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OPINION

ITALY

THE MINING HERITAGE OF CAVE DEL PREDIL

Anna Frangipane, Udine University

Cave del Predil (Raibl in German and Rabelj in Slovene) is a small, isolated mountain village in northeastern Italy, located at 990 m on a strategic crossroads near the borders of Austria and Slovenia, where the Slavic, Germanic, and Alpine cultures have collided and blended over the centuries. The settlement, one of a kind for the Friuli Venezia Giulia region, has received funding for its enhancement and preservation, as well as important safety measures. But these have not solved the difficult problem of the elevated environmental impact of such an abandoned industrial site.

The area has been the site of mineral extraction in both open quarries and underground mining since ancient times due to the presence of galena (lead sulfide) and sphalerite (zinc sulfide). However, the mine was exploited most extensively between the 1920s and the 1950s, with up to a peak of 850 miners working in the area.

The mine reaches deep into the bowels of Monte Re (1912 m), which delimits the village to the west, comprising a network of over 100 km of tunnels on 19 levels at altitudes ranging from 450 m above that of the village to 480 m below it.

OPINION



Cave Del Predil village in a postcard from the 1960s.

The Bretto Tunnel, approximately 5 km long at a depth of 260 m, connects the mine to Slovenia. It was excavated for the purposes of draining water from the deepest levels of the mine, but it was used during World War I to move several hundred thousand soldiers under the Austrian-Italian border by means of rail cars. Later, Slovenian miners used it to travel to work on a daily basis. After the closure of the mine, in 1991, the area became part of the Raibl/Cave del Predil Geological-Mining Park, owned by the Autonomous Region of Friuli Venezia Giulia and managed by a concessionaire, presently the Cooperativa Alea.

In terms of extension and peak production, the mine has been among the most important mineral extraction sites in Italy. No less important, however, despite its limited size, is the village that once served it. A small company town, it boasts some prestigious buildings, built between the 19th and early 20th centuries, that make it a place of indisputable cultural interest. It was designated in the 2017 Regional Landscape Plan as a "center of high symbolic value," the only industrial town among 40 sites of regional historical or artistic interest.

The abandoned mine has left a series of buildings dating to the

early 20th century framed in rough concrete along the slopes of Monte Re, which served for the handling and processing of the extracted ore (Figure 2). Also present is the severe concrete structure at the entrance to the mineshaft ("pozzo Clara"), containing the freight elevator for transporting the miners deep underground.

In the valley just below, various mining company buildings remain as traces of investments on the part of the owners between the end of the 1800s (when the area was part of the Austro-Hungarian Empire) and the 1920s (during the Fascist years). They once contained workers' quarters, a workers' recreational club, and company offices. A small portion of the complex, today owned by the Municipality, has been protected as a national cultural asset. They derive from a "Corinthian style" that translates the lines of Alpine architecture into composite forms; those from the early 1900s are Art Deco in character, with construction details and decorative facade elements that lend dignity to an otherwise grim industrial town.

Thanks to ongoing maintenance by the mine owners over the years, the buildings remained unchanged in appearance until closure, but have since suffered progressive degradation, due in part

OPINION



Industrial buildings that served the mine.

to neglect, in part to vandalism, and in part to building work that is incongruous with and disrespectful of the cultural value of the overall building complex.

An exception is constituted by the Office building by the architect Cesare Miani (Udine, 1891-1957), the designer of the late 1920s buildings. Following a recent restoration today it hosts the “Mostra della tradizione mineraria di Cave del Predil,” a small museum illustrating the local traditions of the mine. Opened in 2016, the museum retraces the history of the mine, with attention to the 1900s. There are thematic panels illustrating the history of the area, beginning with its geological aspects and then moving on to the construction of the village (with two rooms dedicated to its development and to the 1920s buildings), and the development of the mine. The final panels are devoted to day-to-day mining operations and daily life in the village. The narrative in words and pictures is completed by a display of objects that survived the abandonment of the mine: books from the workers’ recreational club, a billiard table, filing cabinets, and other furnishings. Rooms



The workers’ recreational club, late 1920s, designed by architect Cesare Miani, is in a state of dereliction, as are most of the surrounding buildings.

dedicated the miners’ clothing complete the exhibition. Visits to the mine begin from the exhibition site. Today only a few hundred meters are accessible to the public, with transport by electric train.

The activities of the Geological-Mining Park appear to have given new impetus to the use of the site in a cultural key, as it starts to occupy an important but yet-to-be developed niche of interests in the region, in relation to possible national/international thematic networks currently being studied by the writer.

Contact the author

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REPORT



Internal view of main mill building.

NEPAL

BIRATNAGAR JUTE MILLS AND THE FOUNDATION OF DEMOCRACY IN NEPAL

Kai Weise, President ICOMOS Nepal

The Biratnagar Jute Mills was the first industrial complex built in the country. It was also where labour unrest allowed political parties to gain a foothold and overthrow the Rana oligarchy. The Biratnagar Jute Mills was established under Prime Minister Juddha Shamsheer in 1936. This was the first registered industry in the country and is an impressive example of an industrial complex, even by today's standards. The government is not taking steps to safeguard the historic industrial complex. It must be proclaimed a national heritage, the place where modern industry began and democracy gained a foothold in Nepal. There has, however, been little interest to safeguard this superb example of early industrial heritage.

The area in the eastern Terai was good for growing jute and local merchants sold the jute across the border to Indian jute mills. Realizing the potential of having their own mill in Nepal they brought this idea to the attention of Prime Minister Juddha Shamsheer. The Prime Minister would have been visiting the earthquake affected sites after the 8.4 magnitude Great Nepal Bihar earthquake of 1934 of which the epicentre was less than 100 km away.

In the beginning, Biratnagar Jute Mills was established with 75% funding by an Indian businessman, while the remaining 25% shares remained local of which only 8% was the government. There were, however, no labour laws and conditions at the work site and housing were abominable.

Nepali politicians were largely in exile in India. With Indian independence there was fresh momentum to launch protests against the Rana regime in Nepal. Like in so many countries around the world, it was the discontented industrial labourers who supported such political opinions. The first labour strike, the Biratnagar Hartal, was launched on 4 March 1947, instigated by Girija Prasad Koirala who was working there. This allowed eminent exiled politicians such as Bishweshwar Prasad Koirala and Manmohan Ad-

REPORT



Above: Internal view of main mill building



Left: Turbine Power House side elevation

REPORT



Diesel Power House with Ship Engines manufactured in Winterthur, Switzerland

hikari to enter the fray. The labour unrest quickly changed into a freedom movement and spread to Kathmandu.

Troops were sent in and the politicians and those involved in instigating the unrest were imprisoned. Even though all the demands of the labourers were granted, the strike continued under Matrika Prasad Koirala. Further unrest followed leading to many labourers being injured and there were casualties. On 16 May 1947, Prime Minister Padma Shamsher Rana gave a historic speech agreeing to allow 'commoners' into the government. It took another few months and a request by Mahatma Gandhi to get the remaining politicians involved in the Biratnagar Hartal to be released from prison.

Commercial competition with the Indian side was difficult, and without subsidies for the jute industry the mills began to deteriorate. This was of course in addition to political interference and corruption that hardly allowed for the industry to revive. It was only after the 1993 elections with the United Marxist Leninist (UML) government that new efforts were made to revive the industry, buying out the shares owned by Indian nationals and

