuria Sanz, Chief of the Latin America and the Caribbean Unit of the UNESCO World Heritage Centre. In fact, recognition was also for René Boretto, who has been working in this area since 1987 as a historian, researcher and founder of the current Museum of the Industrial Revolution.

We remark special mention of opinions and points of views given by first line technicians at World Heritage that visited our Site invited by us or by the State Party, Dr. Jaime Migone from Chile, Arq. Alfredo Conti from Argentina and Dra. Marcela Hurtado from Chile.



## Industrial heritage in the new era of humanity

**Eusebi Casanelles,**
**TICCIH Honorary President**

Contemporary society is immersed in a new era of humanity characterized by the exponential growth of change, complexity and uncertainty. The consequences of this new context have a great effect on companies, associations and institutions. They have to rethink their objectives, their structure and their strategies to continue to have relevance in their field of work. This transformation of society is due in large part to the scientific and technical advances in recent years, but above all to the exponential growth of data storage capacity and computer processing and to the great progress in the development of communications.

Society in this second decade of the second Millennium is different from that of a few years ago. Values, personal habits, the way of live, work and leisure have changed. This scenario makes me remember the great technical and social changes that also transformed society after the Second World War when technological advances were also one of the factors that most influenced social transformation. Large part of citizens wished to change and to break with the previous model of society, which was reflected in demonstrations that were conducted in different cities around the planet, Paris in May of 1968 remains as the emblem. Alain Tourraine in France (1968) and Daniel Bell (1973) in USA defended the notion that humanity was entering a new era, which called it the "Post-industrial society".

New ways of running companies and institutions were established and at the same time new concepts in the social and cultural field aroused. In cultural heritage goals and management were rethought. The dissemination of the history and knowledge of sites were encouraged using a plain language and audio-visual means. The aim was to democratize accessibility to the sites in order to make easy the visit to non specialised people. Territorial museums were created and in France appeared the idea of the Ecomuseum that wished to integrate the neighbourhood in its activities. The public Departments which dealt with museum and heritage changed their traditional name from called "Department of Fine Arts" to "Department of Cultural Heritage" to make visible the enlargement of its targets. The inclusion of the physical remains of the production centres of the era of industrialization, industrial heritage, as part of the Cultural Heritage was the most relevant fact of their new dimension.

In the heritage field, there are debates at all levels about what must be the future. There are substantial changes in the social environment. For example, contemporary heritage is becoming a new element of identity of cities and competes with the traditional heritage that was dominant until the end of the 20th century.

Natural heritage along with environmental issues is attracting more and more the interest of society and competing with cultural heritage to access public and private funding in a period in which budgets are increasingly restricted. On the other hand this situation overlaps with the attitude of the public sector which prefers to organize more and more specific events than investing in heritage, which tend to be linked to "Tourism Departments" that have a different philosophy from the Culture Departments.

In this context, Industrial Heritage has problems and specific challenges. People involved in this issue have constantly to convince the authorities and owners of sites about the importance of their conservation because Industrial heritage has some intrinsic weaknesses in the cultural field. Usually it has no classical, artistic values by which society deems that the site must be kept only for the contemplation of the visitors; neither has it had enough antiquity as other heritages have which gives them a special charisma. The industrial heritage is almost exclusively a "knowledge heritage". Its value is related to the understanding of its function and to the impact it caused in its social and physical environment. It is a document and evidence of a world of work that changed the world. Reuse, which is the most relevant way for the conservation of the industrial heritage, is another problematic aspect. The adaptation of the site to a new use means a modification of its authenticity which differentiates it from the popular conception of cultural "monument" in which its conservation is justified by only its existence and the best restoration is the minimum state of intervention.

Life has never been easy for the industrial heritage but if referred to the results of the number of sites preserved and catalogued in the last 25 years the fight for its conservation is very positive. The current society presents challenges but also many possibilities to deal with them. One of society's features is its tendency to be collaborative and in this aspect the industrial heritage has an advantage because citizen participation has always been essential to the sites conservation. A second feature is globalization and in this regard TICCIH has made a great effort to be implemented in all continents and is currently present in most countries that have a minimum industrial history. The third is the use of technologies that are already used in studies and inventories but which are essential for fostering understanding and disseminating comprehension of sites. In "knowledge heritage" as the industrial is, these new technological tools are becoming essential.

