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Underground in the *Heritage of Mercury Mining Park of Almadén, Spain*. The *baritel* rises 13m, cut into the rock in the 18th century, lined with rubblework and vaulted with brick and stone, and now houses a reconstruction of the mule-driven whim installed for extracting the cinabar ore.

Opinion

After inscription: industrial heritage and the UNESCO list

Massimo Preite, TICCIH Board member

The inscription of industrial heritage sites on the UNESCO World Heritage List has always represented a strategic mission among the TICCIH constituency. To this end, in 2000 an agreement was signed between ICOMOS and TICCIH: *"that in respect of matters relating to the study and preservation of the industrial heritage, TICCIH is officially recognised by ICOMOS as the scientific consultative body for ICOMOS... in expertising application for the World Heritage List and in writing contextual reports for the World Heritage Committee that touch on the main fields and branches in industrial heritage"*.

TICCIH's efforts to promote greater representation of the industrial heritage on the WHL has also manifested itself in the preparation of theme-based studies - Canal Monuments, 1996; Les Villages Ouvriers, 2001; the International Collieries Study, 2003; Quarry Landscapes (in preparation) etc. - aimed at defining appropriate and relevant criteria to help make the selection.

Both these tasks that fall to TICCIH - as advisor on candidacies, and a promoter of thematic studies - were confirmed and given a new boost in the recent Memorandum of Understanding (MOU) signed by TICCIH and ICOMOS in Florence in November 2014, regarding a framework for collaboration on the conservation of industrial heritage.

Opinion

In the internal debate within TICCIIH, however, a need is beginning to emerge to extend monitoring from the pre-WHL inscription phase – the selection of sites deserving of candidacy, via thematic studies, support for compiling candidate dossiers, and acting as advisor for evaluating candidacies – to the *post-inscription* phase.

In other words, there is a perceived necessity to start to assess the consequences of inscription, both in terms of benefits, and the unexpected side-effects and unforeseen difficulties in managing the industrial heritage that is declared to be a UNESCO heritage site.

The question that needs to be answered is basically: To what extent has the WHL listing of an industrial site repaid the huge investment of resources used to promote the candidacy (a candidacy that often takes years of work)?

The available knowledge in this connection is extremely scarce, since very few comparative studies have been done to assess the results of WHL inscriptions, and to verify in particular whether, and to what extent, the advantages actually achieved in terms of the impact on tourism, and new businesses, are such as to compensate for the costs involved in securing the much sought-after UNESCO recognition.

Among the few research studies on the post-inscription phase worthy of mention is, first and foremost, the report prepared by PriceWaterhouseCoopers LLP (for the Department for Culture, Media and Sport, Cadw, and Historic Scotland) on “The Costs and Benefits of World Heritage Site Status in the UK” (2007). By means of a comparative analysis of 27 UK World Heritage Sites, the study identified 8 potential benefit areas (Partnership, Additional Funding, Conservation, Tourism, Regeneration, Civic Pride, Social Capital and Education) and, for each of these, it noted the gains that took place after inscription.

A more recent work is that contained in the “Rapport d’Activité 2014” drawn up by the Mission Bassin Minier Nord Pas de Calais, France, two years after UNESCO inscription. The report, which measures the results of actions undertaken with reference to two strategic goals (major transversal steps in the Bassin Minier, and Mission Bassin Minier partnerships), sums up the situation as regards “implementing the UNESCO management plan” and the activities of local world heritage committees.

The large number of bodies involved in the committees’ activities confirms the benefit in terms of increasing the “social capital” produced by inscription.

From these two works, despite the fact they are different from each other, there emerges a common need not to slow down the efforts that the candidacy required. Indeed, an effort must be made to “govern” and manage the new challenges and opportunities which the heritage site will have to face after its inscription.

It is to this end that we have decided to inaugurate, in this edition of the *TICCIIH Bulletin*, a space specifically set aside for these problems, and open to observations and comments from officials in charge of registered WHL-industrial sites.

The first invited testimonial is by Francisco Javier Carrasco, Director of MAYASA, the company that runs the Almadén mining park in Spain, which was inscribed in 2012 along with the Idrija mine in Slovenia. Together they bear testimony to the intercontinental trade in mercury which generated important connections between Europe and America over the centuries.

Carrasco’s article provides detailed documentation of the exceptional historical and technological value of the Almadén Parque Minero. It should be said that the two years that have just elapsed are probably too short a period to reliably assess the effects of inscription. Nevertheless, Carrasco provides us with a series of highly encouraging facts and figures showing a marked increase in visitors, and activities connected with the tourism sector (places to stay, bars and restaurants, services etc), although these refer to a period of time (2000 – 2014) in which the post-inscription years only represent the final part. Moreover, even the benefits seen in some sectors of rural society, which were economically and socially marginalized prior to the institution of the Parque Minero, do not appear to be attributable to the inscription. In the next edition of the *Bulletin* we will carry a complementary article from officials at Idrija, allowing our readers to assess the combined effect of inscription on the two sites.

In conclusion, we will simply report that among the consequences of this “serial inscription” (Slovenia and Spain) appears the decision of the Amiata Mining Park in Italy to get its own candidacy under way as an “extension” of the Almadén-Idrija registration: if this attempt were to be successful, this would mean that all the major mercury mines in Europe would appear on the UNESCO List.



Report

The Domino effect

Miriam Kelly

The demolition of the Domino Sugar Factory in Brooklyn, New York, is nearly complete. Constructed from the 1850s, Domino was the largest sugar refinery in the world, producing over half the sugar consumed in the United States. An icon of the Brooklyn waterfront, large parts of the complex have now been cleared to make way for a major new residential development.

From the slaughterhouses, breweries and rope makers of the late-17th century, Brooklyn grew into one of the largest industrial centers in America. The waterfront through Williamsburg and Greenpoint saw the concentration of heavy industry, their chimneys a counterpoint to the skyline of Manhattan on the opposite bank. It was here that Brooklyn's 'five black arts' of glass, iron, ceramics, printing and the refining of sugar were practiced.

From the mid-19th century, sugar production was Brooklyn's most important industry. Of the five major factories that once lined the East River, the former Havemeyers & Elder Refinery, known after 1901 as the Domino Sugar Factory, was the largest and most significant structure to survive. The company opened its Williamsburg plant in the 1850s, and by the late 1870s had become the largest sugar manufacturer in the world.

The eleven-acre Domino plant fills the view from the Williamsburg Bridge. The Filter House, which was once the tallest structure on the Brooklyn waterfront, rises to a height of 155 feet. The processing of the raw sugar began in this building where it was mixed with water and filtered through canvas and charcoal. The solution then flowed to the adjacent nine-storey Pan House, where it was reduced to syrup and pumped to the Finishing House to be dried and graded for sale. Raw sugar was supplied from America's deep south, mainly Louisiana and the Caribbean, where it was primarily harvested by slaves. Although slavery ended in the United States in 1865, it continued in Cuba, the world's largest exporter of raw sugar, until 1886.

All types of sugar were produced "from the dominoes and cubes of cut loaf, through the various grades of hard sugars, down to the cheaper grades of yellow, or straw-coloured sugars." The Domino plant was a major Brooklyn employer, hiring primarily untrained labour with some 4,500 workers on the payroll in 1919. The great majority were recent immigrants and some twenty percent were women. They worked around the clock in ten-hour shifts, and conditions were notoriously hard. Most workers lived in the vicinity of the factory or along trolley lines that led to the waterfront, occupying former single-family residences that had been converted to boarding houses and tenements. The number of workers fell steadily after the Second World War to 1,500 in 1959, dropping to less than three hundred in 2001.



The Domino Sugar Factory from the Williamsburg Bridge prior to demolition in October 2014.

Report

Like many industrial buildings of its time, the Domino Sugar Factory was designed in the American round-arch style, a variant of the German Rundbogenstil and the Romanesque Revival. The new refinery was as fireproof as possible, with iron columns, beams and girders, as well as four hundred electric lights. A large oval smokestack dominates the west façade of the Filter House, facing Manhattan. Though the base of the chimney is original, most of the section that rises above the roof was added following a major expansion during the 1920s.

The plant closed in 2004 and the site was acquired by the development arm of the Community Preservation Corporation, which focuses on the creation of community housing. This purchase effectively locked-in the future use of the site and limited the consideration of other reuse options. A year later, the Department of City Planning rezoned the Williamsburg waterfront from industrial to residential in an attempt to release land occupied by largely redundant industrial sites for housing, particularly affordable and lower-rent homes for working people. The re-zonation set out encouraging requirements for active streetscapes and opportunities for a new public esplanade and state park along the waterfront. It also gave the green light to high rise development, but on a relatively modest scale of up to 250ft, or twenty-five storeys. Taller buildings were to be located towards the centre of the redevelopment area, scaling down to meet the low-rise neighbourhoods adjacent which were originally constructed as housing for industrial workers in the late nineteenth and early-20th centuries.

In response to public concern over the fate of Domino following the Williamsburg re-zonation, the Sugar Factory was granted Landmark status in 2007. The designation acknowledged Domino as an icon of the Williamsburg waterfront and its historic and cultural significance as part of Brooklyn's industrial past. However, only the nucleus of three buildings on the site were protected, facilitating the demolition of all the other structures that make up the refinery, including the oldest. The limited extent of the Landmark designation failed to protect the refinery as an interconnected whole but rather focused on the buildings considered to be most important, architecturally impactful and with the greatest capacity for reuse. This argument was presented as a reasonable balance for new development that would create much needed affordable housing and bring new life to an area of Brooklyn which was, at the time, considerably run down.

In the decade since the Williamsburg waterfront was rezoned, the neighbourhoods surrounding the Domino site have transformed. Now the ultra-cool, hipster hang-out of New York, property prices have rocketed and a rich mix of culture and enterprise has taken root. In this context, Domino could and perhaps should have been more than a residential megaproject. Options for the reuse of the historic buildings as a major venue for the arts, sports, performance and learning could have been considered, given the exceptional location and need for world-class facilities to serve a dynamic and creative young population.