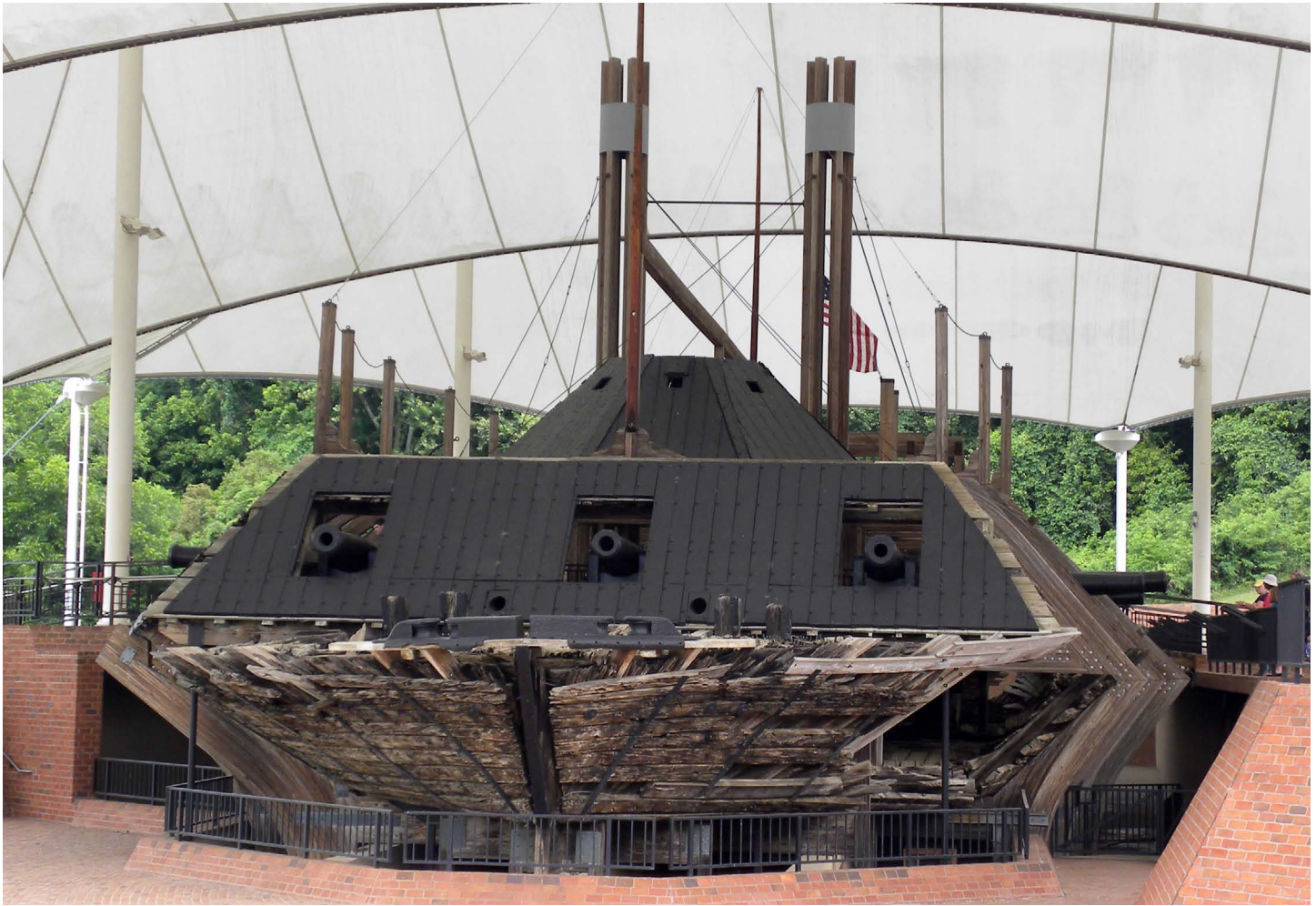
increasing the government's holdings. In 1998 with change of government, it was decided to give up the company on a management contract, followed by leasing it to a private competitor, but these failed. The government then paid off the two thousand workers and shut the factory. The Jute Mills was leased by an Indian company between 2013 and 2015. Now it seems the government might be planning on selling off the company, however the local community has launched a campaign to save the mills.

I was part of a team that was set-up in 1994 to renovate and reorganize the Biratnagar Jute Mills under the initiation of the UML led government. Documentation of the wonderful facilities was undertaken which spread over an area of about 115 acres including the main compound, three labour colonies, agricultural land as well as procurement offices in various nearby towns. The main factory consisted of two parallel mill buildings which were over 210 m long, with an overall width of about 75 m. These were beautiful metal structures with jack-arch roofs. Probably the most striking buildings would have been the diesel power house with the two huge ship engines and the turbine power house. These could be considered the only industrial heritage buildings in Nepal.

The mills system was the most fascinating, which included the production as well as the necessary backup sub-systems. The production system was directly involved in the processing of raw jute. The process began with the selection of jute for the correct blend. The various grades of Dossa and Sada jute were mixed according to the requirement of the end product. The jute was either processed in the sacking system of the old mill or the Hessian system of the new mill. The first part (spinning mill) consisted of bathing, preparing, spinning and winding. The second part (weaving mill) consisted of beaming, loom and finishing. The support systems included supply of jute, gunny marketing, labour, maintenance and storage, technical systems, security, management and marketing.

The labour colonies were, however, rather abysmal. The south colony, which borders directly onto India, was where earth was excavated for the construction of the mill buildings and the godowns. The depression was filled by waste from the Jute Mill and from the nearby Sugar Mills. Across the border, gates were constructed to control the waste and when shut, this area was inundated. A further colony was Hari Nagar Bhatta, where the brick kilns were originally set up for the Jute Mill and later the area was filled up and provided to the labourers to build their huts. The most fascinating place was however Hartali Hat. This was where B P Koirala, Man Mohan Adhikari and the organizers of the first labour movement in Nepal had stood on a platform under a tree and presented their speeches on 4 March 1947. The Rana regime snuffed out the agitation, but the movement had struck root and within a few years it led to democracy.

WORLDWIDE



The USS Cairo in her final resting place at Vicksburg National Military Park. A wooden framework has been built to support what remains of the ship. Photo: Wilson44691, Wikipedia Commons

U.S.A.

HISTORIC AMERICAN ENGINEERING RECORD UPDATE

Christopher H. Marston, Justine Christianson, Todd Croteau, Thomas Behrens and Dana Lockett

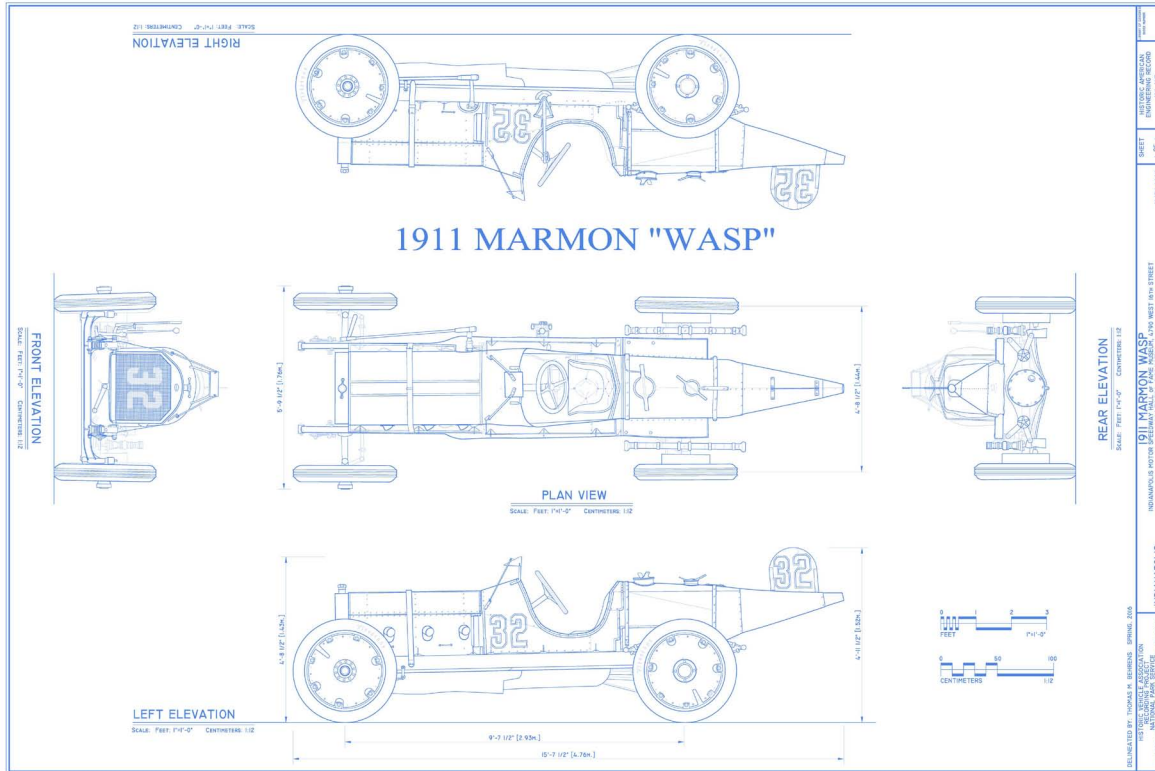
The HAER has been on the leading edge of studying and documenting industrial remains for decades. This collation of current projects showcases the variety of sites and artifacts currently under investigation.

Heritage Documentation Programs New Technologies Initiatives
The Heritage Documentation Programs are successfully keeping in step with the development and integration of new survey and 3D visualization technologies. HAER continues to survey sites with

the latest terrestrial laser scanners to achieve highly accurate 3D pointclouds from which smart 3D parametric models are created and manipulated into archival architectural drawings. In addition to our traditional drawing documentation, this born-digital workflow has led to new and exciting digital visual interpretations of historic resources including 360 degree pano-photos, 3D video animations, 3D mesh models, and virtual tours that integrate all of these elements into online web based interactive explorations. Providing the public virtual access to these sites has been overwhelmingly embraced by project sponsors and the National Parks as a supplementary tool to disseminate the importance of our architectural heritage in a fun and engaging interface. Sample industrial projects include: **Miller Field Seaplane Hangar**; **Pu'uhonua O Hōnaunau Ceremonial Site**; **Yukon Mining Sites**; **U.S.S. Cairo Ironclad Gunboat**; **Sketchfab 3D mesh models**; **HDP YouTube site**.

U.S. Maritime Administration's (MARAD) Historic Ships Recording Project The Historic American Engineer-

WORLDWIDE



Historic American Engineering Record line drawing of the 1911 Marmon "Wasp," winner of the first Indianapolis 500.

ing Record (HAER) is documenting six ships slated for decommissioning. These include the following: GTS Admiral William Callaghan (1967), a roll-on/roll-off ship with a pioneering gas-turbine propulsion system; SS Petersburg (1963), the last Offshore Petroleum Distribution System tanker in the Ready Reserve Force; MV Cape Ray (1977), a roll-on/roll-off and container ship; SS Cape Inscription (1975), an example of a domestic, contemporary roll-on/roll-off vessel; and SS Keystone State (1965), one of three T-ACS-I class vessels that were modified breakbulk-container ships rebuilt as cellular container ships in the 1970s.