Finally I would like to refer to the importance that the cultural landscape is acquiring in the planning of the territories. It is an important issue for industrial heritage and the best way to view the complexity the industrialization in a region. The nomination of world heritage to the industrial landscape "Bassin Minier Nord-Pas de Calais" the largest list of UNESCO is a good example. TICCIH's Congress ' Industrial Heritage in the Twenty-First Century, New Challenges "in Lille is a good starting point to lead a profound reflection on the future and the practices in the development of the industrial heritage.

**TICCIH Lille**

*In the last of the series examining the treatment of industrial heritage in France leading up to the TICCIH Congress in Lille, Geneviève Dufresne presents two dramatic conversion projects in the great harbour city of Marseille, the La Joliette docks and Arenc grain silo.*

## Industrial heritage in the renewal of Marseille

**Geneviève Dufresne**
**English version Paul Smith**

This is one of the largest operations of urban renewal in southern Europe. Launched in 1995, it comprises the rehabilitation of an area covering 480 hectares at the heart of the city of Marseille, between the commercial port at La Joliette, the old port and the Saint-Charles railway station. It is an operation of urban renewal but also a project of economic, social and cultural development. It has considerably increased the attraction of the city and enhanced its reputation both in the Mediterranean and Europe. The successful conversion of the Arenc silo to its new uses can be compared with the recent projects in Cape Town [see *TICCIH Bulletin 64*] and shows that a building of this scale, emblematic of the port's activities, can be re-used. Even if the constraints for the re-use are considerable, the end result is viable and fits into the larger context of the urban operations undertaken at Marseille by the Euroméditerranée projects.

Development has been stimulated recently by the arrival of the high-speed TGV trains, which mean that Marseille is now only 3 ½ hours from Paris (and vice versa). In 2013, when Marseille was cultural capital of Europe, most of the major projects had been finished: the CMA CGM tower, designed by the Iraqi-British architect Zaha Hadid, the MuCEM (Musée des civilisations de l'Europe et de la Méditerranée), the Villa Méditerranée, the FRAC Paca (a regional collection of contemporary art), the Arenc silo, the Joliette port business quarter, new housing, commerce, etc. Some important projects are still to be finalised, however, such as the Euromed office centre with its cinema financed by Luc Besson's EuropaCorp company.


With a floor surface of 198,000 square metres the Joliette docks was the largest warehouse building in Europe at the time of its opening.

Perspectives / Vues 3D : © 5+1AA alfonso femia gianluca peluffo

**The Joliette docks** The Marseille docks date from the middle of the nineteenth century and represent a major project of the Second Empire. Marseille was one of the leading ports of Europe, but in order to develop its activities it had to expand. As its trade links spread throughout the Mediterranean, the plan was developed to combine maritime docks, where the vessels could be berthed and unloaded, and the warehouses where their cargoes could be stored. Following a decree signed on 23 October 1856, the French State devolved the future exploitation of these docks and warehouse facilities to the city of Marseille who immediately transferred this concession to a company run by the engineer Paulin Talabot. Talabot founded his 'Compagnie des docks et entrepôts', and chose Gustave Desplaces as its architect. On an 18-hectare site situated close to the railway, the new dock ensemble comprised 2,700 metres of quays and a vast warehouse building known today as the 'Docks de la Joliette', designed to receive 150,000 tonnes of merchandise.

The excavation and building project was commenced in 1858 and completed in 1864. The dimensions of the warehouse building are exceptional and suggest some sort of numerological preoccupation. The building is 365 metres long, like the days in a year, by 37 metres deep. It has four courtyards, like the four seasons, 52 gates, like the weeks of the year and seven floors like the days of the week (not counting the basement).

It displays many innovative features such as the internal division of the storage spaces to prevent the spread of fire, an entirely metallic roof, iron beams and joists to carry the vaulted brick flooring, double roofing to avoid temperature variations and hydraulic equipment for the unloading cranes and for the lifts. Two 120-hp steam engines drove the four hydraulic accumulators, the first in Marseille, and powered the cranes and the swing bridges.

