



TICCIH



THE INTERNATIONAL
COMMITTEE FOR THE
CONSERVATION OF THE
INDUSTRIAL HERITAGE

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Cheer-up Sado (Island) T-shirt (photo by author)

MESSAGE FROM YOUR PRESIDENT

THE TICCIH 2025 WORLD CONGRESS IS ONLY A YEAR AWAY!

Miles Oglethorpe, TICCIH President

—

This report comes to you as I continue to digest the outcome of an excellent trip to Kiruna (Sweden) with Secretary General Marion Steiner, during which we worked with the team organising the TICCIH 2025 World Congress. We are very grateful to them for organising a really successful planning mission and are hugely excited by the prospect of an outstanding **TICCIH World Congress** next year.

As you all should know by now, this will occur from 25 to 30 August 2025 in Kiruna. We were hugely impressed by what is a well-equipped venue with associated quality hotel accommodation, the city’s extraordinary setting and the unique mining heritage in its surrounding region. It also proved remarkably easy to get to by air, but there are alternative travel options, notably by rail. The programme is shaping up well, and there will be some exciting pre- and post-conference tours

ON THE COVER: General Blumenthal/Shamrock XI during demolition, Herne, 2012, Germany (photo by Niels Kürstner)



Kiruna, iron-mining landscape, August 2024 (photo by author)

as well as visits during the main programme. So put the congress into your diaries and watch out for news as preparations progress.

The congress will also incorporate TICCIH's next General Assembly, so preparations have begun to compile the agenda, including elections for positions on the Board and modernising our statutes. We will be looking for people who are prepared to be nominated, so don't be shy! We will also celebrate TICCIH's half-century, so our 50th Anniversary will be an important part of the programme. Equally, we will further strengthen the National Reports, building on the success of the amazing sessions in our last two congresses.

As I write, **the next call for papers and sessions** is being issued, and the topics have already evolved to reflect the responses received so far. I was especially pleased to see that industrial World Heritage sites have been added as a key theme for us. We look forward to receiving more submissions in the coming weeks and months.

Reasons to be Cheerful - Congratulations to Sado Island!

Back in 2010, I was immensely fortunate to be invited by the World Heritage Team in Niigata, Japan, to attend a conference in Sado Island held in support of its nomination as a UNESCO

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 on Industrial Heritage, promoting its research, recording, conservation and dissemination and education on industrial heritage. It holds a triennial conference and organises interim conferences on particular themes. Individual membership levels range from \$10 to \$40 (USD), corporate membership is \$65, and student membership levels range from \$5 to \$10.

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

The **TICCIH Bulletin** is the only international newsletter dedicated to the worldwide conservation of the heritage of industrialisation, and is sent direct to members four times a year. The Editor welcomes all news, critical comment and articles related to our field. Everything published in the Bulletin can be accessed in a searchable [Articles Index](#) on the TICCIH web page.

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

World Heritage Site. The application process was already well advanced then, but for reasons beyond their control, it took another fourteen years before the dossier was finally put before the World Heritage Committee at its 2024 session in New Delhi, India. During my visit in 2010, I was given a T-shirt bearing the slogan, 'Cheer Up Sado', which I have cherished ever since.

So, I am especially delighted to be able to pay tribute to our friends in Niigata and congratulate them on finally getting Sado Island inscribed onto the World Heritage List. This is well deserved and long overdue, and to celebrate, I have been wearing the lovely pink T-shirt in their honour!

UNESCO South-East Asia

Another reason to be cheerful is that in August, UNESCO organised a training programme in Bangkok on 'Tentative List Updating and Harmonisation' for South-East Asia. The programme incorporated a webinar and then a series of sessions with trainers and mentors. I mention it because they chose to include industrial heritage as a theme and invited me to contribute.

As is usual in such circumstances, I think I learned much more than anyone else, and in the process, I met some amazing people from many countries in the region, including Lao, Vietnam, Cambodia, Timor-Leste, Thailand, Malaysia, Indonesia, Singapore, Brunei and the Philippines. In the case of the latter, I am especially grateful to Ivan Anthony Henares for flying the TICCIH flag with great enthusiasm. With his help, I am hoping that in the coming years, we will be able to make many new friends and raise awareness of the region's extraordinary industrial heritage. I feel another exciting conference is on the cards!