In 2012, HAER documented the nuclear power plant on the NS Savannah. MARAD has now requested supplemental documentation covering the ship's other engineering equipment and systems, including the cargo gear, handling, and dehumidification systems; navigation systems and equipment; radio communications; HVAC and refrigeration systems; and steering gear, anchor handling, and mooring. The history of the ship's design development will be augmented by newly located surviving concept and preliminary design materials. Finally, the numerous conversion and reuse proposals from 1965-1979 and the ship's actual use as a museum from 1981-1994 will be researched.

The United States Coast Guard sponsored the documentation of the Reliance class, the first new class built by the U.S. Coast Guard after World War II. The ships were used in search and rescue operations and law enforcement. The famed Raymond Loewy

Associates designed the interiors. The unique features of the class included the exhaust system, which was vented horizontally rather than through the more typical horizontal stack. This allowed for a helicopter landing pad on deck and a 360-degree view from the pilothouse. The first ships built in the class also used a combination diesel and gas propulsion system. Fourteen of the ships remain in active use but will be decommissioned in the near future. HAER produced large-format photographs and historical reports for the class, and individual ships including: USCG Reliance, USCG Diligence, USCG Vigilant, USCG Active, USCG Confidence, USCG Resolute, USCG Valiant, USCG Steadfast, USCG Dauntless, USCG Venturous, USCG Dependable, USCG Vigorous, USCG Decisive, and USCG Alert.

Historic Vehicle Association HAER is continuing to work with the Historic Vehicle Association (HVA) to create a comprehensive record of the most historically significant vehicles in the U.S. HAER is using high-definition laser scanning to capture accurate dimensional data from the vehicles and high-resolution photographs to capture details in order to produce measured drawings. This continuing work will serve as a foundation for a best practices guide for the scanning and production of HAER drawings for historic vehicles. HAER has also been working with HVA to establish the stringent criteria for vehicle inclusion onto the HVA's Historic Vehicle registry. A few of historically significant ve-

HAER Update Continued Page 13

BRAZIL

HISTORIC RAILWAY RESEARCH

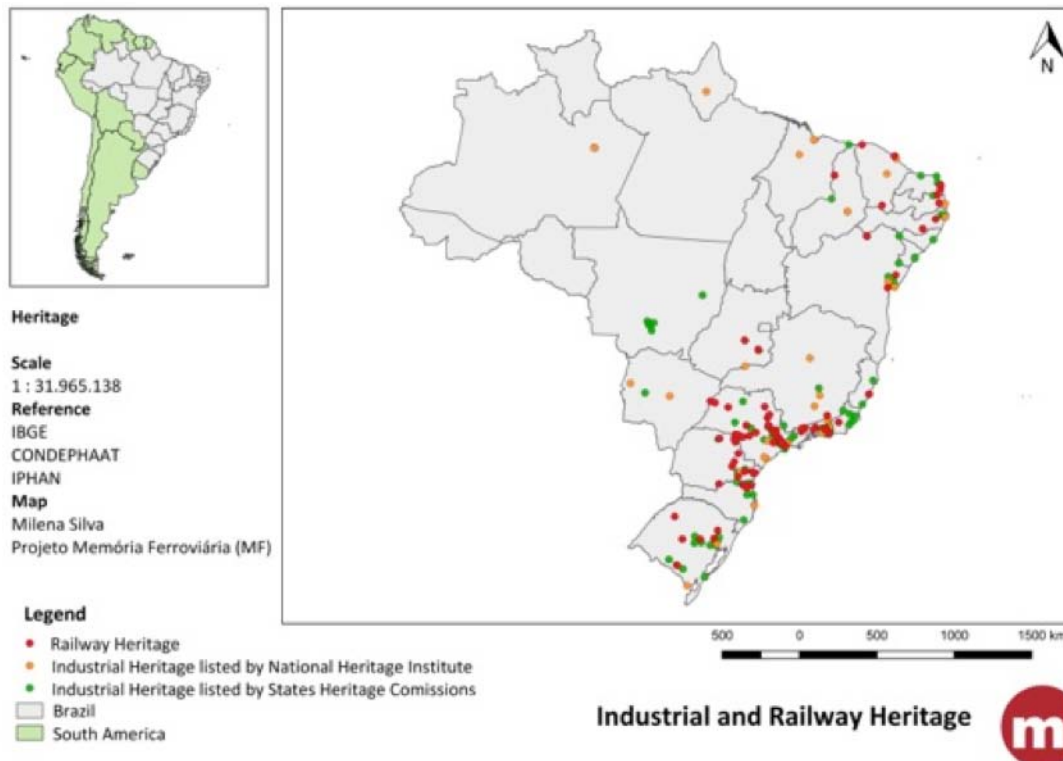
Eduardo Romero de Oliveira, São Paulo State University

The preservation of railway properties in Brazil started, as well as in many other countries, with the celebration of the centenary of the arrival of railways to Brazil in 1954. However, not much was preserved in that period. With the deactivation of railways in Brazil during the 1970s and 1980s many properties fell into the hands of the government which had no real interest in preservation. In 1984, the Ministério do Transporte Brazil (Department of Transportation) and Rede Ferroviária Federal S.A.- RFFSA (Federal Railway Networks) developed some railway preservation projects including the creation of museums, the storage of different objects and the recovering of some buildings. At the same time, several social movements demanding railway preservation started to appear. They required not just public protection for railway buildings, but also social preservation initiatives and even the operation of old railways.

As a consequence of granting railway operation to private companies, the Institute of National Historical and Artistic Heritage -

IPHAN - the national heritage authority was designated in 2004 to identify, protect and manage historical, cultural and artistic railway assets (Law number 11.483/2007, section 9). Since then, IPHAN has been responsible for managing railway assets as well as appraising and inspecting their protection declarations, as it used to be since 1937. From a national point of view, the heritage technicians don't have the know-how to survey the railway assets as urgently as necessary including material remains of huge dimensions: enormous warehouses and workshops, thousands of model villages, rolling stock and railway lines, among many other assets - and also non-architectural elements such as documents or railway museum collections. So far, these unprecedented efforts led to the protection of 639 railway assets all over Brazil between 2007 and 2016, thanks to the joint management by IPHAN and other public bodies or social institutions.

The work of civil preservation associations and the intensification of legal protection of railway assets seemed to us to be a nice opportunity for an educational research on how railway assets were being preserved in Brazil. In this sense, we have been working on the called Railway Memory Project since 2009. The main aim of this project is to reflect about different aspects in relation to the protection of cultural or industrial heritage by studying the preservation of railway assets. From 2009 until now, our project has been funded by Brazilian research agencies (including the São Paulo Research Foundation/FAPESP, grant #2016/15921-2), which has let us conduct research, develop education programs, train



WORLDWIDE



Railway shed containing the 5° Stationary Steam Engine, New Inclined Plane designed by the engineer Emilio Schnoor and built by the São Paulo Railway (1895-1902). Photo: Eduardo Romero de Oliveira.

human resources (both at undergraduate and postgraduate levels) and to organize and hold scientific events focused on industrial heritage. Furthermore, we created a website [<http://www.rosana.unesp.br/#!/pesquisa/laboratorio-de-patrimonio-cultural/projetos/projeto-memoria-ferroviaria-pmf/off-ingles/>] in Portuguese, English and Spanish to grant public access to our scientific production, bibliographic surveys and digitalized documents about Brazilian railway heritage and history.

Several studies and surveys let us notice that railway assets have priority when compared to other protected industrial assets. From the point of view of the archaeology of industrialization and TICCIH's Nizhny Tagil Charter, we have found in Brazil 50 industrial assets protected by IPHAN, out of which 9 are railway assets. After consulting the public state protection bodies, we have also found out that, by 2016, 276 industrial assets all over Brazil enjoyed protection (see Map 1). Among them, 100 railway assets, including those of architectonic relevance: 62 stations, 29 railway buildings, 3 operation buildings; plus 4 rolling stock collections, 1 railway line and 1 plantation. For comparison purposes, in 2017 there are 74 industrial assets in the State of

São Paulo, out of which 42 are railway assets. Hence we may say that the protection of industrial heritage – specially in the case of railways – is mainly focus on isolated buildings classified as monuments rather than on the identification of sites relevant for understanding past industrial and technological processes. However, this idea has been changing in the last few years – an example of this is the protection statement in 2016 of the funicular system built by the São Paulo Railway in Paranapiacaba, São Paulo State.

We may conclude that throughout the last 30 years studies and papers on industrial remains and their protection have also increased. More specifically, about 400 theses and papers on history and railway heritage have been written recently (see Railway Memory Library). This positive scenario is the consequence of public policies devoted to scientific research in Brazil: encouraging the creation of post-graduation programs in public universities since the 1980s; increasing funding for scholars and scientific projects since 2002; plus promoting new methods and research

Historic Railways, Continued Page 20



The Cape Romain Lights viewed from the leeward side of the island.

U.S.A.

FORTY-EIGHT ANCHORS: THE CAPE ROMAIN LIGHTHOUSES

Zachary Liollo

South Carolina's coast has been home to a vibrant maritime culture for centuries. However, the same bountiful waters were also the scene of disaster and ruin. European sailors actively sought to chart the shifting sandbars and shoals. These hazards destroyed countless vessels unlucky enough to run aground, especially in a storm. The ships owners' appealed to the Federal government soon after its formation, and the construction of navigational aids became a priority.