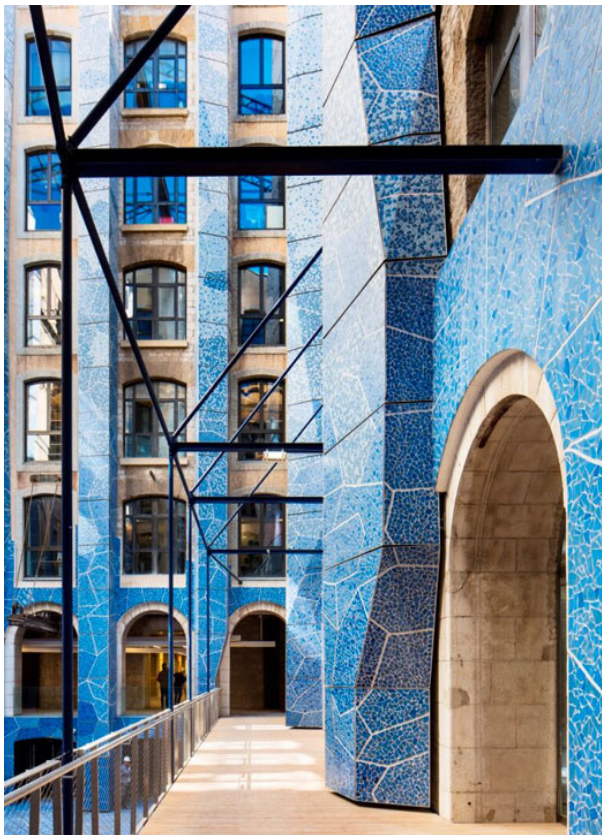
The building materials were of high quality with a prestigious office for the company 'Compagnie des docks et entrepôts' fronting the warehouse, with a façade in red brick and white stone.
© Géraud Buffa

**The two conversion projects** The warehouse building gradually lost its usefulness after the damage of the Second World War, the creation of a new petrol and container port to the west of Marseille, and the decline of trade with Algeria after independence in 1962, and closed down in 1988. The first conversion project lasted from 1992 to 2002 after the decision was taken to keep the building and give it a new life. The SARI Company of property developers, one of the leading promoters of the Défense neighbourhood to the west of Paris, purchased the Joliette building in 1991, shortly before the definition of a major project of urban renewal covering the whole area and which was baptised 'Euroméditerranée' in 1995. The Marseille architect Eric Castaldi was chosen for the conversion project. The work began in 1992 and went on up to 2002, and saw the progressive accommodation of 220 firms, employing 3,500 people. Company headquarters, regional directions, restaurants and other services gradually occupied the space. The four courtyards became atria and were restored with great care, each atrium dedicated to one of the four elements, earth, water fire and air.

On the ground floor, an inner street runs right through the building leading to the commercial premises and restaurants on either side. The conversion project respected the external architectural appearance of the building, but had to enlarge its windows. Inside, the renovation also respects the original volumes and materials: stone, brick vaulting and metallic structures. Broad circulation passages on each section's axis, enhance the appreciation of the architecture. These passages are an essential part of the project and, according to requirements, bring lighting to the central part of the building. The operation cost 63 million euros for a surface of 77,702 square metres.

The second reconversion project commenced in 2013 and will be completed by the autumn of 2015. It began in 2007 when JP Morgan Asset Management, acquired a large part of the dock building in partnership with Constructa Asset Management. Run by Constructa, the second renovation project is the work of the 5+1AA architectural team (Alfonso Femia Gianluca Peluffo). The dock building will be considerably altered and opened up on its port side with local shops intended to bring life to the neighbourhood after the offices close. There will be a large increase in the commercial surfaces at the ground-floor level. Alongside the 17,000 square metres of office space already in existence, there will be about 80 new shops and a 400-square-metre covered market.

The first reconversion project from 1992 had a relatively sober approach, respecting the architectural appearance of the outside of the building, and its volumes and original materials, notably the brick vaulted roofs and the metallic structures. Today's renovation, on the contrary, seeks to 'embellish' what is already there and to 'give it colour', concentrating on the passage from one courtyard to the next. The inner walls here will be faced with metallic structures to which coloured ceramic panels and plant walls will be attached.