Check all the updates on the [Kiruna Congress homepage](#) and save the dates:

- Deadline of call for sessions: November 1, 2024
- Registration opens February 1, 2025
- Congress: August 25 – 30, 2025

OPINION

TICCIH AND A SUSTAINABLE FUTURE – THE URGE FOR A TICCIH SUSTAINABILITY POLICY

Jan af Geijerstam

Industrial heritage is a source of knowledge that explores and conveys important lessons from history. This has gained deeper relevance in our time when the climate crisis and threats to the environment and natural diversity pose some of humanity's greatest challenges. Everyone, from nation-states to organisations, companies, and individuals, must begin to reduce emissions and environmental impact. Although this sometimes requires difficult choices and sacrifices, our decisions today will be crucial for the future.

Today's overwhelming scientific evidence shows that human activities have caused climate change during the industrial age. In the face of steadily recurring news of rising temperatures, natural disasters, famine and human despair, TICCIH must develop a policy for zero emissions and ecological sustainability. This is all the more fundamental since TICCIH is the global organisation that safeguards, conserves, investigates, documents, and researches all aspects of the world's industrial heritage. Industrial heritage is a concrete reminder of how industrial society and industry have changed the conditions of life on earth in a way that has given the epoch a unique name in the earth's geological history, the Anthropocene. The heri-

tage of industry and industrial society bears witness on many levels to how humans cause our life-changing challenges.

Climate and environmental issues are directly linked to industrial heritage. Not only because industrial society is the primary cause of the climate crisis but also because ongoing climate change poses immediate threats to industrial heritage and, more importantly, for the future. It can give us new knowledge of human ingenuity and offer solutions to cope with the ongoing threats of our familiar world.

An environmental policy must also be lived

TICCIH's sister organisation, ICOMOS, has conducted extensive sustainability work in all parts of the organisation. In 2018, ICOMOS established a special working group that presented a Responsible Practice Toolkit; in 2020, ICOMOS declared a climate emergency during its 20th General Assembly, which was held digitally during the pandemic; and in 2023, ground-breaking work was done to translate ICOMOS' sustainability goals into practical operations at its 21st General Assembly in Sydney. The work of ICOMOS provides important tools and lessons for TICCIH.

The first part of ICOMOS' Responsible Practice Toolkit is the carbon reduction strategy, which ICOMOS' Board adopted in September 2023. The strategy's introduction summarises the background and goal: "The necessary scale of carbon reduction can only be achieved through global consolidated and immediate efforts. Therefore, everyone, from nation-states to non-governmental organisations (NGOs), companies, and individuals, must immediately start



UN sustainability development goals. The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership.

reducing emissions. We must responsibly reduce the carbon footprint of ICOMOS travel, organisation, technology, and administration internationally and at national and scientific committee levels. While this may sometimes require difficult choices and sacrifices,

the benefits of inclusion, diversity, and a more just transition are immense. The decisions that non-State actors, including ICOMOS, make today will determine the possibilities of tomorrow.”

Another part of the working group’s report series is the Responsible Meetings & Events Checklists, which include checklists for sustainable conferences and meetings and the ICOMOS carbon calculator.

The Responsible Meetings & Events Checklists aim to help “ICOMOS members at all levels effectively reduce carbon emissions by adapting travel and meeting practices, and special attention is being put into the possibilities of digital meetings. The report contains detailed guidelines and checklists for different types of meetings. It summarises that “The need for balancing environmental concerns (reducing carbon emissions), social inclusion, and human contact calls for careful consideration of meeting alternatives.”

As also noted, digital meetings can enable more people to participate in or actively engage in the work of a global organisation. Not least, TICCIH’s congresses have been plagued by a significant skew among the delegates favouring Europe and North America. The reasons are often economic, and online solutions could contribute to realising TICCIH’s goal of being the global organisation that Marion Steiner described in her programme statement in the TICCIH Bulletin (no. 98, 2022): “...we want TICCIH to go ever more global. In particular, we want to integrate and learn from the viewpoints of colleagues from the so-called global South regarding climate change, global justice, female and decolonial approaches to the interpretation, conservation, and management of industrial legacies.”

ICOMOS carbon calculator – climate compensation and air travel

The third document from the working group, the ICOMOS carbon calculator, aims to be “a guide for members in the choice of travel,

TICCIH 2025 Kiruna

Heritage in action



Earthrise. Photograph of the earth rising behind the moon. Photo shot by astronaut William Anders on December 24, 1968, in lunar orbit during the Apollo 8 mission (photo by NASA)

accommodation, and food choices both at committee and individual levels.” The document contains links to tools for calculating the climate footprint for all parts of a conference, not least the air travel to and from the conference.