Foremost was the feat of building towering lighthouses, and South Carolina's coast was no exception. The first Cape Romain Light

was constructed in 1827, followed thirty-years later by the second light bearing the same name. The 'new' light was activated on January 1st, 1858. Both brick structures still occupy the same island, a few hundreds of feet apart. The lighthouse compound also contains the remains of the lightkeeper's houses and outbuildings. Lighthouse Island is also somewhat of an anomaly along the Carolina coast; the beach is expanding into the ocean. Buried beneath the sandy surface are untouched archaeological resources, offering a tantalizing connection to the past.

Throughout the 20th century, kedge anchors have been recovered from the shallow waters bordering Lighthouse Island. These were used to winch ships away from obstructions and avoid catastrophic damage. In Cape Romain's case, these vessels came too close to the shoals. Sailors would have to quickly row out in a small boat with the anchor, and drop it. Back on deck, the crew would strenuously turn a wooden capstan, pulling the ship towards the anchor (and safety).

WORLDWIDE



Open-tread iron stairs of the 1857 light spiral to the masonry watch room and iron lantern above.

Tommy Graham is a lifelong resident of McClellanville, SC. The old village is within rowboat distance of the lights, just across the Cape Romain National Wildlife Refuge. Through an agreement, Tommy maintains the old lights and works with Coastal Expeditions to give tours on a limited basis.

Despite the wreckage that has floated ashore, the lights saved many more ships of impending destruction. They also welcomed seafarers, from the world over, as they neared the Port of Charleston. Prior to the completed Intracoastal Waterway, even coastal ships had to make the dangerous journey offshore. After World War II however, advances in radio communication and inland navigation made many lighthouses obsolete. In 1947, the Cape Romain Light was decommissioned. It remained an important tactical landmark for years after; military pilots used the lighthouses as a turning point while on exercise. They became curiosities, especially for locals who loved to explore the expanse of wilderness.

Under his leadership, the Cape Romain lighthouses retain their historic character. Their paint schemes; iron oxide red for the older light, and a classic black-and-white scheme for the newer, taller iteration, were meticulously repainted, using historic photos and



Tommy Graham leans against his prized kedge anchor: 'There's about forty-eight anchors that have been recovered. We know that many of these anchors were from ships that were eventually lost. I used to take the boat out there to the island... there was a piece of an old wooden ship hull that had washed up. It's long rotted away now. Even today, pieces of anthracite coal wash up on the beach. They're from a barge that sank 100 years ago near the shoals.'

descriptions. Besides painting, continuous maintenance includes clearing the thick underbrush and maintaining pathways through the compound. Even the wooden stairway and platform to reach the 1857 light was built by himself, and a few select volunteers. As a testament to his construction abilities, the platform survived Hurricane Hugo the following year in 1989. Cape Romain and McClellanville received a direct hit from the powerful Category 4 storm. Despite the devastation ashore, the resilient brick structures held fast. Following the cleanup, the 1857 watch room deck had new handrails installed in the following decade.

Upon the first Cape Romain construction date in 1827, the U.S. was still using an antiquated lamp style that had limited visibility. Called parabolic reflectors, these lenses were designed by Winslow Lewis, a former sea captain turned inventor. Cape Romain's older light had eleven wicks with this design burning whale oil. The squat brick structure features no watch room and a timber staircase and frame. The low focal plane and Lewis-built lenses

WORLDWIDE

were a dangerous combination. Ships were out of range until they were almost aground, providing little warning. The structure also resembled a wind-driven grist mill that once stood on adjacent Mill Island. This added to the confusion among unfamiliar sailors, and demanded a technological change.

A French invention, the Fresnel Lense, was eventually adopted and installed in the taller 1857 light. The new Cape Romain light gave the advanced first-order lens a commanding height (“order” referring to brightness). Inside, the heavy rotating base of the lantern is supported by a fluted, cast iron column. Ball bearings facilitated the rotation. A product of its time, the masonry watch rooms of the antebellum period would give way to riveted sheet iron assemblies post-1870. “After 1870, you start to see a lot more cast iron being utilized. Windows and door surrounds for example... The design of U.S. lighthouses became more-and-more standardized.”

The prominent 1857 lantern has 16 facets split between the long iron muntins. While the Lense it once housed came from Paris, much of the structure’s material sources remain a mystery. There has been some talk that Philadelphian brickyards and foundries supplied much of it, though nothing has been confirmed with documentation. Even with the adoption of electric bulbs, the Lense remained intact until the early-1960’s. Vandals seeking out the brass frame broke apart the crystalline glass in a desperate attempt to

scavenge the metal. Appalled by the act, Tommy has worked to conserve what pieces he finds buried in the sand.

The newer light has posed the greatest preservation challenges. Amazingly, the immense structure was built on a timber mat with nearly fifty wooden piles. Over the years, the structure has begun to tilt to the southwest, if only several degrees. The stately iron stairs have also corroded leading to “rust jacking,” a phenomenon where the expansive forces of iron oxide crack the surrounding masonry.

The Cape Romain Lighthouses and their artifacts remain integral to South Carolina’s maritime landscape, and a nation that relies on waterborne commerce. At one time, they warned sailors of deadly shoals. Today, they welcome visitors to Cape Romain’s vast natural landscape, and serve as monuments to generations of seafarers. “It’s incredibly rare, it seems to me at least, to have the original and successor [lighthouses] right there on the same site,” Tommy stated. Faced with the awing task of preserving the lighthouse compound, he enlisted the help of friends and locals. As Graham’s cause gains momentum, so do the number and location of its advocates. The Cape Romain Lights offer a captivating view into our oceangoing past.

HAER UPDATE, CONTINUED

icles the HAER staff has recently scanned and drawn have been the 1968 Mustang Fastback “Hero” car from the movie Bullitt, President Ronald Reagan’s 1962 Willys “Jeep” CJ-6 that he drove at his ranch, and the 1911 Marmon “Wasp”, winner of the first Indianapolis 500.

HAER Covered Bridges Recording Project HAER has collaborated with the Federal Highway Administration’s National Historic Covered Bridges Preservation Program since 2002. This initiative has funded the rehabilitation of over 200 covered bridges nationwide, as well as sponsored educational and research projects by both HAER and USDA’s Forest Products Laboratory. Most recently, HAER completed documentation of several historic covered bridges, using Leica laser scanning technology; hosted an international covered bridge conference in Dayton, Ohio; and completed a national context study and designated seven bridges as **National Historic Landmarks**. These NHLs include: Brown Bridge, Vermont (1880); Powder Works Bridge, California (1872); Duck Creek Aqueduct, Indiana (1846); Eldean Bridge, Ohio (1860); Humpback Bridge, Virginia (1857); Knight’s Ferry Bridge, California (1863); West Union Bridge, Indiana (1876).

HAER has partnered with Case Western Reserve University, Johns Hopkins University, the National Society for the Preservation of Covered Bridges and Wiscasset, Waterville and Farmington Railway (WW&F) Museum on several large scale covered bridge engineering studies. These include engineering testing of full scale Howe and Burr-arch trusses, and wood deck testing of a full-scale Town lattice truss. The reconstructed Moose Brook Bridge, a 1918 Howe truss, is in the process of being relocated and reused on the WW&F excursion rail route. In addition, two publications have emerged from this program: Justine Christianson and Christopher Marston edited a book on the contextual history of covered bridge trusses, entitled *Covered Bridges and the Birth of American Engineering* (NPS, 2015). HAER is finalizing a forthcoming publication, adapting the Secretary of the Interior’s Standards for Preservation to covered bridges: *Guidelines for Rehabilitating Historic Covered Bridges*

U.S. WITHDRAWAL FROM UNESCO: A BRIEF HISTORICAL PERSPECTIVE

Bode Morin, US TICCIH Representative

Citing political directions opposed to the current federal administration, effective December 31, 2018 the United States will withdraw from the United Nations Education, Scientific, and Cultural Organization (UNESCO) for a second time since its founding. The US was one of thirty-seven original nations to form UNESCO in 1945 after playing a key role in the development of and support for the United Nations. UNESCO's mission is to build peace through international cooperation in education, the sciences, and culture. It developed the World Heritage Convention in 1972. Despite the current support for the United Nations broadly, the US has since the 1980s claimed overt politicization, oppositional directions, and critical management issues of UNESCO as reasons for discontentment. Often these issues stem from oppositional support for state actors in the Israeli-Palestinian conflict but have also included claims of excessive budgets, mismanagement, and support for unpopular issues. The US has formally withdrawn from UNESCO twice and withheld funding once over the last 35 years.

United States President Ronald Regan first cited political disagreements and organizational management conflicts before pulling the US out of the UNESCO in 1984. The George H.W. Bush administration that followed Regan, maintained the withdraw claiming an inherent political bias argument and the next US president, Bill

Clinton cited budget constraints for not returning in the 1990s. Despite the formal withdraw through this period, the US still maintained a strong commitment to the World Heritage Convention including hosting the Committee in Santa Fe in 1992 and nominating several sites for inscription. Those with an industrial context include the Brooklyn Bridge, Chicago Early Skyscrapers, Dayton Aviation Heritage National Historical Park and Ellis Island, New Jersey and New York.