Today's renovation of the Joliette docks courtyards.

© Boegly


Arenc silo today.

© Géraud Buffa

The grain silo on the Arenc basin was built between 1926 and 1927 by the Marseille dock company, and enlarged with a new elevator tower to its north façade in 1954. This huge construction passed into the hands of the autonomous port authority of Marseille who, at the beginning of the 1990s, planned its demolition to make way for new car parking surfaces. In 1998, at the Cilac's national conference that year in Marseille and devoted to port heritage, the idea of converting this disused silo building was vigorously defended.

After several years of uncertainty, a major project finally emerged which envisaged the conversion of a part of the building for offices and a part for a new performance hall for concerts, theatre and even opera, with seating for 2,000 and inside parking. This project was signed by Eric Castaldi, in association with the promoter, the Société de gestion immobilière marseillaise. Work began in 2007.

**The re-use options**

The silo building was originally located on a quayside but the dock here was filled in after the war. The silo is of vertical cylindrical cells mounted on stilt-like pillars, allowing for rail and road circulation beneath the building. This quayside level is still the property of the port authority, which means that access to the inside of the silo is via external ramps leading up to the first floor.

Most of these characteristic structures have been retained. From the second level up, where office space has been created, new floors in concrete have been inserted and the inner walls of the individual cells removed to open up larger spaces. On the outside, the rounded silhouette of the cell structure is retained but the walls now have windows.

The other two thirds of the building, with the 1954 elevator tower, will accommodate a polyvalent hall for 2,200, adaptable for opera, theatre and concerts. The conservation of certain technical elements in the elevator tower had to be abandoned. The north façade, where the openings had been walled over and covered by a huge mural, was restored to its original appearance, and the windows opened up again. In this part of the building, the first-floor level is reached by a ramp identical to the one on the other side for the offices.

The first floor keeps its large so-called 'mamelles', the conical 'udders' of the individual storage cells used for emptying the grain into sacks or waiting lorries and rail wagons. ©Géraud Buffa

© Géraud Buffa

# TICCIH News

### Why not shape the future of TICCIH?

**Stephen Hughes, TICCIH Secretary.**

Elections will be held at this September's TICCIH congress in Lille to determine the President and Board of TICCIH for the next three years. Under the TICCIH constitution, the composition of the Board is decided at the General Assembly in Lille on Friday 11 September at 16.00. All National Rep¬resentatives are entitled to vote so it is very important that TICCIH members contact their National Representatives to discuss potential candidates for the Board, but also to state their preferences once the candidates are known. This is a great opportunity to influence the future of TICCIH, and to ensure that it has the drive and energy to tackle the challenges facing the organisation over the coming years. You will be able to find information on National Representatives on the TICCIH website.

Any paid-up member of TICCIH can stand for the TICCIH Board, to help guide and develop the organisation across the three years between congresses. If you are not sure whether you have paid for 2015 check the online Directory of members at www.ticcih.org . It is very easy to attend Board meetings as most are held virtually by computer. They are held at least once a year, sometimes also at a convenient TICCIH, ICOMOS or other conference or meeting. To be elected, candidates need to be nominated and seconded by two other current paid up members. Nomination forms will be issued shortly to all National Representatives and nomina¬tions can be made at any time up to the eve of the elections, as long as they are received in sufficient time by the General Secretary, Stephen Hughes. Nomination forms can also be obtained directly from the TICCIH Secretary at s.hughes10@btopenworld.com .

The TICCIH General Assembly 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. TICCIH has a maximum of 14 Trustees, one third (i.e. 5) of whom must retire at each General Assembly although they can stand for re-election.