Successful projects regenerating industrial to cultural such as Pittsburgh's Bethlehem Steel Plant, DIA Beacon and Manhattan's West Piers could have been considered for Domino. Used occasionally for sell-out 'pop-up' events, the Domino complex demonstrated its magnetism and capacity to inspire. However, once gladiatorial combat between developers had commenced, approaches to maximise the reuse of Domino's historic fabric and remarkable industrial legacy could no longer be a priority.

It is difficult to square the zonation redevelopment framework with the current design proposals for Domino. The site was sold to a respected Brooklyn developer in 2012 and a \$1.5 billion scheme by SHoP architects is now being implemented. Although SHoP's designs are a considerable improvement on an earlier scheme by Viñoly, at sixty storeys, the overwhelming verticality of the development sets a worrying precedent for the remainder of the historic industrial waterfront. The scheme is largely welcomed locally because it utilises a site redundant for over a decade, provides housing (a healthy percentage of which is affordable), new office space and a large public landscape to rival Battery Park. It is bold and ambitious, making a determined step towards the Manhattanisation of Brooklyn.

What remains of historic Domino is the central nucleus of the refinery including its chimney. Once the tallest building in Brooklyn, it will soon be dwarfed by its high-rise neighbours and isolated in a new public plaza. The exteriors of the historic building will be retained and repaired. The interior will be gutted, rebuilt for office and retail space, and crowned by multi-storey, glazed pop-ups. The famous 'Domino Sugar' sign has been salvaged and will be re-erected on top of the historic building. Everything else on the site has been demolished, with the exception of cranes, tanks and other curiosities salvaged from the plant to be reinstalled as 'artefacts' along the new waterfront park.



The proposed redevelopment of Domino designed by SHoP Architects.
(Image Credit: SHoP Architects PC)

Report

Hollowed-out and decontextualized, what heritage value remains of Domino? Where does this decade-long negotiation leave Williamsburg's remarkable industrial heritage? The redevelopment is being delivered by an exceptional team with a track record of creating thriving new neighbourhoods from the husks of abandoned industry. In Domino's case, it is more of a wiping over, but perhaps a sentimentalised nod to the past through a rusted industrial artefact is sufficient for a new, emerging population? If that is the case, then the city's goodbye to Domino in the summer of 2014 was surprisingly poignant. Inside the cavernous packing halls, artist Kara Walker's *A Subtlety* charted the painful journey of sugar production from the slave plantations to Brooklyn's refineries. A crystalline, sugar-coated Sphinx glowed luminous against walls blackened and still sticky with a century-old skin of molasses. Cast sugar figures of slave children slowly dissolved into pools of amber syrup, bleeding across the factory floor. In a few short weeks both the artwork and building were gone. In the friction of monumentality and impermanence, Walker laid bare a multiplicity of meanings and ensured our last look at Domino was a hard one.

Miriam Kelly is a British conservation architect working in New York with a particular interest in the adaptive reuse of industrial sites.



Kara Walker's 'A Subtlety, or the Marvelous Sugar Baby' commissioned by Creative Time and staged inside Domino's sugar packing hall immediately prior to its demolition.

(Photo Credit: Miriam Kelly)



The Landmark designation only protected the buildings considered to be most important, architecturally impactful and with the greatest capacity for reuse.

Photo: Tod Seelie

Worldwide

Poland

A second life of the old Gliwice coal mine

Dr Anna Sulimowska-Ociepka, Faculty of Architecture, Silesian University of Technology

The Silesian Agglomeration, due to its history of industrial development, abounds in post-industrial objects of impressive architecture. Some of them have irretrievably disappeared, some have been given a new life and a new function, others are still waiting their turn. One of the sites whose beauty and development potential has been recognized is former Gliwice Coal Mine (Gleiwitzer Grube), which has recently been transformed into an Education and Business Centre.

The history of the mine goes back to 1901 when the decision was finally taken to build the mine. In subsequent years the mine shaft pithead buildings were built, and in the years 1912-1914 the most characteristic buildings were constructed, the miners' changing hall and the engine hall, according to the project by Emil and George Zillmann from Berlin. In the interwar period, due to the perfect quality of coal, the mine was extended by a coke plant, which worked until the 1990s.

Finally, in 2000, the mine was closed. As a result, more than 15 hectares of degraded land covered with slag heaps, railway lines, shafts and coke batteries appeared. This area, on the one hand, posed an ecological threat and, on the other hand, due to its location, was a great place for new investments. Five years after the closure of the mine and the acquisition of the land by the city, revitalisation of the land started.

The idea of the revitalisation of this area was both to create a new, resilient educational center, a business incubator, and to boost the development of innovative companies in the R&D and IT sectors. The concept of the revitalisation, developed by the MEXEM company, was based on preservation and adaptation of the miners' changing-hall and engine-hall for a new function, as well as on recultivation of the degraded surrounding area and creating both the recreational area and building lots for new objects forming a science and industry park.

The work lasted three years and ended in 2008. The project exceeded the cost of 13m€, the Phare 2003 endowment reaching 9.5m€.

The miners' changing-hall, along with an integrated water tower, has been converted into a local collage and education center. On both sides of the central entrance hall independent structures of lecture rooms and workshops, covering a total area of over 9000m² were provided. The main hall is located in the high roof space, exposing the original wooden roof truss and vault.

The adjacent engine-hall building has been transformed into an office building. Originally, the huge undivided interior was filled with an independent structure, housing a 9000m² office space, designed for rental, and a stiffening exterior walls structure. The highest tier is occupied by lecture rooms and the Museum of Art Casting, whose history is also related to Gliwice industry i.e. to the 1796 Royal Iron Foundry. The museum exhibits a fully interactive collection of nineteenth and twentieth century foundry art.

The area around the historic buildings has been decluttered and divided into building lots, on which the seats of innovative companies combining science, technology and industry are currently being built. 15h of a reclaimed brownfield has been transformed into a local "Silicon Valley", providing jobs for creative young people, at the same time being an architectural testing ground. Currently, the last stage of the liquidation of the mines associated slag heaps is taking place.

Within the six years of its existence the local college is educating students in eight different specialities, and the companies operating in the whole complex are employing some 1500 people. The area which ten years ago was utterly degraded, precious historical buildings close to crumbling, is now a landmark of the city, which, by promoting its industrial heritage, is trying to live up to the expectations of the contemporary world.



The Gliwice Coal Mine (Gleiwitzer Grube) miners' changing and engine halls resemble palaces rather than industrial buildings. Huge historical windows have been replaced with new ones and the original divisions preserved

Worldwide

United States

New US National Historical Parks: a significant expansion of federal support for industrial heritage

Dr Bode Morin, Site Administrator, Eckley Miners' Village

This past winter, the United States government took meaningful measures to strengthen its commitment to industrial heritage. In December, it continued financial support for eleven industrial national heritage areas facing the elimination of federal funding and, more significantly, added three new national historical parks with a focus on industrial and technological heritage to the list of over 400 historic and natural sites protected, preserved, and interpreted by the US National Park Service (NPS).

These three, part of seven new historical parks added in one of the largest expansions in decades, include: several sites in three states affiliated with the Manhattan Project that developed the atomic bomb during WWII; Coltsville, a historic district affiliated with the Colt Patent Fire Arms Manufacturing Company in Connecticut; and several sites along the Blackstone River in Massachusetts and Rhode Island associated with early US industrial and textile mill development. Then in February, the President declared the model town of Pullman, Illinois, created by railroad car industrialist George Pullman, a national monument.

The Manhattan Project was a secret US, British, and Canadian military program whose mission was to develop an atomic weapon. So named because initial research was conducted at Columbia University in New York City, the Manhattan Project grew to employ 130,000 people at over 30 sites including Los Alamos, New Mexico, Hanford, Washington, and Oak Ridge, Tennessee. While the work of project remains controversial, its scientific and technological developments led directly to the creation of the nuclear reactor, later nuclear weapons, propulsion for large ships and submarines, and medical applications. The Manhattan Project ran from 1942 to 1946 before being transferred to the civilian Atomic Energy Commission which continued research and development in atomic energy and nuclear sciences. The park will be comprised of sites in the three states listed above and jointly interpreted by the National Park Service and the US Department of Energy.

The Coltsville park will include manufacturing facilities, worker housing, and community buildings originally part of the Samuel Colt plant constructed in 1855 in Hartford, Connecticut. Samuel Colt developed, patented (1835), and ultimately perfected a revolver that dramatically changed hand-held weaponry by increasing the number of shots a handgun could fire before being reloaded. Once the gun was established, Colt developed a manufacturing system to meet growing public and private demand and a paternal system to provide social benefits to workers. Around his plant, Colt created an integrated community that included housing, a beer garden, social hall, library, and church. While not all completed at one time, many of the structures of Coltsville were later built by Elizabeth Colt, a noted philanthropist and art patron, who ran the company for 39 years after the death of her husband. The Colt Patent Firearms Manufacturing Company still exists today as the Colt Manufacturing Company.

The Blackstone River corridor stretches for 46 miles (74 km) and for over a century, developed and employed an organized system of water-powered mills. Known as the Rhode Island System of Manufacture the integrated landscapes included discrete, coordinated villages built around textile mills along the river and its tributaries. Starting with Slater Mill in the 1790s, several villages had sprung up along the Blackstone by the middle of the 19th century. The district was primarily devoted to cotton textile production using and innovating technologies Slater "borrowed" from his home country England and perfected in the US. During his time, Slater was simultaneously known as "The Father of the American Industrial Revolution" and "Slater the Traitor." The seven sites affiliated with this new park will focus on the advent of US industrialization.