In 2002, after eighteen years of political separation, president George W. Bush rejoined UNESCO claiming that the organization had responded to US concerns over management and demonstrated support for international directions that mirrored his administration's platform. Unfortunately, full US participation did not last a decade. The US, whose financial contributions amounted to 22% of the total UNESCO budget, stopped contributing in 2011, citing a familiar political disagreement related to Middle Eastern politics. Although the US stopped providing financing, the nation continued to participate in UNESCO and the World Heritage Convention until February 13, 2018, when then US Secretary of State Rex Tillerson submitted a letter announcing the second US withdraw effective at the end of the calendar year. As with the first withdraw, the US relinquishes participation in UNESCO governance and voting on future world heritage nominations, but the US may still submit nominations for world heritage designations. Although a policy statement has not been drafted, current government actions and indications within the US National Park Service suggest a more complete cessation of participation.

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

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WORLDWIDE



The 1874 engine house is mostly of blue engineering bricks with coloured brick decoration.

U.K.

SAVING SANDFIELDS WATER PUMPING STATION

Stephen Sanders, Vice Chairman, The Lichfield Waterworks Trust

Settlements in the Midlands region of central England were developing water supply systems already in the Medieval period, and the community around Lichfield Cathedral had piped water from springs by the mid-12th century. In time, this extended to include supplying some water to the city. The Franciscan Friary established in 1237 was granted a water supply from springs and built the Crucifix Conduit, and after the Friary was dissolved in 1538 the Conduit survived, remaining in place until the 19th century.

Although Lichfield was a source of very good water, in the early-industrialising region which became known as the Black Country, the water was of poor quality and often polluted. Typhoid, typhus and cholera were common and had a significant impact on development.

In 1851, the Chief Engineer of the local South Staffordshire Rail-

way Company, John Robinson McClean, suggested drawing from the springs and streams west of Lichfield, but failed to gain support. With the backing of businessmen involved in the railway, McClean then created the South Staffordshire Waterworks Company, reviving the idea of piping Lichfield water to the Black Country. McClean's idea was to utilise the bed of the railway track from Lichfield to Walsall, surmounting serious opposition with skilful diplomacy.

The design of the company's Sandfields pumping station indicates the train connection, being by Edward Adams who had designed several railway buildings. It was a sturdy building designed to cope with the loads that engines would impose. A pilot well of 14 feet diameter and 77 foot deep had been constructed connected to three 8 feet diameter 70 foot sump wells.

The contract for the rotative beam engines went to James Watt & Company in Birmingham. Reputedly these engines were designed by the great engineer Isambard Kingdom Brunel for his ill-fated Atmospheric Railway and re-used some parts of the engines. 24-inch and 22-inch cast-iron pipes were laid along the bed of the railway, made by Cochrane and Company of Dudley between Lichfield and Walsall by John Aird and Sons. The work was carried out without interruption to the railway traffic.

The first phase of work was completed by December 1858, a

WORLDWIDE

grand event was held involving a decorated train and the Earl of Dudley to set the engines in motion using a suitably inscribed ceremonial lever, and water was flowing to Walsall.

Greater demand by 1866 led to the installation of a third engine. Provision for the increase had been made by laying its foundations when the original engines were installed. These were kept constantly at work, driven by five Lancashire boilers which consumed five tons and eighteen hundredweight of coal every twelve hours. The number of boilers later increased to nine. These were condemned in 1907, four removed and three new, larger boilers installed.

Thirteen years after opening, working continuously with little or no maintenance, much of the equipment was showing signs of wear. Supply difficulties were inevitable and additional plant was needed. A three-storey building was added and a tender by Jonah and George Davies of Tipton for supplying and erecting a 150 HP Cornish beam engine at a cost of £5,820 was agreed in 1871. This building and the engine are all that remain.

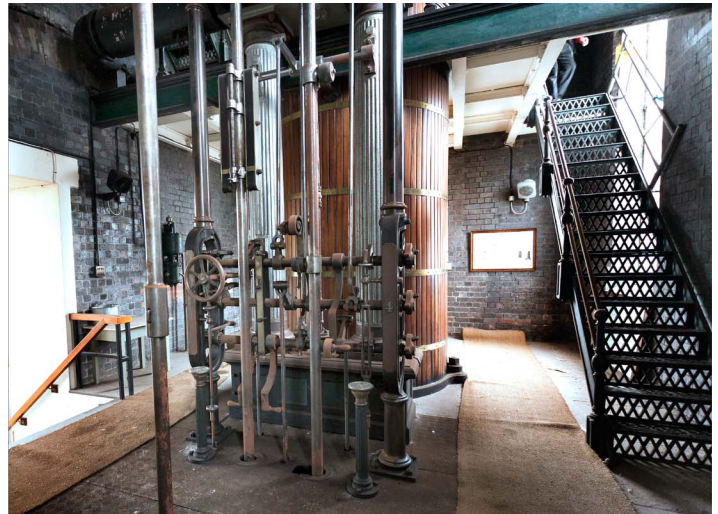
In 1923 work commenced on replacing the original engines and a filtration plant was installed. Two Sulzer horizontal uniflow steam engines were installed, each driving a horizontal centrifugal force pump and a DC electric generator providing 225 volts to power the well pumps and provide auxiliary power. The filtration plant was in a fine concrete building, alas now lost. The Davies engine was retired in 1927, eventually looked after by volunteers.

The station was fully modernised in 1966 with the construction of a new pump house on the site of the original engine house and the installation of new, electrically powered, pumping plant.

The pumps at Sandfields stopped for the last time in 1997 and in 2003 the site was sold to a housing developer, Persimmon Homes. The local authority was reassured with a Section 106 undertaking that the site would be protected and preserved. Instead, the grade II* listed pumping station fell into such disrepair it became 'at risk', neglected to the point where structural damage to the building was inevitable and, exposed to the elements and pigeons, the fine engine deteriorated rapidly.

This installation is important because it is a unique combination of an interesting building, a rare, locally made, Cornish beam engine and an intact archive of records detailing the complete history of the station and its engine. The **Lichfield Waterworks Trust** was established not only to protect the building and the unique engine but to maintain the priceless educational opportunity of telling future inquiring minds the water story.

Lichfield's clean water played a significant part in the wellbeing of the industrial community. The building and engine are an out-



TOP: The Cornish engine had a 65-inch steam cylinder with a stroke of 9 feet. An elegant Tuscan arcade of three arches with fluted columns supported the bearing for the beam, which worked a 17.175 inch ram and 25.625 inch bucket pump.

ABOVE: The beam floor; showing evidence of neglect. The beam had a 9-foot stroke and developed 190 hp at seven strokes a minute, pumping two million gallons of water per day with a delivery head of 355 feet on the force pump.

standing architectural feature in an area of uninspiring modern residential development. Although relatively small scale, it is one of the cornerstones of the water supply we now take for granted.

Stephen Sanders attended the TICCIH water conference in Barcelona supported by generous help from the Peter Neaverson Bursary under the auspices of the AIA.

ITALY

REDISCOVERED FACTORIES: INDUSTRIAL HERITAGE AND ARCHITECTURAL DESIGN

Exhibition at the Italian Institute of Culture, Santiago of Chile, 14 September - 27 December

Massimo Preite

Perception of the vestiges of past industrial activity in Italy (mines, factories, power stations, transport infrastructures, working villages, etc.) as cultural testimonies to be protected has been delayed in comparison with other countries, as has their value as heritage to be converted to new functions.

If the preserved heritage is not quantitatively comparable to that of the European countries with a more precocious industrialization (United Kingdom, Germany), there is, however, another area on which Italy holds good comparison with the best European experiences of redevelopment and recovery of industrial sites: the architectural quality of the interventions.

Born from this conviction, the Italian Institute of Culture of Santiago of Chile and TICCIH Chile promoted the exhibition Rediscovered Factories: Industrial Heritage and Architectural Design in Italy to coincide with the 2018 TICCIH Congress in Chile.

The exhibition is organized by the author (TICCIH Italy) and Gabriella Maciocco (Associazione Italiana per il Patrimonio Archeologico Industriale) with the collaboration of Luca Gibello (Giornale dell'Architettura). It aims to offer visitors a selection of the best projects for the reconversion of abandoned industrial sites and factories. In particular, the curators have tried to show the examples of greater balance achieved between preservation of the historical memory of places and their adaptation to new functions.

The exhibition proposes three different sections corresponding to the same number of interpretation keys for the presented projects:

- the first section, dedicated to large urban areas (Milan, Turin, via Emilia, Rome-Ostiense and the Venetian area), offers an overview of the role played by industrial heritage as a whole (and not as individual interventions) in urban regeneration processes of some of the main Italian cities;
- the second section, instead, compares, through a slide show, the images of the industrial plants before and after the transformation interventions; in this way it will be possible to evaluate to what extent the original identity of the buildings, subject to conversion, has been preserved by the implemented projects;



- in the third section, finally, the selected recovery experiences are represented on the basis of the new functions assigned to the rescued industrial buildings (museums, universities, schools, residences, etc.); the purpose is to highlight the great flexibility of abandoned factories to carry out activities, often radically different from those for which they were originally conceived.

The exhibition has been selected by the Italian Ministry of Culture (MIBACT) for its inclusion in the official calendar of events sponsored by the Ministry for the celebration of the European Year of Cultural Heritage 2018.



A 1930s picture of the White Bridge using barges in the constructing process.

IRAN

THE WHITE BRIDGE OF AHWAZ

Hasan Bazazzadeh, Jundi-Shapur University of Technology and Mohsen Ghomeshi, University of Tehran

Less than fifty years after the Brooklyn Bridge, the piles of the world's fourth suspension bridge was firmed in Iran. Ahwaz is the most important city of the south and the pioneer city in industrialization of Iran. The White Bridge of Ahwaz is considered the most significant monument of the city, which no visitor would miss.