The following three Board members were first elected at Terni in 2006 and are due to retire, though they can be reselected: Dag Avango of Sweden, Iona-Irina Iamandescu of Romania and Jaime Migone Rettig of Chile. Two of the six Board members elected or re-elected at Freiberg in 2009 also need to stand down. The five first elected at Freiberg were: Benjamin Fragner of the Czech Republic; Lin Hsiao-Wei Lin of Taiwan ROC; Massimo Preite of Italy; Iain Stuart of Australia and Patrick Viaene of Belgium. Benjamin Fragner has decided he will be standing down because of other commitments and Patrick Viaene will probably stand down and may stand for re-election. Miles Oglethorpe of the United Kingdom was also re-elected at the German General Assembly and will stand for re-election. There may be more vacancies as not all the Board members have confirmed with the Secretary if they want to continue or not. Gràcia Dorel-Ferré of France and David Worth (TICCIH Treasurer) of South Africa are co-opted members of the Board and could also choose to stand for election, but Gracia has decided she will stand down in Lille.

My thanks on behalf of TICCIH for all those who have so generously given of their time to further the progress of the organisation.

# Training

### New Master in Management of Industrial Heritage: project, culture, territory and society

**Julián Sobrino Simal, Director**
**Laura Martínez Hernández, Course Manager**

The deeper study and enhancement of industrial heritage, singularly from the second half of the twentieth century, has been a prolific scope of research, experimentation and management, which found professionals from different disciplinary areas, both arts and humanities, as well as science and engineering, being characterized this broad field of knowledge for its transversality and multidisciplinarity.

Industrial heritage has been studied from different approaches which have not formed – so far – a unified methodology, but have created a theoretical framework of great vitality. It describes the methods and tools of the epistemological context of their own scientific cultures, such as learning and conclusions derived from the investigation in common by multidisciplinary teams.

As a result of this complex process of convergence we can see a constant renovation of the praxis of industrial heritage, highlighting the need of adaptation of theoretical models to practical cases, to the realities that are able to adjust to the extraordinary variety and diversity of the testimonies of industrialization.

The aim of the new Masters course at the Higher Technical School of Architecture, Department of History, Theory and Architectural Composition at the University of Seville, Spain, is to overcome the theoretical dimension to stand at the proper territorial and socio-cultural environment of each case, safeguarding its main traces.

This becomes fertile ground for promoting socio-economic development, driving cultural management and facilitating territorial planning, given that during the intervention, methods and strategies are followed aimed at ensuring the viability and sustainability of the projects.

# Training

In the academic sphere in Spain and Latin America the current situation reflects, among other factors, the delay of our societies in valuing the testimonies of industrial culture, a fact that is manifested in the lack of a master with industrial heritage as operating range of training.

This makes the new offer of a master made by the ETSA at the University of Seville especially relevant. It is defined by clear and precise objectives respecting postgraduate training that should be received by professionals who will be agents in the management of industrial heritage.

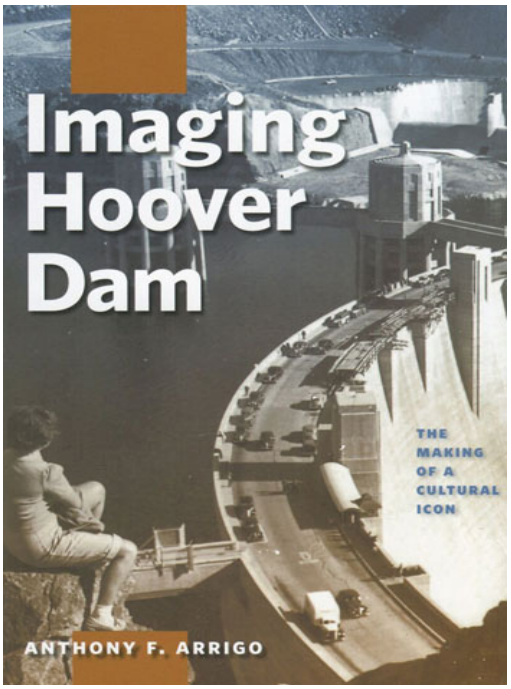
MAPIND aims to provide advanced training to university students, professionals and administration technicians in matters concerning the Industrial Heritage.

Access to the Master studies may be produced, preferably, from the degrees of Architecture, Engineering, Economics, Fine Arts, Art History, Anthropology, History, Humanities, Archaeology, Sociology, Geography, Law and Tourism.

The set of thematic units is intended in order to provide the postgraduate students with a referential framework for their research and/or professional work development, in which ideas, contents, methods and applications promote a higher level of specialization in the curricular path of studies of industrial heritage.