These new parks were formally established with amendments to the National Defense Authorization Act (NDAA) of 2015, signed into law by President Obama on December 22, 2014. American laws are often amended with riders completely unrelated to the original intent of the law before they are sent to the president for signature. Many of the sites and structures included in the new parks are already designated national historic landmarks and are open to the public, it could still take up to ten years before they officially open as National Historical Parks administered by the NPS.



In the Blackstone River Valley National Heritage Corridor, the federally appointed Corridor Commission acts as a conduit for federal funding and as an umbrella for partnerships and collaborative projects

Worldwide

In addition to these, the NDAA also authorized the renewal of funding for fifteen US National Heritage Areas which are integrated public-private organizations intended to encourage broad preservation and regional development without the cost, planning, or staffing required of a full park. Of these fifteen, eleven have industrial interpretive themes including: Delaware & Lehigh National Heritage Corridor (PA), National Coal Heritage Area (WV), Rivers of Steel National Heritage Area (PA), Essex National Heritage Area (MA), Silos and Smokestacks National Heritage Area (IA), Ohio & Erie Canalway National Heritage Area (OH), Motor Cities National Heritage Area Partnership (MI), Lackawanna Heritage Valley & State Heritage Area (PA), Erie Canalway National Heritage Corridor (NY), Schuylkill River Valley National Heritage Area (PA), and John H. Chafee Blackstone River Valley National Heritage Corridor. (Even with the creation of the Blackstone River National Park which will only includes seven sites, there are many more organized locations outside the park boundaries that will continue to be coordinated as a heritage area.)

Further, the law also included an expansion of the Patterson Great Falls National Historical Park in New Jersey that interprets early water-power technology and mills outside of New York City and once included the first Samuel Colt factory. The expansion will incorporate Hinchcliff, an early 20th century concrete baseball stadium built for the industrial city.

Lastly, in February, President Obama declared Pullman, Illinois, a National Monument to be managed by the National Park Service. Pullman, a designated community of the city of Chicago, was founded as a model town in the 1880s by railroad car magnate and industrialist George Pullman. Similar to Coltsville, Pullman created a complete town offering housing, work, religious, and recreation opportunities for workers. In 1893, the economic depression resulted in cuts to workers wages, but not rents in Pullman leading to one of the largest labor actions in the country as railroad unions staged sympathy strikes in support of the workers that ultimately affected much of the US railroad industry and lead to federal recognition of the September Labor Day holiday. By the 1930s, the company had become the largest employer of African-Americans who worked mainly as porters, waiters, and maids in the company's cars. The 1937 contract was the first in the nation between an American company and an African-American led union and helped open greater economic opportunities for people of color.



President Barack Obama signs a proclamation establishing the Pullman National Monument in February, 2015. (Official White House Photo by Pete Souza)

Australia

Broken Hill added to National Heritage list

Dr Iain Stuart, JCIS Consultants

In January 2015 it was announced that the 103rd place to be added to Australia's National Heritage list would be the City of Broken Hill. The curtilage of the listing is the whole of the Local Government Area, the City of Broken Hill, which includes urban areas as well as the mining along what is called "the Line of Lode". The listing is considered the first of a town on the National Heritage list.

Broken Hill gets its name from the discovery of silver prospects in an outlying ridge of the Barriers Range in far western New South Wales. The prospector/boundary rider Charles Rasp from Mt Gipps pastoral station discovered mineralisation on the ridge known, locally as the Broken Hill. Exploration lead to the forming of the "Syndicate of Seven" who pegged much of the ridge later termed the Line of Lode and took out mining leases. Unlike many Australian mining prospects the lode proved to be phenomenally rich! In fact it is still being mined over 120 years later. Such was the success of mining that the influence of Broken Hill spread well beyond the limits of the Barrier Ranges to hydro-industrialisation in Tasmania, timber milling in the north coast of NSW, steel in Newcastle, smelting in Wales, stock exchanges in Melbourne and London and beneath Hill 60 in Belgium.

Around the mines a town grew. It was notorious in its early years for its ramshackle nature and poor living conditions. Trade union activity began in Broken Hill as early as 1889 and the first strike took place in 1892. The town was and to some extent still is a victim to Australia's federation. Although the closest capital city is Adelaide in South Australia, Broken Hill is in New South Wales whose capital is Sydney, even today a full day's drive away.

The mines, of course, were run from Melbourne, then Australia's financial centre. There were few votes and voices in Sydney when it came to providing services, like water, to Broken Hill. Mining in the central section of the Line of Lode ceased in the early 1970s but continued to the north and the south where the mines had amalgamated into Pasminco, which went broke in a spectacular fashion and sold its operations to Perilya, a small company who still run the mines.

With mining winding down in the 1990s, infrastructure began to be abandoned and maintenance work slowed. The City of Broken Hill itself was struggling economically and community pride was at an all-time low. Much of the commercial building stock was in poor condition, corrugated-iron houses re-clad in fake weatherboard to overcome the stigma associated with these modest buildings. Broken Hill was seen as a depressed remote city with little hope of a future after the mining.

Broken Hill Council decided to attempt a revitalisation process based on tourism. The remnant structures would not be seen as shameful remnants of an industrial past but as key assets for the town on which a tourist initiative could be anchored.

Worldwide



Looking North from the Junction Mine to the remains of the three main shafts at the North Broken Hill mine, now part of the National Heritage Listing for Broken Hill.

With a grant from the NSW Heritage Council, Broken Hill Council established a Heritage Advisory Service in 1986. The service provided free professional advice from a qualified Heritage Adviser who visited Broken Hill on a monthly basis. The aim of the service was to enthuse the public to preserve significant aspects of the past in Broken Hill. The Heritage Adviser for most of this time was Elizabeth Vines who provided the necessary expertise, enthusiasm and hard work that built the community momentum for protection of Broken Hill's heritage.

In 2005, the Council began to consider National Heritage listing. At the same time Perilya Broken Hill began to revise its initial plans and to plan for a longer term continuation of mining but also to abandon its redundant facilities. The joint 2010 ICOMOS/TICCIH Conference which was held at Broken Hill helped focus attention on the full range of heritage, from restored buildings, mining sites to farming sites and beautiful landscapes.

Progress on the Nomination was slow. One compounding factor was the need to establish an appropriate management regime for Perilya to continue operations within the heritage listed area. This was particularly important due to the complex heritage management regimes under Australia's federal system.

After listing there is still a considerable challenge protecting the heritage of Broken Hill, and in particular its industrial heritage. Traditional techniques of adaptive reuse are difficult to apply in such an economically isolated area where there are very limited alternative uses for mining infrastructure. On the other hand Broken Hill has a tradition of innovation and community involvement and this may result in new approaches to the management of heritage issues.

Australia

Kristal Buckley OAM recently announced she was stepping down as International Vice-President of ICOMOS. In recognition of the help and encouragement she has given TICCIH she was presented with the appreciation of the TICCIH Board and a small gift at a lunch in Melbourne. Krystal served as an International Vice-President of ICOMOS since 2005, helping TICCIH work with ICOMOS on the recent TICCIH – ICOMOS agreement and before that on the Dublin Principles. With her are TICCIH Secretary Dr Stephen Hughes and Board member Dr Iain Stuart (right) along with TICCIH in Oz Chair Helen Lardner (left). Kristal spoke about the prospects of co-operation between TICCIH and ICOMOS and how much she appreciated working with TICCIH.



Worldwide

Industrial archaeology in Australia

Dr. Stephen Hughes, TICCIIH Secretary

In Australia, ICOMOS and TICCIIH have developed an exemplary working relationship, one demonstrated by the joint conference held at the mining town of Broken Hill in 2010 [see above]. Conservation practice on cultural sites in Australia led to the influential Charter for the Conservation of Places of Cultural Significance (aka the Burra Charter) being formulated in 1979 (revised 1999). Also exemplary are the on-line state heritage site databases which include well-researched statements of significance: a feature essential for international comparisons but often absent in other countries.

Mining is the pre-eminent form of industrial archaeology in Australia. Prospective mining has funded the study of the 30,000 years old ochre mines of the Weld Range Hills of mid Western

Australia. In the Mount William area of south eastern Australia mines produced green stone axes that were traded for thousands of miles across inland Australia. Two trends in Australia heritage have been demonstrated here. In 1997 the latter remains were put under the management of the Wurundjeri indigenous people and the site has been inscribed on the relatively recent federal government's Australian National Heritage List.

The Gold Rushes were an international phenomenon starting on a large-scale in California during 1848. The Australian gold rushes followed the return of unsuccessful diggers from California and commenced with discoveries at Ophir in New South Wales in 1851 and the Victorian Goldfields of Mount Alexandria, Castlemaine and Ballarat. There are 18 conserved heritage sites in the extensive Castlemaine Diggings National Park with conservation and interpretation boards to an exemplary high standard.



Cornish engine house at the Burra copper mine in South Australia, one of the few partially restored for the purposes of cultural tourism outside Cornwall.

Photo: Stephen Hughes

The young state of South Australia was saved from bankruptcy by an influx of Cornish hard-rock miners and Welsh copper smelters. In 1844 copper-ore was discovered at Kapunda and at Burra in the following year. The conservation and interpretation at both towns is impressive. At Burra the large opencast and extensive large smelting works ruins are laid out for public view. Much of the historic township at Burra is conserved and interpreted by the Australian National Trust. Remains include the cave dwellings excavated in the creek-side clays by Cornish miners and the fine re-roofed Cornish Engine-house at Burra (one of the few conserved outside Cornwall). Burra is on the Tentative World Heritage List for Australia and may become part of the Cornish Mining serial list of sites across the world.