In the 19th century, Ahwaz was no more than a small borough inhabited mainly by Sabeans and some other local ethnic groups. In the 1880s and under Qajar rule, the Karun River was opened to commerce. A newly built railway crossed the Karun at Ahwaz in 1929, the Black Bridge (see TICCIH Bulletin #80) and the city

again became a trading crossroads, linking river and rail traffic. Besides, oil was found near Ahwaz in the early 20th century and the city once again grew and prospered as a result of this newfound wealth. In that situation, the better the infrastructure built, the more comprehensive the industrial development. In 1933 the city managers asked for a bridge and in 1934 the Swedish company Svenska Entreprenad Aktiebolaget (SENTAB) was hired to develop Iran's first suspension bridge over Karun River; this company was supposed to do all the engineering test for designing. All the needed materials were bought from Stockholm.

A German engineer held the responsibility and designed a bridge in order to connect the old parts to new districts of the city. Along with his wife, he started the project and successfully progressed the work up to mounting one of the bridge's arches, but Englishmen who ruled an oil company at that period recaptured apparatuses which had been delivered to SENTAB, among them a crane which lifted the bridge's first arc, and this sabotage caused the German engineer a severe disease and his death. But after a short time his wife using very initial devices such as local barges,

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The White Bridge in these days.

succeeded in mounting the second arch on the bridge structure. The bridge was accomplished finally on November 9th, 1936.

White Bridge is a suspension bridge 501.20 m in length, 13 m high and 9.08 m wide, constructed with two great 130 m arches. The color of the bridge is grey but everyone calls it the White Bridge to contrast it with the Black Bridge.

White Bridge stands on a concrete foundation. It has two concrete arches, two sidewalks, while two huge arcs each more than 130 meters are shaping the main form of the bridge, these two steel arcs can be seen as the most representatives of this engineering masterpiece. All the segments are joined by bolts and rivets and the main structure is built out of steel.

The structure was delivered to Ahwaz managers in 1936 with 24 months of warranty and an expectation of 50 years of service life. Hence some restoration work was done in 2010 by Ahwaz

municipality. In order to conserve the bridge the road has been become a one-way path. The bridge was registered in national cultural heritage list in 1999 as number 2493.

Nowadays due to the significant role of the bridge in history of Ahwaz and the picturesque view, the White Bridge of Ahwaz is truly known as the most famous symbol of the city. The bridge receives adequate maintenance by the municipality and other in-charge organizations. The bridge is lighted at nights and people enjoy its sidewalks as a common hobby. There are numerous pictures of people posing in front of the bridge, official stamps and emblems, local interests and architectural motifs inspired by the White Bridge icon.

Contact the authors [Hasan Bazazzadeh](#) and Mohsen Ghomeshi

NAMIBIA

OLD ROMMEL DIESEL POWER PLANT - WAITING FOR IDENTIFICATION

Judith Fait

Old Rommel is an air-cooled 7-cylinder diesel in-line engine sitting dormant in the Powerplant No. 1 at the Tsumeb/ Namibia industrial heritage site. Its purpose was to supply electrical power to the underground works and probably also for the long conveyor at the of the famous copper mine. Today, its space is still labelled as Rommels den and dwarfs the remaining equipment with its sheer size and powerful appearance.

Up to now all efforts to find a specification plate which would

identify its manufacturer have met with no success. Old Rommel is surrounded closely by protective grating on three sides. The space is so narrow that it does not allow even a petite person to slip between the generator and the grid. The steel mesh guard is bolted to the ground and cannot be removed without heavy equipment- which is not at hand, anyway. To further complicate matters a coat of green paint was slapped on the engine's visible surface and obviously it also underwent improvised repair work over time. Thus the thermometers are all unequal and the bolts securing the maintenance openings are of a varying type. The outer casing is distinctively divided into two pieces: One for three cylinders and the other one for four cylinders, see details image 2.

From the mines' history it is known that the engine was a replacement for a KHD generator built in 1939. Unfortunately, the company's records were cleared out twice due to changes of ownership and today no one can exactly recall when the engine had arrived and was put in operation.

WORLDWIDE



After three decades of downtime and neglect the generator still seems to be in good shape and the Tsumeb Industrial Heritage Association would like to revive this handsome mechanical veteran.

Rumour has it the American Newmont company which had taken over the Tsumeb mining and smelter operations in 1947 acquired an old submarine engine. Indeed, the Dutch UD-3 submarine which had been captured by German forces in 1940 while still in dock was equipped with a Sulzer-de Schelde 7-cylinder diesel engine. Enquiries sent to the archives of the relevant manufacturers such as MAN, Sulzer and Wärtsilä did not result in helpful proposals.

None of the former employees can remember why this compact and robust looking generator was named after a German general and military theorist. Which characteristics might link a generator to a WW2 field marshal who initially successfully conducted a campaign in northern Africa but run out of luck later? The rumbling noise it makes during operations? The ability to adapt rapidly to circumstances far beyond any initial intention?

The former power plant is a rare and fine specimen of early African industrial architecture and its dormant inhabitant is still a mystery unsolved - could anyone please point us into the right direction?

[Contact the Author](#)

HISTORIC RAILWAYS, CONTINUED

lines on social (workers' culture, gender, urbanization process, social memory) and economic subjects (companies and transportation). On the other hand, history and heritage studies have been mostly interested in institutional or disciplinary related topics, as well as in national sources of information, showing a strong lack of thematic interchange, debate and use of international sources. In view of the foregoing, and considering the expertise gathered, we may say that we are facing a good time in Brazil for new researchers to go deeper in their investigations on railway history and heritage from a multidisciplinary perspective and with a new global outlook.

These publications provide further information:

Oliveira, Eduardo Romero de, "New studies in the History of Railway Transportation in São Paulo," in: *Mobility in History: Yearbook of the International Association for the History of Transport, Traffic and Mobility*, New York e Oxford, [s.l.]: Berghahn Books, 2014, p. 96–104.

Cano Sanchiz, Juan Manuel, "Energy and Railway Workshops: An Archaeology of the Fepasa Complex (Jundiaí, Brazil)," *The Journal of Transport History*. First Published May 2, 2018.

INDUSTRIAL MUSEUMS



National Museum of Industrial History. Thanks to many private donors and a 4.5 million dollar RACP grant from the Commonwealth of Pennsylvania, the Museum was able to begin restoration of the building. Photo: Glenn Koehler/NMIH

U.S.A

THE NATIONAL MUSEUM OF INDUSTRIAL HISTORY

Mike Piersa, Historian, National Museum of Industrial History

The National Museum of Industrial History was envisioned in the mid-1990s by the Bethlehem Steel Corporation as the firm was contemplating how to responsibly close and reuse their historic Bethlehem, Pennsylvania, steel mill. Bethlehem Steel came to an agreement with the Smithsonian Institution to lend their collections and expertise to the future museum, which would be developed as an independent non-profit. The Museum building and 25,000 square feet of outdoor space immediately to the east of the Museum were donated by Bethlehem Steel. The location was selected because it offered immediate access to 3rd Street, the "Main Street" of South Bethlehem. At this time, the rest of the steel mill was fenced in, making other locations deeper in the mill impractical. The 20,000 square foot former Electrical Repair shop,

built in 1913, would require significant repairs before it could be used as a Museum. Many windows were bowed out and broken, the floor was torn out, and environmental remediation was required.

NMIH became the first Smithsonian Affiliate and made plans to move approximately 100 Smithsonian artifacts to Bethlehem. The timing was fortuitous because the Smithsonian was getting ready to shut down their recreation of the 1876 Centennial Exposition. The display featured a machinery hall with operating stationary steam engines and a lineshaft driven machine shop and wood-working shop, among other pieces. Had it not been for NMIH, most of this equipment would likely still be in storage to this day.

The Museum was intended to be a cornerstone and kick-starter to the larger BethWorks redevelopment project. This proposed facility would have taken the historic core of the Bethlehem, PA, plant of Bethlehem Steel and converted it into a retail, entertainment, and history hub. Disney was approached about being involved in the project, with ideas floated such as giving rides on the ore trolleys on the Hoover Mason Trestle and taking visitors on a journey through the inside of a blast furnace. An Iron and