LANGUAGE: Spanish. mapind-secretaria@us.es PRE-REGISTRATION: from July 1 to September 20, 2015.

# Publications




**Anthony F. Arrigo, *Imaging Hoover Dam: The Making of a Cultural Icon* (Reno: University of Nevada Press, 2014). ISBN: 978-0-87417-953-8. 320 pages. Hardcover, $39.95. 57 b&w Illustrations.**

**Betsy Fahlman, Arizona State University**

The great dams of the New Deal era rank amongst the most spectacular public works projects undertaken by the federal government. The most notable is the Hoover Dam, once the largest in the world, and it is this structure that Anthony F. Arrigo explores in his imaginative *Imaging Hoover Dam: The Making of a Cultural Icon.*

He demonstrates how the dam was the site of conflicting rhetorical ideologies, explicating both fact and perception through the lens of visual culture, revealing how business interests, the government, and the news media carefully coordinated a campaign to shape how the public apprehended the dam.

Surprisingly, despite the structure's extensive documentation, Arrigo was unable to "identify any particular image as the iconic image of the dam." While scholars have written about individual aspects of its imagery, no one has undertaken "a comprehensive analysis of its whole visual repertoire." Arrigo's project, therefore, explores how pictures of the dam were deployed in advertising campaigns, government propaganda, and journalism to promote varying cultural, ecological, religious, and agrarian imperatives. Arrigo juxtaposes narratives of "economic and industrial triumph" against counter-narratives of the technological domination of the natural environment.

The book is organized into seven chapters, each of which considers a specific aspect of how the "hyper-visualization" of the dam's iconography served multiple "rhetorical purposes." Newspapers and magazines were the primary medium for the dissemination of the many images of this "icon of engineering achievement."

In Chapter 1, "Nature, Culture, and the Divine Right of Transformation," Arrigo contextualizes the construction of the dam within a "rich history of Western religious, political, and cultural imperatives." America as a "land of transformation" was impelled by notions of Manifest Destiny, the divine right of western expansion that was achieved by complex political maneuvering. Issues of the environment and wilderness swirled around attempts to subjugate the natural world for human benefit.

"Natural Disasters and Political Adversity" considers the "erratic nature of the Colorado River" with its cycles of flood and drought. The dam would supply drinking water, flood control, irrigation, hydro-electric power to the seven states of the Colorado River Compact.

# Publications

Most of the publications on the dam appeared in southern California and Nevada newspapers, and this is the subject of "Illustrating the Dam." Pictures of male workers presented an insistent "hyper-masculinity" that symbolized the "strength, confidence, intelligence, and leadership" essential to realizing the "largest civil engineering project in history outside the Panama Canal".

Arrigo, in "Picturing the Sublime", considers the staggering scale of the dam's "technological sublime" and its impressive physical statistics. It showcased "values of efficiency, utilitarianism, and functionality," helping to generate a sense of "national identity" and modernity by portraying efficiency and masculinity.

While the documentation of the construction of the Hoover Dam is extensive, "The Unseen" considers what is missing from the photographic record. The Bureau of Reclamation had its own photographers, and tightly controlled the distribution of images in order that what was released "expressly supported a particular narrative." Criticism was avoided, and strikes, labor and safety problems, deaths, and unhealthy working conditions were all off limits. Women, African Americans, and Native Americans were largely excluded from the visual record.

"Imaging Labor" is focused on workers. Job seekers flocked to the area, and by 1931, there were 90,000 applications for less than 6000 positions, a situation exacerbated by limited openings and discriminatory hiring practices. The site was hot and dusty, with poor water, food, and housing. The work was "backbreaking, often life-threatening", conducted within the "suffocating and relentless" heat of the desert, where temperatures regularly reached 120 degrees.

With the completion of construction, "the purpose of the visual and verbal depictions of the dam sifted dramatically", and the Bureau of Reclamation began promoting the area "as a tourist and vacation destination" with a focus on water recreation at Lake Mead. This is the subject of the last chapter, "Advertising and Tourism." Commerce trumped engineering, and the dam appeared in campaigns for a diverse range of unrelated products, including cigarettes, cars, and whiskey.