In New South Wales the silver-lead-zinc lode at the Outback Town of Broken Hill was mined from the 1880s and the great richness of the ore gave rise to the world's largest mining company BHP-Billiton (Broken Hill Proprietary-Billiton) and the town and mines have just been inscribed on the Federal Australian National Heritage List. Deep Reef gold mining in later nineteenth century central Victoria gave rise to the rich 'boom period' architecture of the gold mining cities of Ballarat and Bendigo with tall Italianate steeples capping City Halls, Post Offices, School of Mines and railway stations and dominating distinctive townscapes with frontages of tiered iron balconies cast in the local mining foundries.

Worldwide

Sometimes partial replica townships such as Sovereign Hill at Ballarat rather detract from authentic museum mines and townships of which there are many well-presented examples.

South-east of Melbourne in Korumburra in Gippsland is Coal Creek Heritage Village with original re-erected buildings from between the 1870s and the 1920s. Coal of the world's largest coal deposits was discovered in the Latrobe Valley in the Gippsland and the Victorian Coalmining Museum in Gippsland, an adit or tunnel mine that operated from 1909 to 1968 (17 million tonnes of coal), is now the only underground colliery museum in the southern hemisphere.

Gold gave rise to the 'Marvellous Melbourne' of the 1880s: the port and distribution centre for the goldfields and the largest city of the southern hemisphere of its time. The cable tramway network of the 1890s was the second largest in the world and the present electric tramway system is still the largest. Vintage trams remain in use on the City Loop and an extensive collection is maintained by volunteers at the one half of the Hawthorn Tram Depot that was spared from redevelopment with Melbourne's often destructive high-rise boom. Bendigo and Ballarat retain single tourist tram-lines conserved and maintained by volunteers. The dense urban structure of Melbourne early on produced the need for a large sewage works which survives as a museum attached to a popular hi-tech exploration centre.

It has a range of steam pumping-engines illustrating the contest between sourcing steam machinery from local manufacturers contrasted with the desire to acquire the latest and most efficient steam machinery from the colonial homeland (Britain).

Volunteers are much in evidence in conserving large examples of steam and other machinery. Long masonry railway bridges, high steel viaducts and covered stations were initially built to the highest European developed-country standards. No less than 36 now-derelict railway lines in Victoria alone have been converted into very popular long-distance cycle-routes, a continued economic use which helps sustain their infrastructure. Monuments include high timber trestles, an indication that appropriate technology later arrived. In Victoria, the more remote hilly forest regions were reached by networks of narrow-gauge railways, based on earlier Welsh and Indian Himalayan practice and built in the early twentieth century. The mix of British and American stock (and local copies) on these lines was typical of Australian practice. One of these lines, the 25km Puffly Billy Railway near Melbourne, was the first of many railways re-opened by volunteers in 1962, among the earliest lines internationally to be rescued. It has now proved so popular with Australian and other Asian visitors that it has reached capacity, having quadrupled its passenger numbers since preservation. It gives an indication of the continuing success of the high standard of industrial heritage cultural tourism achieved in Australia.

Spain

The Almadén mining park

Javier Carrasco, Industrial Activities Manager, Minas de Almadén y Arrayanes SA

Almadén is a small Spanish town 300km south of Madrid from where about one third of all the mercury ever produced on earth was extracted. Mining activities in Almadén went on continuously for more than 20 centuries. Yet in 2003, this history came to an end as all mining activity was terminated as a consequence of impending restrictive measures in EU environmental policy.

In order to preserve the vast industrial heritage left from two millennia of exploitation, the mining-metallurgic installations were converted into a socio-cultural space for public visits called the Mining Park of Almadén in which visitors enjoy the magnificent scientific, industrial and technological heritage in one of the oldest mining sites of the world. The Mining Park is a vast architectural project which manages the totality of the valuable heritage, as well as industrial and real estate elements, for future use. This project has been promoted by MAYASA, the state-owned company established to run the mines, and was partially financed by the European Regional Development Fund (ERDF).

The Mining Park of Almadén comprises the most important Spanish Heritage properties included in the UNESCO World Heritage List by the name Heritage of Mercury: the historic mining internal area with the underground elements, all of which are of a high historic value, as they are the main witnesses to the mine's evolution over the centuries, in which it is possible to observe in particular vertical stratification, as the entranceways to El Pozo (16th century) and El Castillo (18th century) mines, the forced-labour tunnel (18th century).

Buildings and installations that have been produced through the stratification and evolution of the technical procedures in the mines, such as the San Aquilino shaft headframe, (1908) and machinery building (1924); San Teodoro shaft headframe (1962); Mercury Store (today the Mercury Museum), San Joaquín shaft headframe, Pacific furnaces (1955), and other buildings and installations from the 20th century.

The Bustamante furnaces (1720) is similar to that built in 1646 by Juan Alonso de Bustamante, using as a reference the type invented in 1633 by Lope Saavedra Barba for the mercury mine at Huancavelica (Peru).

Almadén mining heritage doesn't finish there, the historic town center contains several monuments as well as domestic constructions of historic and typological value. It includes the Mining Academy building (1785) now in full restoration process. It is the third oldest School of Mines in the world, a true palace for engineers.

Worldwide



Almadén has developed other tourist resources available in the area: hunting, fishing, walking and eating, and is now encouraging birdwatching near the estate of Dehesa de Castilseras.

We cannot finish the description of the World Heritage in Almadén without speaking about the Saint Raphael Royal Miners' Hospital (1773) and the Bullring (1757). The Saint Raphael Royal Miners' Hospital is the outstanding civil building in Almadén, now adapted as a museum and the archives of the mines at Almadén, used the same building technique as was used inside of the mines, a symbiotic association between mining and architectural techniques. The bullring is the second oldest in Spain, a hexagonal ground plan including 24 worker's homes and now a 4 star hotel.

Needless to say, the mine was the cornerstone enterprise of Almadén, a town of about 13,000 people in 1940. The impact of the closure affected more than 2,000 full time employees and caused the population of Almadén to drop dramatically to 5,893 today. The idea was conceived that the mines could be turned into a tourist attraction, providing a much needed boost for new development.

The restoration efforts have focussed on the cultural inheritance of mining-industrial elements, including the geological richness of the existing deposits, the evolution of the different mining and metallurgical processes through history, the importance of mercury in the historical development of society and the global impact of the Almadén exploitation of mercury.

The Park has become one of the most important cultural destinations in Castilla La Mancha since its inclusion in the World Heritage List. From 2000 to 2014, the number of visitors to Almadén municipality annually increased from 1200 to 20,000. In recognition, the Park was finalist for the RegioStars Awards of 2010 from the European Union.

The vast wealth of the Almadén deposit meant that the Almadén Mine was exploitation without interrupted for thousands of years, up until the present. The great cultural value of the mine and its town, its authenticity and integrity, put us on the World Heritage List. The mine will become the only mine in the world that will never be closed.



Lead mines of Bellmunt del Priorat (Catalonia)

Eusebi Casanelles, Vicepresident del Patronat i del Museu de la Colonia Vidal

The lead mines in the county of Priorat are among the oldest in the Mediterranean, remaining active until the end of the 20th century.

There are indications that mining in the region began more than 2,000 years ago, when minerals of only the upper parts were extracted. However, the oldest evidence for mining dates back to the 7th century AC.

Two ovens and several mining villages of this period have been excavated. The inhabitants traded the different metals they extracted, principally silver and lead but at that times there was cooper too, with the Phoenicians, the most important traders of the Mediterranean before the Greeks and Romans.

One of the products the prehistoric people got in return was wine, which was not produced in this part of Europe. Many containers used to transport wine from different parts of the Mediterranean, such as Etruria, have been found in villages of the Priorat.

Worldwide

There is also evidence of Roman mining. Twentieth century mines cut through Roman galleries and iron spikes, ceramics and oil lamps have been found. There are historians who believe that the *plumbum nigrum oleastrens* referred to by Pliny as existing in Iberia was in this area. In the 14th century, the king of Catalonia brought in miners from Sardinia, in those years under his jurisdiction and who had extensive experience in this type of mine. The Sardinians provided technical innovations such as wheels and winches to raise minerals and drain the building galleries.

The modern history of the mines began in 1873 when a farmer digging a well found a large lump of galena. A concession was given to a Belgian company and later the mines become the property of the Catalan company *Minas del Priorato SA*, which manufactured lead paint. In 1921 electricity replaced steam engines and compressors were installed in 1940 after the Spanish Civil War. The period of most splendor was from 1920 until 1960 after which production diminished, and the mines closed in 1972.

In total there were twenty open shafts and more than 50 km of galleries. The most widespread operating system was to sink shafts which were joined through a network of galleries, some of them 14 km in length.

Buildings to convert ore into lead ingots were constructed at the surface and the *Mina Eugenia* became the main centre of lead production. Ore from other mines was concentrated here, where it was crushed and washed to remove the stone from the galena which was melted to remove the sulphur (galena is a lead sulphate).

In 20th century the high mining activity attracted lead miners from Jaen in Andalusia, the most important centre of lead production in Spain. An extension of the ancient village was built on top of the hill to accommodate them. The white painted houses of the new neighborhood contrast with the traditional brown local houses of stone.

One of the most interesting buildings is *La casa de la Mina*, built in 1905 in the Art Nouveau style and surrounded by gardens, with offices, laboratories and rooms for the senior staff.

The *Museu de les Mines de Bellmunt* opened to the public in 2002 after restoring a 700 m stretch of the oldest gallery of the *Mina Eugenia*, 35 m underground. The Museum explains the history of the site from ancient times, the work inside the mine, the foundry and the social life in the village. Most of the production buildings have been restored and interpreted in recent years. The visit offers an interesting view of the work and visitors can explore the miners' village with the *economat*, schools and other services for the miners. For industrial archeologists a tour of the surrounding area offers remains of other industrial mines and the ruins too of the prehistoric mining village of *Puig Roig* (9th to 7th centuries BC), the best conserved village of this period in Catalonia, which was excavated, restored and interpreted some years ago.

It is important to remember, too, that the mine is within the *DO Priorat* wine demarcation. Although the region didn't know how to produce wine in Phoenician times, today it is one of the most appreciated of Spanish wines.