INDUSTRIAL MUSEUMS

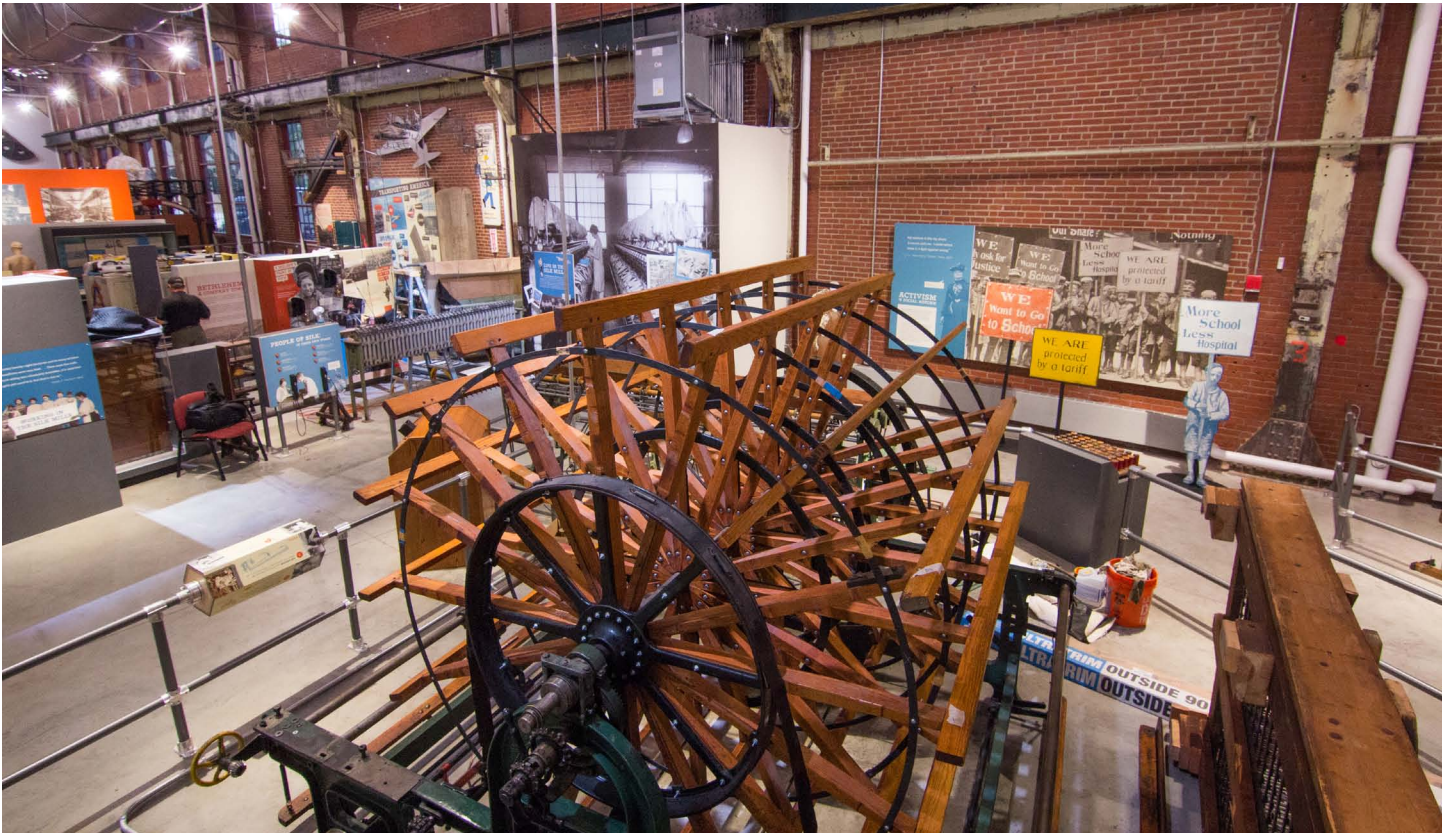


Photo: Glenn Koehler/NMIH

Steel showcase would have preserved and encompassed various iron and steel making facilities. However, with the bankruptcy of Bethlehem Steel in 2001 and sale in 2003, the redevelopment plans were placed on hold. The uncertainty over the future of the site surrounding the Museum made potential donors apprehensive and delayed progress. In 2006 it was announced that Las Vegas Sands Corporation would build a casino on part of the site and work towards developing the rest of the property in a manner approximately consistent with the original BethWorks vision. As of today, one other historic building on the BethWorks site outside of the Museum has been rehabilitated and a High Line style linear park/walkway constructed on top of the Hoover Mason ore delivery trestle in front of the blast furnaces. An arts and concert complex known as SteelStacks has been built at the core of the complex. The plant office building adjacent to the Museum has continued to be used and currently houses a campus of the local community college.

With the surrounding landscape relatively secure, the Museum forged ahead, receiving additional private support including 40% of the proceeds of a Bethlehem Steel indemnity fund that was expiring and due for distribution since it was never used. While the roof and windows of the Museum building were replaced in the 2000s, it was not until 2015 that the first artifact was installed and the floor was poured. Climate controls brought the facility

up to modern museum standards. The Museum opened on August 2nd, 2016. The first permanent exhibits consisted of the Centennial themed Machinery Hall, Iron & Steel, Silk, and Propane. A temporary exhibit gallery was added and has featured displays on 3D printing, the Bethlehem Steel baseball team and baseball manufacturing, and is currently featuring an interactive print and paper making exhibit. Upcoming exhibits include the annual gingerbread bridges and skyscraper competition, industrial art exhibitions, and Forging Community, an exhibit about the stories of the immigrants who came to work in Bethlehem. Planning is underway for a radio exhibit that will be up for most of 2019.

It is anticipated that the Museum will expand to the second floor of the building and the outdoor park as funding allows. Work is already underway on a short 36 inch gauge railway that recreates the diesel powered charging trains used in Bethlehem Steel's Open Hearth and Electric Furnace Melt Shops. Mining and steel making equipment already on hand will allow visitors to see key processes from raw material to finished product. Gallery enhancements, changing exhibits, and new collections are consistently being evaluated and added.

CONFERENCE NEWS



Visited by Mao Tse-tung when it was the Shanghai No. 1 Steel Factory, one of the two blast-furnaces at the Bao Steelworks, with an integral large casting-house, is to be retained as a museum of the Chinese Steel Industry.

CHINA

URBAN TRANSFORMATION THROUGH ART, MAY 11-12, SHANGHAI ACADEMY OF FINE ARTS (SAFA) SHANGHAI UNIVERSITY

Stephen Hughes, TICCIH Secretary

This conference concerned the regeneration of industrial structures using the creative arts and sciences as an economic motor for re-purposing large building complexes. TICCIH was asked at short notice to give its support for the conference and to send a delegate.

The first session 'The Rejuvenation of the Industrial Heritage' was chaired by the Dean of SAFA, Fung Yuan. He explained that the conference was designed to inform the creation of an International Art City at the Bao steelworks site at Shanghai which was presently being closed and moved out of the city. A portion of the large ranges of the cold rolling-mills is intended to be kept as

a sports hall. There have been many project entries on how to transform the vast hot-rolling mill into a new arts campus with varying success in proposals to keep a portion of the structural elements of the complex.

Stephen Hughes retraced the long history of industrial buildings re-used for arts purposes. For example, a dockside corn-warehouse in the Port of Aberystwyth, the town where TICCIH is registered, was converted into a theatre as long ago as 1813 (and has subsequently had two further re-uses). The first major re-purposing of a redundant industrial complex for arts use in Britain may have been by the composer Benjamin Britten, who transformed the 1854 Snape Maltings into a concert hall in 1967. The largest re-use of an industrial complex for arts purposes in the USA is in the 1918 Alexandria Torpedo Factory in Virginia. No less than 82 artists' studios, seven galleries and two workshops used by 167 artists have been formed.

Both TICCIH's Nizhny Tagil Charter of 2003 and the TICCIH-ICOMOS Joint Principles of 2011 provide international guidelines on the re-use of buildings. If machinery had to be removed it should be recorded first. Re-use should maintain the integrity of an industrial complex. One of the world's oldest (1895) arts biennales in Venice has since 1980 enabled the restoration of the Arse-

CONFERENCE NEWS

nale, once the biggest industrial complex of the Medieval period, into an arts exhibition space.

In China, the Area 798 Project in Beijing involved an artists' cooperative turning a proposed large-scale redevelopment into an extensive area of artists studios and galleries. This was so successful in attracting an audience to an area including German designed Bauhaus-style factories that many artists have since been displaced by commercially-based ventures, raising the question of how permanent arts re-use functions are.

Subsequent conference sessions were on 'Art, Industry and Audience Attraction' and 'Art in the Age of Super-abundance.' Michael Bhaskar explained the latter notion. In the last four years in China alone there has been an equivalent growth to that over 500 years in Europe from the Medieval period. There are currently 562,382,292 products available on Amazon.com, which somehow have to be sifted to make an informed choice from the vast range of new books and information now instantly available because of the use of the internet.

In the concluding round table discussion it was noted that artists break boundaries in moving away from material to cultural consumption. Michael Bhaskar explained the rise in Artificial Intelligence integral with pioneering robotics, especially in the USA and China. All industrial tasks will disappear and the economy of the next 100 years has to be re-invented so that at least some aspects of human employment continue to grow and thrive.

Frances Medina explained how one of the now 238 arts biennales held globally had been organised around the area of Limburg in Germany, where old coalmining buildings were used and the views of a very diverse industrial community reflected. The last session of the conference was entitled Urban Aesthetics: Ask the City what Matters! Andrew Brewerton, Principal of Plymouth School of Art, noted that one in eleven jobs were now in the creative arts. In the UK the sector is worth £91.7 billion and growing at the rate of 7.5%. 87% of art jobs were at low risk of automation.

TAIWAN

PREPARATORY WORKSHOP AND 2018 TAIWAN INTERNATIONAL FORUM ON WATER AND HERITAGE FOR THE COMING WATER AS HERITAGE INTERNATIONAL CONFERENCE

Hsiao-Wei Lin, Assistant Professor, Chung Yuan Christian University, Taiwan, TICCIH Board member

The Water-as-Heritage International Conference will take place in Taiwan in May 2019. It is part of a series of activities aimed at better connecting heritage organisations and wider water sector industries, regional interests, and communities.