Well-chosen illustrations enhance Arrigo's thorough analysis of the visual and rhetorical devices central to the imaging of the Hoover Dam. His approach is imaginative, thoroughly researched, and supported by convincing theoretical constructs. Imaging Hoover Dam: The Making of a Cultural Icon is an excellent contribution not only to understanding the dam itself, but more broadly its position as a resonant artifact of the American West and national identity.


***Reanimating Industrial Spaces: Conducting Memory Work in Post-Industrial Societies***

A new volume explores the relationships between people and places of former industry through approaches that incorporate and critique memory-work. The volume, containing 12 chapters, uses a set of diverse case studies - including iron smelting in Uganda, Puerto Rican sugar mills and concrete factories in Albania - to examine differing socio-economic contexts and approaches to industrial spaces both in the past and in contemporary society. A range of memory-work is considered and illustrated: from ethnography, oral history, digital technologies, excavation, and archival and documentary research.

The editor, Hilary Orange, is a Senior Archaeologist at the UCL Institute of Archaeology. She completed her PhD at UCL on 'Cornish Mining Landscapes: Public Perceptions of Industrial Archaeology in a Post-Industrial Society'.

"Taking a global perspective, Reanimating Industrial Spaces presents important new engagements with the archaeology, anthropology and cultural geography of post-industrial societies, drawing on approaches which simultaneously employ and critique both memory and post-memory work to restore and breathe new lives into the locations of former industry."

Rodney Harrison, Reader in Archaeology, Heritage and Museum Studies, UCL Institute of Archaeology
The volume can be ordered via the Left Coast Press.

# Coming Up

## Conferences and congresses

**BigStuff 2015 - Technical heritage: preserving authenticity – enabling identity?**

Big Stuff is an international meeting focused on the challenges and requirements for conserving the large industrial structures and technical objects that form such an important part of our modern heritage. The conference will be held at the mining museum Centre Historique Minier (CHM) in Lewarde/France from 3rd to 4th September 2015, just before the TICCIH 2015 Congress. There is a day trip around the mining areas of North France on 5th September. It features two days of talks and discussions about the preservation of industrial sites, oversized objects, machinery, and working technology in the context of their significance and interpretation.

Speakers will talk on topics including corrosion protection for large equipment, preservation of concrete structures, the challenges of operating heritage machinery and of preserving layers of service history on technological objects. Objects discussed will include a 14 tonne seismograph, a portable radar (bring your own train wagon!), radio and telephone equipment, transport items and infrastructure, a hammer forge, space age rocket engines and many more. Other issues covered will include strategies and case studies for heritage, community and industry groups working together to preserve historic technology and associated intangible heritage, and the preservation of technology heritage in situ within industrial and urban contexts.

## 2015

**France** - BigStuff 2015: the Centre Historique Minier, Lewarde, during the 2015 TICCIH Congress
3-4 September 2015 www.bergbaumuseum.de/bigstuff2015

**France** - TICCIH Congress Lille 2015: Industrial Heritage in the Twenty-First Century.
5-14 September 2015 http://ticcih-2015.sciencesconf.org/ and on Facebook https://www.facebook.com/congresticcih2015?fref=ts

**UK** - AIA Annual Conference, Brighton
4 - 9 September 2015 http://industrial-archaeology.org/aconf.htm

**Bulgaria** - UNESCO International Conference *Digital Presentation and Preservation of Cultural and Scientific Heritage*, Veliko Tarnovo,
28 - 30 September 2015 http://dipp2015.math.bas.bg/ Czech Republic - ERIH Annual

**Spain** - XVII International Conference on Industrial Heritage The legacy of industry. Archives, Libraries, in Gijon
30 September - 3 October 2015 www.incuna.es

**Czech Republic** - ERIH Annual Conference 2015, *New ideas and innovations for the interpretation of industrial heritage,* Pilsen, European Capital of Culture in 2015.
21- 23 October 2015 www.erih.net



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**TICCIH** is the world organization 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 $30 (USD), corporate membership $65, and student membership. $15

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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 online to members four times a year.

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**ISSN: 1605-6647**