An interpreted section of the *Museu de les Mines de Bellmunt* is in the most important mine, the *Mina Eugenia*. There were 20 levels of which the lower 16 are today flooded.

Photo: *turismepriorat*



Worldwide

UK

English Heritage divides into two

The British government has revised the management of the historic environment, including industrial heritage, in England (the other parts of the United Kingdom have separate systems). On 1 April the Historic Buildings and Monuments Commission for England (HBMCE), which was established in 1983 and known as English Heritage, was separated into two organisations. The Government-funded public body that protects and champions England's historic environment will be called Historic England; the other is the English Heritage Trust, to be known as English Heritage, and will manage the 420 historic properties in the care of the state including, for example, Stonehenge, Dover Castle and the Iron Bridge.

Historic England will continue as the Government's principal statutory adviser on the historic environment of England, with responsibility for all archaeological and historic building legislation, research, publishing, advice to Government, grants for archaeological excavation and historic buildings, and maintenance of the National Monuments Record.

It continues to be governed by a Board of Commissioners, appointed by the Secretary of State for Culture, Media and Sport, with a budget for 2015/16 of £88.5 million.

Duncan Wilson, previously Chief Executive of the Greenwich Foundation, has taken over as Chief Executive.

The current Industrial Archaeology Advisory Panel will continue as part of Historic England's management structure.

The new **English Heritage Trust** has taken the name, the brand and logo together with the properties staff of the former English Heritage. Transitional money has been provided to cover the cost of the maintenance backlog and support running costs until it can become self-supporting and free of direct funding by the taxpayer. This will largely be based on the growth of English Heritage membership, now standing at nearly a million. Predicted growth of membership income, already the largest proportion of revenue, should bring this in about eight years. The properties themselves will continue to be in the ownership of the state, their management being the responsibility of the new English Heritage trustees.

The Chief Executive of the new English Heritage is Kate Mavor, previously Chief Executive of the National Trust for Scotland.

The proposals have the general support of the wider heritage sector. The model from which the new arrangements derive is the Canal and River Trust which took over the assets of the old British Waterways Board. The new EH is a 'management trust' and the Secretary of State continues to hold the assets.

Metal Links Project: archaeology interpretation develops cultural tourism

Dr. Stephen Hughes (Project Leader), Royal Commission on the Ancient & Historical Monuments of Wales (& TICCIH Secretary) and Geraldine Delaney (Lead Partner Project Manager)

New and innovative techniques were exchanged between Irish and Welsh (UK) partners in this joint international valorisation of archaeological and geological resources in order to regenerate former mining communities (see <https://www.facebook.com/MetalLinksProject> & <https://www.youtube.com/user/MetalLinksProject>). Laser scanning of both underground copper mines in Ireland and surface remains of lead mines in Wales can be viewed as virtual tours on project partners' online resources and websites.

A laser scan of the now-rapidly deteriorating remains of the processing floors of the Temple Lead Mine in mid-Wales, initiated by the Royal Commission on the Ancient & Historical Monuments of Wales helped produce a virtual tour: <http://www.derij.co.uk/images/panos/tm/virtualtour.html>. A further short fly-through film <http://www.youtube.com/watch?v=9yjX5CQpXkU> is based on the remains of the huge waterwheel pit that powered the ore-dressing machinery.

An animated reconstruction film based on a similar laser-scan and detailed survey of the shell of the 1899 hydro-electric Pont Ceunant, built by the Belgian Société Anonyme Metallurgique of Liege to the designs of the Italian engineer Bernardino Nogara in an attempt to reinvigorate production in the huge Frongôch Lead Mine in mid Wales, is posted on the Royal Commission Wales site on YouTube (<https://www.youtube.com/user/RCAHMWales>). Details and photographs of all the Welsh Mine Sites are available at www.coflein.gov.uk. For a working animation of a 19th century lead mine is at Ystrad Einion. <http://www.youtube.com/watch?v=IrCdiPen6A0>.

The project was also able to inform and add value to the Atlanterra Green Mines project (as reported in the previous TICCIH Bulletin) offering insights into recording and survey that showcase the copper mines of the Copper Coast Geo-park Project Partners on the southern Irish Coast: <http://www.coppercoast-geopark.com/geology/tankardstown-3d-tours.html> and <https://www.youtube.com/watch?v=f1wlsBfbNls>. Six short films of the mining heritage show the converted mining settlement church that is now the **Geo-park visitor centre**.

A series of cores from peat-bogs in the mining areas of both Ireland and Wales was carried out and samples subjected to geo-chemical as well as paleo-environmental analysis to ascertain how far back non-ferrous mining and smelting went in former mining areas. The most significant discovery was that lead mining in the proximity of the early Medieval Abbey at Glendalough date as far back as the 11th century.

Worldwide

The results were published in the *Journal of the Mining Heritage Trust of Ireland* in 2013. The same journal published Sharron Schwartz's and Martin Critchley's archaeological and historical surveys of the remains of the silver-lead mines at Glendalough & Glendasan.

Dr Schwartz has developed a database of the numerous Cornish Hardrock Mining migrants and specialists, initially for Latin America

The project further sought to identify the mining workforce, its two Community Archaeologists training volunteers in both Wales and Ireland to record both the position and inscriptions on mining settlement tombs and gravestones using standard database forms. The burial grounds included Ysbty Cynfyn (mid Wales). Amlwch (north-west Wales) – with the remains of the

world's most productive copper mine at the end of the 18th century (recorded with GeoMôn - Anglesey Geo-park) and Faugheen in County Waterford – results published as 'Faugheen Cemetery 1723-2012 Monument Survey' by the Copper Coast Geopark, copies already issued to descendants in the US).

A strong feature of the project sought to reconnect present communities with their mining heritage and Amlwch School activity. The Metal Links Project has been an international exemplar for developing and promoting joint socially inclusive opportunities for the sustainable regeneration of former metal-mining communities through tourism. It sought to promote and encourage new cultural and educational links including exchanges and interaction based on mining, archaeology, geology and cultural heritage.

Sweden

Filmed photographs reveal the changing industrial society

Bengt Norling

The importance of photographs as a source to interpret the industrial heritage is stressed in Jan af Geijerstam's chapter 'Photography and image resources' in TICCIE's *Industrial Heritage Re-Tooled*.

This assumption is to some extent supported by the film *Tiden är en dröm, Del 2* (The Time is a Dream, Part 2) which had its opening performance in Stockholm at the end of last year. The film is fully based on black and white pictures from the time when pioneer photographers for the first time went outside their studios to depict their society. The drama of the composed photographs gives an astonishing illustration of the development of the industrial society in Sweden.



Construction of the railway bridge over the Vindel river in 1892.

Photo: The Swedish Railway Museum.

Worldwide



Match factory workers at Vulcan Tidaholm in the 1890's.

Photo: Tidaholm's Museum

The director, Jan Lindqvist, is internationally well reputed for his development of documentary from the 1960's to the 1970's, for instance with films following Mod youths in Stockholm, and the prize-winning *Tupamaros* following the tracks of Che Guevara in Bolivia.

During the making of *Agripino*, the documentary of a Peruvian farmer who struggles to get his land back, Lindqvist was inspired to think over parallels to the history in Sweden. Back in the native country, and after a preliminary research, he received a grant to make a sample film, which was presented for the Swedish Film Institute, embracing the period 1859-1982 over five long films, and was guaranteed resources.

The use of photographs differs somewhat from what is emphasized by af Geijerstam, who advocates their use to support historians' theses. In Lindqvist's films it is the photographs independently that build the argument.

The photographs were categorized and sorted temporally and spatially. Structured like this, the ability of the photographs to relate appears in a quite different way.

The collected mass of photographs changes: certain years in some regions develop more than others, which is shown in the different quantities of photographs. This is clear in the expansion in the wooden industry in northern Sweden in the 1870's, when the number of photographs grew considerable from almost nothing.

At times the total mass expands and in other years it diminishes, reflecting the effects of the market: during the depression of the 1880's the mass of photographs diminishes, only to expand under the boom of the 1890's.

The photographs were compiled until a narrative appeared. Then the story was checked against other sources and a deeper research was made to bridge over the missing parts.

The project, however, suffered two major changes: the production policies of the Swedish Film Institute and the shift in the technology of film making. The project was therefore so seriously delayed (Part 1 and 2 were already nearly finished in 1989) that parts 3-5 may never be finished, which is a pity since the filmed cycle of the rise and fall of the industrial society then will be incomplete.

TICCIH Congress XIV LILLE-REGION 2015

From disaster to reconversion: Dollfus-Mieg and Company at Mulhouse (Haut-Rhin), France

Preparing for TICCIH's XVI Congress in Lille, the Bulletin shows one of the great textile towns of Europe refashioning its industrial assets to mount Openparc, an ambitious cultural initiative.

Geneviève Dufresne, Vice-president of CILAC, TICCIH French Representative

English translation by Paul Smith

"On 4 June 1812, Daniel Dollfus-Mieg was present at a rather extraordinary sale. For the sum of 502,000 francs, he acquired the Ronchamp coal mine. The industrialist needed coal in order to fuel the very first steam engine in Alsace, constructed by Peel & Williams at Manchester and installed in his brand new mill at Mulhouse. He had just built the largest spinning mill on the continent of Europe!"

The building of this monster mill survived for more than 200 years, but without any plans for its re-use once its industrial function had ceased. Two mysterious fires damaged the empty building in 2008 and 2010. In January 2014, in spite of the intense mobilisation of defenders of heritage, the bulldozers finally came into action. The disappearance of this jewel of Mulhouse's industrial heritage was a major setback.