However, the General Assembly’s organisers left the issue of climate compensation to the individual participants or their organisations, although the travel to and from the congress probably constituted the most significant climate imprint.

It should also be noted that climate compensation is the next-best alternative to avoid air travel altogether. Many models for calculating emission loads and climate compensation are also directly linked to the aviation industry. The calculator recommended by the International Civil Aviation Organization (ICAO), which ICOMOS recommended, only considers the pure CO₂ emissions caused by burning kerosene. However, the total climate warming effect could be as much as three times bigger. This has been observed by the

IPCC (the United Nations Intergovernmental Panel on Climate Change). Several alternative calculators more accurately calculate the climate imprint.

In conclusion, experiences and guidelines from ICOMOS work provide practical tools for TICCIH in the urgent work of developing a policy for zero emissions and ecological sustainability.

More than half a century ago, in 1978, TICCIH’s statutes were adopted, and TICCIH was formally established at the third international industrial heritage conference in Stockholm. This is a legacy to honour. Similar ground-breaking decisions can be made at the 19th TICCIH Congress in Kiruna 2025 regarding the adoption of a TICCIH policy for zero emissions and ecological sustainability.

[Contact the author](#)

Check all the updates on the [Kiruna Congress homepage](#).

FIND TICCIH ON SOCIAL MEDIA:



CHILE

“REPAIR” IN ICOHTEC AND SHOT 2024 CONFERENCE IN CHILE. WHAT’S NEW FOR TICCIH IN IT?

PD Dr. Roman Hillmann, Deutsches Bergbau-Museum Bochum

Industrial Heritage Conservation and the History of Technology have a specific link: old industrial plants or products largely become industrial heritage because they are valuable testimonials of technical and technological facts. Also, the second ‘C’ in TICCIH, Conservation, is technology. The perspective of a history of technique contributes to better understanding, preserving and promoting industrial heritage.

I went to Chile for the joint international conference of the International Committee for the History of Technology (ICOHTEC) and the Society for the History of Technology (SHOT) in July this year for two reasons: First, to be an ambassador of heritage conservation themes. Secondly, to be in the southern hemisphere for the first time in my life and to visit a conference that succeeded in a good representation of the global south. It was an important experience, and one thing came to my mind that amazed me when I flew the 12.000 km to Chile: the sun in Chile goes counter-clockwise, while in Germany, where I live, it goes clockwise. It is so different to see the sun going the exact opposite! But, more importantly, it is normal. Difference is normal.

The conference lasted five days and showed how many worldwide themes are almost all linked to ‘repair,’ the central theme. It made clear how many different traditions of repair there may be. In Mexico, for example, repairing goods from the US was a huge business when repair was still considered bad in northern hemisphere industries (*Talk of Diana Montaña*). Repair in the south of Germany could mean mending porcelain or stoneware goods with precisely bent ribbons (*Talk of Helene Eisl*). In pre-colonial Nigeria, traditional silencing herbs have been used to be able to keep mentally ill members of a family at home instead of later sending them into British “madhouses” (*Talk of Ifeoma Aneke*). In Chile, a German, Henrico Albert, stopped dunes to overrun the city of Chanco by planting certain plants on them. But viewing the woods of Chile as needing “repair”, he introduced the Eucalyptus tree that is today one of the main trees and also causing some problems (*Talk of Camila Salinas and others*).

This brought about the complexity of repair. I missed and did not hear a single session that got into the question of the relationship between repair and science. In conservation, we do not speak so much of repair because it is not a scientific word. Repair is perhaps more a general urge. We want long-life goods that are repairable and that have the infrastructure to do the actual work. An example from Japan pointed out that for the repair of clothes, one “needs a lot of hands doing the work” (*Talk of Aleksandra Kobiljski*). Repair



Valparaíso, Muelle Barón. Harbour crane from Germany by MAN, built in the second half of the 1960s and now preserved with the original lifting hook – repair in the scientific sense of industrial heritage conservation (photo by author)

is complex. How can it fit into industrial societies that try to avoid individual work by hand? The Kranzberg Lecture, always a central focal point of ICOHTEC conferences, was held this year by Sławomir Łotysz, talking about re-use and repair in medicine: “Reuse for health has strong therapeutically and ethical implications.” Take the example of re-using a penicillin factory that is not up-to-date. Is bringing older technologies to some countries even appropriate? Is this question easier to answer when otherwise you would not get penicillin in that country? Other examples? The dangerous re-use of one-way syringes is sometimes done for economic reasons, sometimes out of poverty. Pacemakers are often re-used because it’s quite simple to do. A re-used pacemaker has done good work for some time and is even better approved than a new one. This practice of re-use was introduced when a pacemaker exploded in a crematorium, partly destroying it. Re-use innovations may come from where you would not expect them! Often, they are hindered by regulations or ethics.