The Conference is the third in a series concerned with the broad topic of 'Water and Heritage for the Future'. The previous conferences took place in Amsterdam (2013), Delft (2016) and in Delhi, India, in December 2017. A key objective of the Water-as-Heritage Conference is to bring together water-focused organisations (NGOs and government agencies, for example) and heritage groups with a concern for water-related heritage (ICOMOS and IUCN, for



Representatives at the 2018 Taiwan International Forum on Water and Heritage (Photo: TIIVE conference archive)

example) in order to develop networks and build working relationships across the diversity of sectors and disciplinary fields.

Members of TICCIH are welcome by the Program Committee of the Water-as-Heritage International Conference to contribute on envisaged outcomes of the international conference include agreement on research themes (scopes and research questions as well as expected outcomes), interest and signing up to research clusters, and support for a Charter for the International Scientific group on Water and Heritage for the Future.

CONFERENCE NEWS

ITALY

GENERAL STATE OF INDUSTRIAL HERITAGE CONGRESS, 25 - 27 OCTOBER 2018, VENICE AND PADUA, ITALY

The Italian Association for Industrial Archaeological Heritage, AIPAI, is organising a three-day event to discussion and debate industrial heritage as an essential part of a common heritage culture, from national and international points of view, together with the Masters course Techniques, Patrimoine, Territoires de l'Industrie (TPTI), the European Route of Industrial Heritage (ERIH) and Industrial heritage, cultural resources of current industries and creative pioneers Inducult 2.0, within the European Year of Cultural Heritage 2018. Languages: Italian, English, French, Spanish, Portuguese.



Abstract proposal guidelines: www.dissgea.unipd.it/convegno-aipai-2018-stati-general-del-patrimonio-industriale

Contact: patrimonioindustriale2018@gmail.com

MEXICO

FUNDIDORA MONTERREY: INDUSTRIA, PATRIMONIO Y MEMORIA, 9 - 11 MAY

Humberto Morales, Autonomous University of Puebla, Miguel Angel Alvarez, TICCIH España and INCUNA President, and Camilo Contreras, Head of La Carbonífera Project

This contribution comes from the experience of an academic event in a historic place of steel production, to the involvement of the sites from which the extraction of raw materials such as mineral coal. Between them they measure more than 300 km in northeastern Mexico.

Fundidora de Monterrey (1900-1986) left its mark in the now Fundidora Park. the conference was in memory of the first integrated steel company of Latin America and its workers, in conferences such as heritage and industrial landscape; working-class remembrance, preservation, conservation, and restoration; art and industry, industrial archives; among other topics. The event took place in what was the emblematic school for children with parents that worked at the mill, the Adolfo Prieto School founded in 1911.

The annual Congress aims to grant the meaning of industrial heritage to what we know now as Fundidora Park, that occupies 142

hectares with elements such as sheds, chimneys, a blast furnaces, gardens decorated with locomotives and other machines of the old mill.

The master conferences in charge of the authors emphasized in the need to convert Fundidora Park from a theme park to a true Ecopark that honors the memory of the workers and the remains of the factory that brought forth the industrialization of Northern Mexico at the beginning of the 20th century. The event was distinguished with the participation of former workers in a special conference to bring up their experiences while the great industrial work was still operational. Moreover, a set of Northern industry photographs was displayed, and to the surprise of the attendants a live demonstration of forge and smithy was set up.

The Congress culminated with guided tours to three historic and international places of relevance: The Horno3 museum of steel, the Ternium steel mill, and the 1890 Cuauhtémoc-Moctezuma-Heineken brewery. The achieved objectives and the expectations inspire us not only to hold the event next year, but to convene the participation of colleagues beyond the national borders.

Just the following day we continued the work in the coal basin of Coahuila. Its main goals were to show to the invited colleagues the richness of the mineral industrial heritage including the working-class remembrance around mining; as well to incentivize the population with talks and conferences to recognize and preserve the mining linked heritage.

This basin supplied the mineral coal to the main steel companies

CONFERENCE NEWS

of Mexico, including Fundidora of Monterrey since the final years of the 19th century. It continues to be the only coal production region to this day. The tour allowed us to appreciate the mining landscape composed by mines, chimneys, furnaces, terrains, living complexes, union buildings, theaters, churches, etc.

We were surprised to find painful marks, or what we can call dissonant heritage: the installation of crosses in memory of the miners that died while doing their job. The main cause of this memorial was the tragedy of the Pasta de Conchos mine in 2006, where 65 workers died, of which only two bodies were recovered. Our intense tour concluded in the third day when in front of 300

teachers and students of the Instituto Tecnológico de la Región Carbonífera, we shared the findings of the research and the management of the industrial heritage of Mexico and the world. Our learning of the region through interaction of the landscape, their old workers, as well as the new generations inspire us to imagine projects where institutions and people of different countries worried about industrial heritage cooperate. The group of explorers thanks the hospitality of the region, as well as the help and guidance of Ramiro Flores and Melesio Mendoza.

TICCIH NEWS

SHAPE TICCIH'S FUTURE: 2018 ELECTIONS

Stephen Hughes, TICCIH Secretary

Elections will be held to determine the President and Board of TICCIH for the next three years at this September's TICCIH congress in Santiago de Chile. You will be able to find information on National Representatives on the TICCIH website. Any paid-up member of TICCIH can stand for the TICCIH Board, to help guide and develop the organisation across the three years between congresses. It is very easy to attend Board meetings as most are held virtually over the Internet. They are at least once and usually several times a year, sometimes also at a convenient TICCIH, ICOMOS or other conference or meeting.

Candidates need to be nominated and seconded by two other currently paid up members. Nomination forms will be issued shortly to all National Representatives and nominations can be made not less than fourteen nor more than thirty-five clear days before the date for the meeting (that is between Friday 10 and Friday 31 August). Nomination forms can also be obtained directly from the TICCIH Secretary.

The present TICCIH President, Professor Patrick Martin, has served three consecutive terms and so is not eligible for re-election. According to the TICCIH statutes, presidential candidates should be an active member of the TICCIH Board. TICCIH has a maximum of fourteen, one third (i.e. 5) of whom must retire at each General Assembly although they can stand

for re-election. Nomination forms can be obtained from the Secretary.

The following four Board members were first elected at Freiberg in 2009 and are due to step down, though they can be re-elected: Hsiao-Wei Lin of Taiwan, R.O.C.; Professor Massimo Preite of Italy; Dr. Iain Stuart of Australia and Patrick Viaene of Belgium. There may be more vacancies as not all the Board members have confirmed with the Secretary if they want to continue or not.

All National Representatives are entitled to vote, so it is very important that members contact their National Representatives to discuss potential candidates, but also to state their preferences once the candidates are known. This is a great opportunity to influence the future of TICCIH, and to ensure that it has the drive and energy to tackle the challenges facing our organisation over the coming years.

Note to national representatives regarding voting by proxy: If you are planning to have anyone else voting for you at the TICCIH General Assembly in September you need to obtain a Proxy form from the TICCIH Secretary at secretary@ticcih.org and return it signed & scanned to the secretary by Thursday 30 August.

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

PUBLICATIONS RECEIVED

Change Over Time Issue on “Landscapes of Extraction”

Change Over Time is a semiannual journal publishing original articles on the history, theory, and praxis of conservation and the built environment. Each issue is dedicated to a particular theme. Our most recently published issue, Landscapes of Extraction, is now available. This issue examines how we perceive and engage with what is quickly becoming a complicated eco-industrial heritage legacy, providing a valuable contribution to the broadening discourse over how we reintegrate and ultimately conserve our landscapes of extraction.

Among the oldest of technologies, the extractive industries involve the removal and processing of raw materials from the earth for energy and manufacturing, and by the early 20th century their global scale of operation transformed entire regions and markets as well as large areas of the earth's surface. This legacy also created the most far-reaching of all global transformations: climate change. Today many of these industrial centers are obsolete and abandoned but rich in historical value as the intersection of geol-



ogy, technology, and culture. They are part of a complex landscape that now demands consideration of its latent architectural, ecological, and socio-cultural assets.

COMING SOON

2018

FRANCE

ICOHTEC 45th Symposium, 17-21 August, St Étienne
icohtec.org

CHILE

XVII TICCIH Congress, the first in Latin America
13 and 14 September: Congress, Universidad Central de Chile, Santiago.
15 September: Closure and Visit to Sewell World Heritage Site.
patrimonioindustrial.cl

IRELAND

World Canals Conference
10-12 September, Athlone.
wccireland2018.com

COMING SOON

SPAIN

Resilience, Sustainability and Innovation, XX International Conference on Industrial Heritage, 29 September, LABORAL Ciudad de la Cultura, Gijón.

Conference Technical Secretariat at incuna@telecable.es.

incuna.es

I International Film Festival about Industrial Heritage and Cultural Landscapes (INCUNA IFF 2018), material and immaterial industrial heritage through films, 20- 23 September.

incuna.es

CZECH REPUBLIC

Creators of Industrial Buildings, Research Centre for Industrial Heritage of the Faculty of Architecture, September. Czech Technical University in Prague. *Symposium to define the international context of industrial heritage buildings in the region.*

vcpd.cvut.cz/symposium-2018/

TURKEY

Corporate Museums, Annual Conference of ICMAH (International Committee for Museums and Collections of Archaeology and History), October 10-12, Istanbul,

network.icom.museum/icmah

2019

POLAND

Big Stuff 2019: Preserving large industrial objects in a changing environment, 12-13 September, Katowice, Upper Silesia.

Contact [Piotr Gerber](#)



THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF INDUSTRIAL HERITAGE