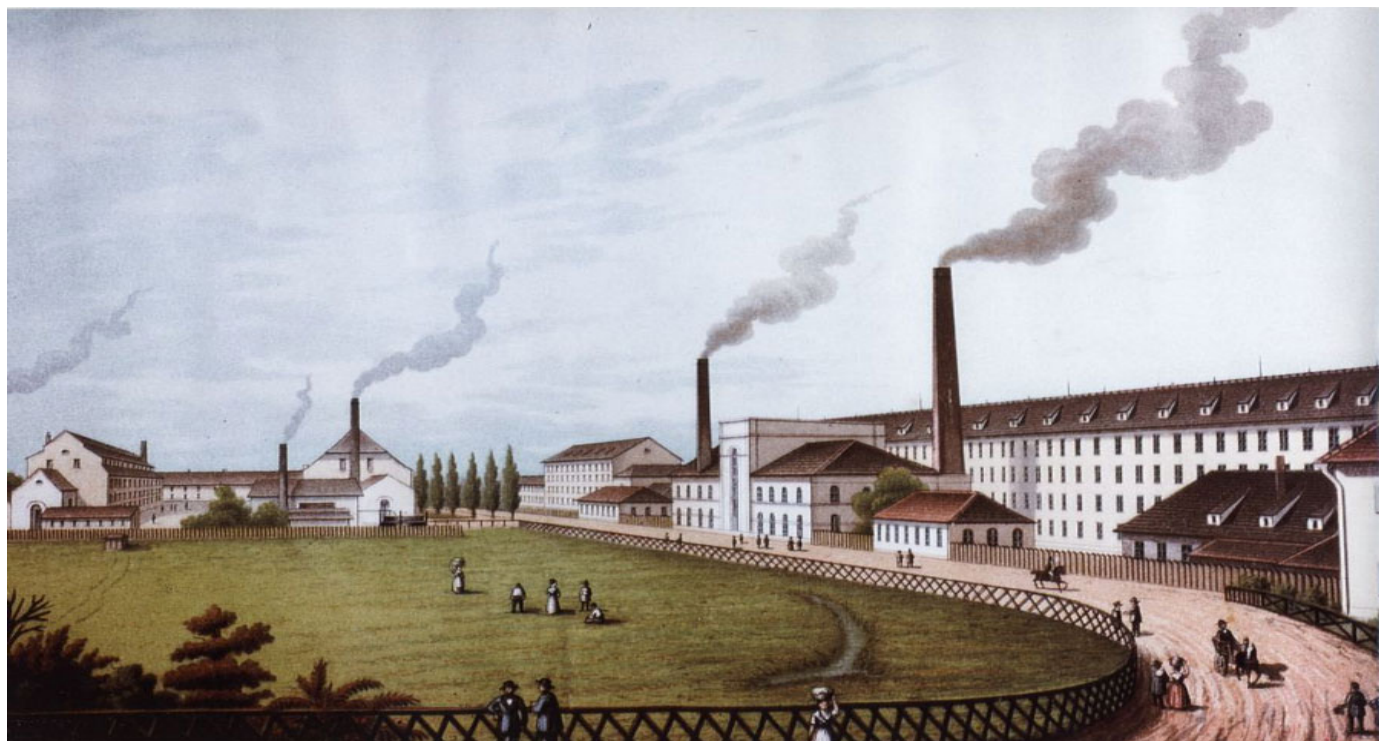
The D.M.C. initials have been familiar throughout the world for generations, marking the yarn they use for sewing and embroidery. Most of these consumers had no idea where the colourful

reels and hanks came from.

Today, on the huge DMC site, buildings covering a few hectares are still devoted to the production of yarn, which is exported throughout the world. The other buildings, in a state of abandon, have recently become the object of an ambitious re-use project.

The history starts in 1746 when Samuel Koechlin, Jean-Jacques Schmalzer and Jean-Henri Dollfus founded a calico-printing works at Mulhouse, which then had the status of a small independent republic, associated with the Swiss cantons and only became French in 1798. Towards the end of the eighteenth century, Daniel Dollfus took over the direction and in 1800, after his marriage to Anne-Marie Mieg, the firm became Dollfus-Mieg and Company, or D.M.C. With about 700 workers, it was the second most important firm specialized in printing on textiles in the Haut-Rhin department. The DMC firm had about 150 printing tables (500 in 1841). To begin with, printing was carried out by hand, but from 1807 a printing machine using copper cylinders was installed. DMC subsequently diversified into cotton spinning and weaving and, from 1812, became an integrated and mechanised business, bringing together, on the same site, spinning, weaving bleaching and printing operations.

In 1850, one of the descendants of the founding family was sent to Leeds for his studies and became familiar with the invention of the chemist John Mercer known as mercerisation, a process which involves immersing the cotton thread in caustic soda in order to give it better resistance, durability and a silky appearance. DMC was thereby able to develop its leading product, the "Mouliné", made of mercerized Egyptian cotton, still today the embroidery thread which is most used throughout the world, particularly appreciated for its broad range of colours.



The 1812 spinning mill: to the left, the earliest mill, to the right the giant mill of 1812, with the engine house in the foreground.

Photo: Musée historique

TICCIH Congress XIV LILLE-REGION 2015

From about 1880, DMC concentrated on the production of sewing and embroidery yarn, becoming the world leader in this sector. But after the 1970s oil crises and Asian competition the whole of the European textile sector became fragile and DMC suffered an almost total collapse.

In 2008 the firm went into receivership. The DMC SA branch survived, and continued producing embroidery and sewing thread on its historic site and has recovered some of its former prosperity and is now a multinational firm which exports its products to 86 different countries, mainly for domestic embroiderers. The Mulhouse factory is highly modernized and, with only 200 workers, produces a million skeins a day, in 573 different colours. The firm has 40,000 retail outlets worldwide.

Despite the loss of the 1812 monster mill, DMC is one of the last major Mulhouse firms to have retained its built heritage. What remains of DMC's heritage?

At the end of the 1980s, DMC's steam engine, used in a power station on the site, was saved from destruction by a handful of the firm's workers. Known as "La Grande Machine" it was re-erected in 1983 in the main hall of the EDF (Electricité de France) museum, Electropolis. The machine was re-assembled piece by piece in a complex logistical operation with 20,000 man-hours of work.

This giant steam engine was built in 1901 and used to 1947. It comprises a Brown Boveri alternator, constructed at Mannheim in Germany, driven by a Sulzer steam engine, built at Winterthur in Switzerland. In its museum context, two smaller electric motors drive the machine at 21 rpm, four times slower than in 1901. Spectacularly lit, this machine is one of the major attractions of the Mulhouse industrial heritage.

The DMC-Openparc project

On the remainder of the site Openparc is underway, an ambitious cultural initiative backed by a public/private partnership. In 2013, the association called Motoco ("More to come") created a "Laboratory for societal design", an international incubator of artists and ideas. This laboratory is based on the concepts developed by Mischa Schaub, director and professor at the Basel Institute for Postindustrial Design. Martin Jann, former director of the Basel IBA (Internationale Bauausstellung) was commissioned by the city of Mulhouse to accompany the development of the Openparc project and to develop schemes to create jobs until 2020. The aim is not necessarily to "fill" the DMC site at any price, but to create progressively a cluster based on the creative economy. A commission for a definition of the project has been signed with the inevitable agency of Reichen & Robert & Associates to present the project at the 2020 international architecture exhibition at Basel, aiming to obtain the international IBA label for the DMC project.



General view of the DMC site in 1945.

Photo: Musée historique

TICCIH Congress XIV LILLE-REGION 2015

Openparc plans to create four associations.

- Openhost will be a “zero-star” hotel designed for artists and young people, housed in the former administrative building of the site and in the refectory building.
- Playerpiano will be the showcase interface designed for the general public with demonstrations, educational workshops, resources, exhibitions, lectures and so on.
- Openfab represents the entrepreneurial aspect of the project, based on the production of prototypes or small series using digital and artisanal techniques.
- Openstudio will be the home to an incubator of start-ups in the field of digital media and audio-visual production.

The organisers are hoping for participative financing and the support of numerous partners. Several local and foreign institutions have already decided to participate: the University of Haute-Alsace, the Hochschule of Offenburg, the University of Stuttgart, the ENSAD of Paris, HyperWerk at Basel, the Kingston University of London, etc.

The DMC workers’ settlement, a large-scale workers’ housing estate
After the creation of the Société Mulhousienne des Cités Ouvrières (SOMCO) and the realisation of the first workers’ settlement from 1853, this settlement rapidly emerged as one of the leading initiatives of its type in Europe. The Cité was created at the initiative of the liberal industrialist Jean Dollfus (1800-1887), associated with other protestant employers. In 1855, it comprised 200 single-family housing units covering a total of 8 hectares. With a total of almost 10,000 inhabitants, it represents a demographic and sociological phenomenon of considerable importance. This garden-city type designed by Émile Muller between 1853 and 1897 served as a model throughout Europe. The housing units come in three types: houses in continuous bands, back-to-back with a garden in front; houses in bands between a garden and a courtyard; and square houses divided into four separate dwellings with individual entrances and gardens (the famous “carré mulhousien”). This Muhouse workers’ settlement is still inhabited but affected by the economic crisis and unemployment. It is an exceptional example of nineteenth-century workers’ housing and deserves better policies for its preservation and valorisation, as an irreplaceable vestige of our industrial history.



Multimedia show around the conserved Grande Machine.

Photo: ATOLL

Industrial Museums



Ingrid Telsemeyer, Senior Curator, Nightingale coal mine museum, Westfälisches Landesmuseum für Industriekultur (LWL)

The Nightingale coal mine is one of the eight former industrial sites which constitute the LWL-Industriemuseum, Westfälisches Landesmuseum für Industriekultur (Westphalian State Museum of Industrial Heritage), an umbrella or network museum which from 1979 has told the story of the Ruhrgebiet region in western Germany. The role which industrial heritage and in particular on-site museums have played in re-imagining this region, weighted with some of the heaviest of heavy industry up until the collapse of deep coal mining and steelmaking from the 1970s, is famous round the world.