In the session I chaired, “About the history of Building Conservation Technologies”, we learned that the technique is considered strongly only in a few histories of conservation.¹ The session went



Valparaíso, Plazuela Anibal Pinto. The building is not only a beautiful example of “brutalist” architecture. It also is a counterweight to the cemetery behind it – a way to “repair” that seismically endangered hill (photo by author)

chronologically from the mere cultural idea of preservation to the actual invention of the preservation technique. This may be transferred to the question we have today. We want more repair practice, and the method for it may come out of the ethically founded industrial heritage conservation. We also may have put an object through conservation perhaps three times before looking at it as a source for historic facts. Technology and testimonials are thus closely related to each other! Let us write a technological history of Industrial Heritage Conservation, adding another perspective to

the wonderful TICCIH volume “Industrial Heritage Re-tooled” by James Douet from 2012!

Oriana Bernasconi focused on the history of repair in a broader sense. Bernasconi, from the Universidad Alberto Hurtado, started the conference with a talk about the incredible suffering of people who lost relatives or friends in the Pinochet Coup in 1973, which was remembered in some events last year, being 50 years past. The Human Rights Archives help survivors by remembering the facts. “Archives as a way

of caring,” as Bernasconi called it. This kind of political work is part of an important project to let survivors survive and see their relatives and themselves more as fighters than as victims.

This way of “repair” was present in a strong political sense in Chile: to de-colonialize the thinking and view, to look at marginalised populations and to understand the presence of colonialism and suppression in one’s thinking. The session “Mending the history of technology” had one talk about the perspectives in important textbook histories of technology and how they could be rewritten from a global perspective (*Talk by Anto Mohsin*). Will it be possible to write an international history of technology? SHOT edited special volumes about the history of technology in Africa and Asia.² But, even to try, is it not a form of overseeing others with one’s perspective? With this danger in mind, SHOT, ICOHTEC and TICCIH members must provide a worldwide perspective, as it is much better to have broader knowledge against discrimination in our economies and industries.

Awareness of the complexity of the issues is also the basis for a good balance between one’s feelings and the facts of history. The panel discussion “Transhemispheric Futures of the History of Technology”, organised and led by *Jason Ludwig* of Cornell University, got there. When Jenny Bulstrode found out about black metallurgists in Jamaica, enslaved from Africa, who had used innovative technologies of steelmaking later used in Coalbrookdale, this led to a huge discussion up until today.³ Inevitably, there are many emotions involved in telling an old story differently! Scientists interested in Bulstrode’s research had to fight through one of the typical scientific fights partly led by prejudices. Have we not all experienced such fights? But what if such fights must be fought by people marginalised in history? It hurts even more. On the other side, it hurts me to see what white men have done.

Still, like Bernasconi said, knowing and talking about knowledge opens themes up. Putting out truth and facts helps global understanding, especially when the theme of black metallurgists opens up an ever-so-strong perspective. They were deported from Africa and worked in Jamaica as slaves. But even when unfree, they have imported and invented important technological methods for mankind that were “new” and formed our lives. Only then did these worldwide inventions come into our awareness when they were tried in the northern hemisphere, practised, and published there. It reveals how many different people worldwide were involved in the same essential problems of steelmaking.

One theme I missed at the conference was climate change. It is threatening our lives, and the history of technology and climate

change are interlinked. As a tangible technological heritage, industrial heritage has information about the extinction of species and climate change because sites usually had a huge carbon imprint when in use. Industry and worldwide trade are also strongly connected with the wrong idea of exploiting, doing better than nature, doing better than other humans and just taking what you can get.⁴ Understanding our essential problems of today and trying to suggest ways out will mean interlinking the historical sciences and industrial heritage conservation:

- a transhemispheric view to understand the equality of man in industrial and world-trade histories,
- climate change as a form of Anthropocene that is everywhere in our thinking, actions, and industrial societies, but it is often put aside for other (also important) themes,
- the materially bound, tangible industrial heritage as a basis to our thinking and perception of the industry. Here, we find multifold repair traditions and innovations!
- I learned so much in Chile that I want to know more about it. Reading the CFP, there will be much about it at the TICCIH 2025 conference in Kiruna, Sweden!