Ingrid Telsemeyer is the senior curator responsible for the Nightingale Colliery which opened as a museum in 2003. As the project manager she did the scientific research and developed the concept for the exhibitions with a small team.

The Nightingale mine in Witten, on the southern bank of the Ruhr river, is known as “the cradle” of the region’s mining industry. It started producing coal (Steinkohle) from 1714, miners digging down from the surface in galleries which followed the coal seams. At the beginning of the 19th century the Nightingale colliery was the first in the Hardensteiner Revier coal-field to sink deeper shafts, Neptun (1832) and Hercules (1839), which went down 450 metres. Title passed from the aristocratic owners, the von Elverfeldt family, to Dutch entrepreneurs who improved the technical conditions, and Nightingale mine became one of the most powerful and profitable collieries of the region. More than 500 miners worked here in 1855. But by the end of the century bigger collieries were opening in the north of the Ruhr producing coal more cheaply which led to the end of the Nightingale mine in 1892.

In the overall story of the LWL-Industriemuseum, Nightingale colliery stands for the early industrial period. In fact the museum shows how coal is just one part of the landscape which has been exploited for its economic worth. The exhibitions look also at associated brick clay production and sandstone quarries, so ‘landscape museum’ might be a good way to imagine Nightingale and there are many geotopes, exposures and other signs of the ‘underground landscape’ which outcrop on the site.



The exhibition site with a 1:1 reconstruction of a Ruhr-barge which explains the coal transport system on the Ruhr in the 19th century, the Hoffmann kiln in the background.

© LWL-Industriemuseum/ A.Hudemann M.Holtappels

Industrial Museums

While the priorities are the history of industrial development and mining in the Ruhr valley, a new exhibition in Witten, in a former quarry on the museums' terrain, will tell nearly everything about the Ruhr Sandstone, the work in the quarries and more.

Ingrid qualified as a teacher, and following jobs in adult education, broadcasting and the Westfalian Museumsamt (Archive). 'The image of the Ruhr area has changed in the last decades. People living here love the various cultural offers and their industrial heritage. They appreciate that the history of industrialisation is incorporated in museum exhibitions as the cultural heritage of the region, that this heritage was at the centre of the international building exhibition in the Ruhr district, that they can explore it on touristic routes like ERIH or on biking paths or historic trains which also pass along our the Nightingale colliery in the summertime, and because the area was European Capital of Culture in 2010'.

The mine buildings are typical for the southern Ruhr valley and belong to the first phase of the industrialisation. One of the oldest hauling engines (1887) in the region can be seen in operation in the engine house. The engine/machine house, the smith's and carpenter's workshops, the 47,5 m high chimney of the boilerhouse, and parts of the Hercules shaft and shafthouse are maintained until today.

Brickworks and an industrial quarry took over from coal mining from 1897 up until to 1963, extracting the clay slate (Schiefer-ton) and sandstone. The new plant reused some of the mining buildings and built a double Hoffmann kiln over the shaft and the foundations of the boilerhouses. Now it is part of the monument, showing how this industrial place developed over the years and how bricks were being made here. Around the Hercules shaft the exhibition *Der Weg in die Tiefe – In the Depths* deals with the technology and the hard working conditions in the 19th century mine. 'Outside we tell the story of mining in little pits after the Second World War and the river transport system on ruhr-barges. Next will be a new exhibition in the former sandstone quarry about the production of this stone.'

'I noticed that many of our visitors enjoy the multimedia introduction, with pictures and music of the time in a rebuilt stagecoach before they discover the museum. And most of all they love the outdoor qualities of this museums site. There are playgrounds (children like the water playground "little Ruhr") and picnic places as well as a coffee shop in a former restaurant railcar. The environment alongside the river Ruhr has great possibilities for walking and cycling.'

Visitors can see in the quarries the sequence of the typical layers of the carboniferous strata: coal, clay slate and sandstone. In the basement below the former workshops is a typical ecological situation of the Carboniferous with the remains of trees hardened into stone together with the coal seam Finefrau.

The stone from the quarry was used as a building stone all around the Ruhr area for public buildings, bridges and walls and in the Nightingale colliery itself. On the historic site and in its monuments, via exhibitions, multimedia and guided tours, visitors can discover the multilayered development of this special industrial landscape beside the river Ruhr up to the present.

'We try to keep the Westfälisches Landesmuseum für Industriekultur a working museum, with hauling engines, running railways, (steam) ships and a lot of old machinery in working condition, we produce bricks, textiles and glass in some of our sites, therefore we have to maintain our own workshops with skilled staff and volunteers (e.g. for old electric devices).'

Coal mining in Germany will come to an end in 2018. Nevertheless, people living in the Ruhr region (5 million) are very interested in the history of mining (and steel production which is still on a large scale at Duisburg – perhaps the largest steel making city in Europe), technology, engineering, geology, railways, canals. We believe they are more interested in this Big Stuff than most politicians realize.'



A guided walk into the Nightingale gallery is the highlight for most of the visitors, not only children, who put on a hard hat and miner's lamp to explore a genuine coal mine gallery and experience the unique atmosphere of early mining.

© LWL-Industriemuseum/ A.Hudemann M.Holtappels

Conference Reports

Fifth International Seminar Vías Verdes Mexico

Teresa Márquez Martínez

Directora, Centro Nacional para la Preservación del Patrimonio Cultural Ferrocarrilero/Museo Nacional de los Ferrocarriles Mexicanos

With the purpose of sharing experiences on the cultural and historic heritage of the railroad, we organized the Fifth International Seminar Vías Verdes Mexico in order to promote and transfer good practices on conservation and reuse, along with conceptual and normative knowledge to generate new greenways projects. All this bearing in mind the crucial moment the country is facing, where it is necessary to enhance the importance and relevance of engagement and participation of the local population in cultural projects.

The railroad in Mexico generated a rich heritage with a great economic, political, social, and historic impact. Through almost 170 years of its history, railroads translated their unstoppable journey in to buildings, engineering milestones, locomotives, cars, machinery, and gadgets along with an enormous self-awareness and identity.

Since 1993, there has been an exhaustive work on identifying, documenting, researching, analyzing, and cataloguing railroad's cultural heritage. This titanic work has succeeded in highlighting the great cultural and historic relevance that this heritage has.

In 2003 the National Council for Culture and Arts (Consejo Nacional para la Cultura y las Artes, CONACULTA) started Vías Verdes México (Greenways Mexico Program). Its objective is encouraging a national program for the recovery, conservation, and adaptive reuse of the railroad routes and their historic buildings.

Vías Verdes México is a cultural program that shares responsibility and enthusiasm with townships and state governments, institutions, and organizations from public and private sectors. With more than ten years of experience, Vías Verdes México has presence and recognition on a national and international level. The European Greenways Association, Spanish Railroads Foundation, Sustrans, and Rails-to-Trail Conservancy have been supporting and collaborating with the initiative through these years.

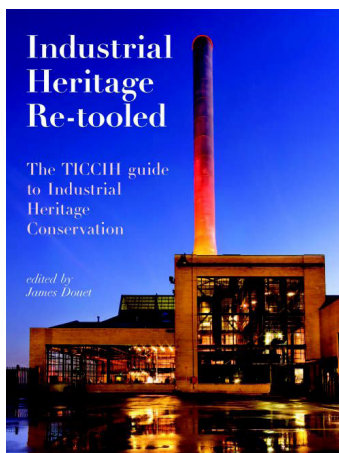
Its objectives are to:

- strengthen the knowledge and conservation of railroad cultural heritage by promoting the concept, vision, and mission of Greenways (Vías Verdes) and by analyzing different experiences in national and international initiatives.
- identify and optimize methodologies for the formulation of new greenways projects that are respectful of the singular and specific characteristics of each context.
- encourage good practices of cultural heritage and its context, promoting collaboration, support, and institutional advice on normativity.
- generate a process of appropriation of the greenways program by the organizations and social actors through their active involvement in the different phases of the project's development.

The presentations of the conferences can be read here: <http://issuu.com/viasverdesmexico/stacks>

Facebook: [/ViasVerdesMexico](https://www.facebook.com/ViasVerdesMexico)

Twitter: [@ViasVerdesMx](https://twitter.com/ViasVerdesMx)



Industrial Heritage Re-tooled: The TICCIIH 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](http://www.leftcoastpress.com) and other retail book sites and stores. Note: Left Coast Press is giving a 15 % discount for online purchase of the book.

The TICCIIH 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.](#)

Conference Reports

Industrial Cultural Landscapes within the World Heritage Context, Dortmund, Germany, February 26–27, 2015

Rolf Höhmann and Peter Wakelin

A symposium on the definition and characterisation of industrial cultural landscapes was organised in cooperation with the national committees of ICOMOS and TICCIH and hosted by the German foundation for industrial monuments and culture (Stiftung Industriedenkmalpflege und Geschichtskultur) at the Hansa coking plant, Dortmund. The symposium looked particularly at opportunities for industrial landscapes to be recognised as World Heritage. It emphasised outstanding industrial heritage as consisting of richly interconnected visual and cultural areas as well as individual monuments.

Most of the 120 delegates were from German organisations, particularly in the Ruhrgebiet, where the potential for an industrial cultural landscape nomination is being considered, but others came from Belgium, Japan, Romania, and the United Kingdom. The symposium took forward discussions from the conference on industrial and mining landscapes in a World Heritage context held in October 2013 at the Technical University of Freiburg in cooperation with the German branches of ICOMOS and TICCIH (*TICCIH Bulletin* #67).

Industrial heritage sites typically arise from the historical use of natural resources or other geographical opportunities and in this sense they are combined works of man and nature. It is therefore nearly always relevant to consider them in a landscape context. The concept of landscape has been referred to in a large number of existing industrial World Heritage inscriptions, but its interpretations have varied.

In his presentation Rolf Höhmann identified four categories of sites with a landscape element: linear sites such as canals and railways, industrial valleys such as those at Ironbridge and in Catalunya, mining areas such as Falun and Cornwall, and finally mixed sites, some of which contain defined monuments along with elements of associated landscape. Discussion drew out the need to ensure that any guiding definitions are wide enough to permit diversity and allow interdisciplinary viewpoints. Delegates also identified as a complex issue the work to establish the integrity of a landscape that includes the broader culture related to industry.

Three inscribed industrial sites were presented as case studies: Gerhard Lenz described the Upper Harz mining and water-management landscape (inscribed 2010), Peter Wakelin discussed the comprehensive inscription of 33 sq km as the Blaenavon Industrial Landscape in 2000 and Jacques Crul discussed the serial inscription of the four major mining sites of Wallonia (2012). Birgitta Ringbeck also talked about the nomination of the Zollverein complex (inscribed in 2001), where it had been felt that the site must have visibly distinct boundaries, with the result that an architectural and technical ensemble was inscribed rather than the broader cultural landscape that some felt was justified.

A session on ‘what do we mean by an industrial landscape?’ began with a paper by Winfried Schenk, who introduced theories of landscape and asserted that while all the world is a cultural landscape, for an outstanding area to be inscribed it must possess both inter-connectivity and a high degree of preservation. Two more papers by Hans-Werner Wehling and Marius Röhr focused on the development of a possible industrial landscape nomination for the Ruhrgebiet, representing the four river valleys of the region between around 1840 and 1947 through a series of defined areas that contain evidence of mines, steel-works, railways, housing, parks, and other features of industrial and cultural significance. Map regression defined the evolution of the landscapes and suggested their boundaries.

This was not a symposium to reach firm conclusions, but there appeared to be some broad consensus about principles for the future nomination of industrial landscapes.

The definitions of Industrial Cultural Landscape should follow closely those of Urban Historic Landscapes developed already by ICOMOS and UNESCO.

Industrial landscapes may be understood as areas that are the result of a historic layering of cultural, technical, industrial and natural values and attributes, and that extend beyond industrial plants or ensembles to include the geographical setting.

The wider context should be understood to include a site’s topography, geomorphology, hydrology and natural features that influenced industrial location and opportunities; the historic and more recent built environment interdependent with industrial culture; infrastructure above and below ground; and spatial organization, including open spaces, perceptions and visual relationships. It may also include physical representations of social, economic and cultural practices, values and processes and intangible dimensions of heritage and identity.

The final discussion drew out other points relevant to the Ruhrgebiet and industrial cultural landscapes more generally.

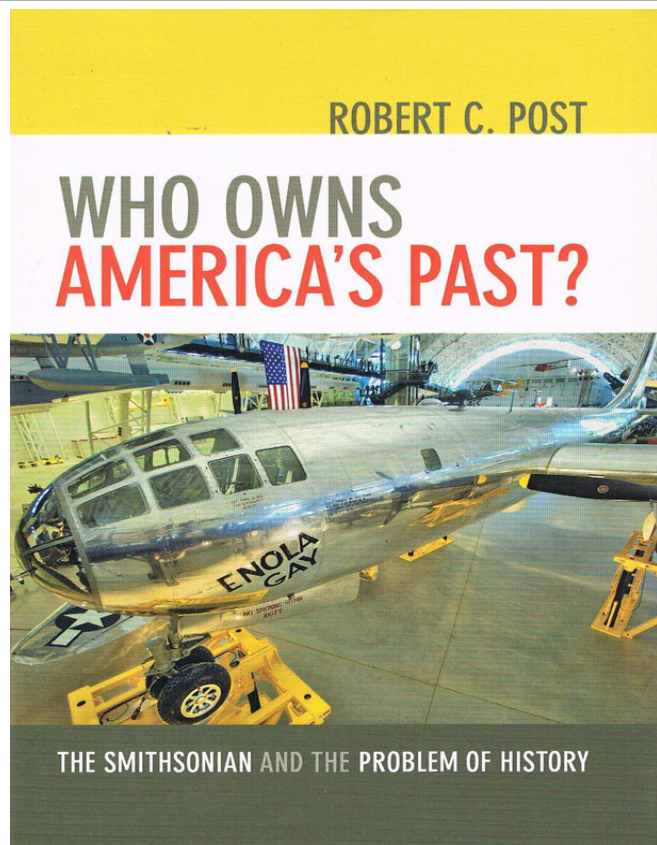
The value of such inscriptions is to enlarge the perspective and draw out by interdisciplinary means the relationships of industry with people and environment, so helping the region concerned to better understand itself in the present and future.

There is a risk that inscribed regions could begin to feel themselves stifled by a ‘glass case’.

The aim is not to produce a comprehensive representation of an area but to build on what is an essentially object-oriented Convention to enhance people’s experience of visible evidence. Such ambitious inscriptions require community and political assent and support.

The Stiftung Industriedenkmalpflege und Geschichtskultur plans to publish the papers of the symposium as a book before the end of 2015.

Book Review



Who owns America's past, *The Smithsonian and the Problem of History*, Robert C Post, Baltimore: John Hopkins University Press, 2013, pp. 370

James Douet

A book whose aim is to examine 'the changing ways in which the Smithsonian Institution has put historical artefacts on display' (p. xi) promises both an examination of the world's biggest museum – twelve research centres, a TV channel, massive digital presence, scholarly and popular journals as well as, needless to say, the history, science and art museums which cluster on the Washington Mall but extend well beyond - and some of the most intense arguments over how museums present the things of ours they keep, the most notorious of which was, of course, the battle over the *Enola Gay*, the B29 which dropped the first atomic bomb and the exhibition planned around its fiftieth anniversary, in 1995.

From the 1950s the Smithsonian's directors were seeking to move away from the old 'Nation's Attic' concept towards the museum as university, recruiting curators with doctorates and training a more critical eye on the meanings of the artefacts in its collections.

The history of technology was a direct beneficiary, 'an emerging discipline which would cast new light on the entire sweep of what was called Western civilisation' (p. 42), the young Society for the History of Technology (SHOT) had its first home at the museum, and the title of its new journal *Technology and Culture* reflected the revised interest in social context.

Studying artefacts as cultural objects was central to this. The results soon started appearing in exhibitions. One of the collection's jewels was the *John Bull*, a British steam locomotive shipped to America in crates in 1831 and, with the Star-Spangled Banner, 'arguably the truest piece of the True Cross' in the collection (p. 9). Soon the engine would be used to illustrate not the story of railroads but the growth of powerful corporations. The nature of displays was also changing, away from collection-driven taxonomic 'Halls of ...' displays towards thematic narratives, and from commemorations and celebrations towards critical interpretations of public history.

The much greater cost of these exhibits, full of the new 'stagecraft' developed by designers like Charles Eames, immersed the museum in the pursuit of private funding, a tendency with predictable but painful consequences. The 1973 *Shaving through the ages*, for example, featured the main sponsor's large twin-blade razor raised above its commercial rivals on a pedestal with labels which read more like a trade show than a history museum. The 'stakeholders', arguably the villains in Post's narrative, had arrived.

Their interests and influence would be vastly more evident in the real row about whether Smithsonian exhibitions should be commemorative or interpretative, the 1995 exhibit of the restored *Enola Gay*. After the museum's script was bowdlerised by the Air Force Association, and the plane presented as a technological marvel rather than historical witness, the sacked director of the National Air and Space Museum, Martin Harwit, wrote bitterly 'For whatever it costs to buy influence, you can now have your own version of our nation's history displayed and opposing views suppressed at the Smithsonian Institution' (p. 197). As collection-driven exhibits gave way to story-driven shows, so both were now threatened by constituency-led exhibitions.

This is a most readable account written by an insider of a fascinating institution, even if the title rather overreaches the range of the narrative. Arguments are always fascinating over how to choose between the many stories which objects can tell, but especially when they have the historical heft of the ones which Robert Post was fortunate enough to handle during his career at the museum.

Publications received

***Post-industrial landscape scars*, Anna Storm, NY: Palgrave Macmillan, 2014, pp. 227**

Using the metaphor of the scar as an analytical tool, Anna Storm reflects on how industry has changed the landscape and society in countries of the Baltic Sea region - Lithuania, Sweden, Germany and Denmark. The narrative is built around five post-industrial sites in terms of re-used and ruined landscapes and a third category as 'undefined'.

Conference calendar



2015

US - SIA Annual Conference
28-31 May 2015 Albany, NY, USA. See www.sia-web.org

Australia - Railway Heritage Conference, Ipswich, Queensland
24-28 July 2015: <http://www.theworkshops.qm.qld.gov.au/Events+and+Exhibitions/Events/2015/07/Railway+Heritage+Conference#.VjjauDA4>

Israel - ICOHTEC 42nd symposium in Tel Aviv. Call for papers.
16-21 August 2015. www.icohtec.org.

France - BigStuff 2015 - Technical heritage: preserving authenticity - enabling identity?
3-4 September 2015. Historique Minier, Lewarde

France- TICCIH Congress Lille 2015: Industrial Heritage in the Twenty-First Century.
6-11 September 2015. Early-bird registration rate extended until 30 May, 2015.

UK - AIA Annual Conference, Brighton
4 - 9 September 2015

Czech Republic - ERIH Annual Conference 2015, Pilsen, European Capital of Culture in 2015: First Call for Papers
21- 23 October 2015 www.erih.net

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

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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

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

The **TICCIH Bulletin** welcomes news, comment and (short-ish) articles from anyone who has something they want to say related to our field. The Bulletin is the only international newsletter dedicated to industrial archaeology and the conservation of the heritage of industrialisation. The TICCIH Bulletin is published online to members four times a year.

Back issues can be downloaded as a pdf file from the **TICCIH** web site, www.ticcih.org.

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