Contact the author

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ANNOUNCING THE **BIG STUFF** CONFERENCE IN BELGIUM OCTOBER 2025!



© Martin Corlazzoli

The Museum of Industry in the historic city of Ghent will be Big Stuff's basecamp in 2025 (photo by Martin Corlazzoli)

CALL FOR ABSTRACTS: BIG STUFF CONFERENCE IN BELGIUM / AUSTRALIA

Davy Herremans, coordinator of ETWIE (Center of Expertise on industrial, technical and scientific heritage in Flanders)

The international Big Stuff Conference will take place in Belgium from October 14th to 17th, 2025. Hosted by the vibrant Big Stuff Heritage community, this event gathers museum professionals, academics, consultants, volunteers, and private owners dedicated to preserving and showcasing technological and industrial heritage.

In 2025, we focus on the symbiotic relationship between skills and machinery. Industrial heritage encompasses not just large-scale installations and historic machinery but also the people, skills, and knowledge required to operate, maintain and showcase this mechanical legacy. As the generations of workers and volunteers who have learned to control, calibrate and repair these machines retire, their invaluable expertise is at risk of being lost.

The conference wants to explore effective methods for passing critical and endangered knowledge to new staff and volunteers, ensuring the continuity of this heritage. We would also like to broaden the scope, looking at ways to make old technologies resonate with new generations. How do we teach handskills to a generation brought up on automation? How do we connect older Big Stuff to important new themes such as lower carbon emissions, lower pollution, circular reuse and right to repair?

During the conference, we will delve into how we can keep heritage machinery running in our changing society. Participants are invited to present their work on preserving and transmitting this critical knowledge to a new generation of heritage workers. The conference will feature discussions on practical experiences, successful or failed strategies, and shared challenges, focusing on adapting to the evolving expectations of heritage visitors, workers and customers.

Join us at the Big Stuff Conference 2025 to help shape the future of industrial and technical heritage preservation! Take the opportunity to present your practices, experiences, and challenges. Enjoy excursions to inspiring industrial heritage sites across Belgium, with ample time for networking and discussions. Our basecamp will be the Museum of Industry

in the historic city of Ghent, a place with a deep industrial past (and present) and a great gateway for exploring Belgium's heritage.

Asia-Pacific Hub at Perth, Australia

A face-to-face and online Asia-Pacific hub will also be hosted in Perth on the same dates, making it easier for southern hemisphere heritage machinery fans to meet each other, get involved and reduce travel costs and carbon impact.

The call for abstracts is now open for presentations or posters in either Gent (Belgium), Perth (Australia) or online. The conference theme is: How can we keep heritage machinery running in our changing society?

You can present your paper in a 20-minute talk, followed by a dis-

cussion. Alternatively, you can participate in a poster session, a fantastic opportunity to share your work in a more informal setting with the Big Stuff community.

Send your abstract to: bigstuff2025@industriemuseum.be

- Language: English
- Length: not exceeding 2000 characters
- Deadline: 1st of November 2024 (15th of November 2024 for the online Asia-Pacific Hub)

Please indicate the format you prefer oral, or poster presentation & indicate the location (Belgium/Australia) where you would like to present online or in person. A notification will be sent out on the 15th of November 2024 to the acceptees of the contributed talks and posters.



Elevator of Valparaíso, Chile (photo by author)

CALL FOR ABSTRACTS: SECOND CONGRESS ON ELEVATORS AND FUNICULARS OF THE WORLD

Dr.Arq. Jaime Migone Rettig, TICCIH Chile

TICCIH-Chile, Università di Pavia (Italy) and APPI-TICCIH Portugal invite you to participate on July 11, 12 and 13, 2025, in the international meeting "Elevators and Funiculars of the World. Second International Congress of Industrial Heritage." The conference will take place in Santiago de Chile. All national and international experiences of conservation, intervention, enhancement and new technologies are invited to participate in this

meeting, for which we cordially invite academics, researchers, professionals, companies and students from public and private institutions to participate in this congress.

Send your abstract of presentation before December 31, 2024, to congresoascensores2025@gmail.com. Identify the author and contact information (phone, email, institution) and add a summary text of your presentation of 200 to 300 words with 2 to 3 illustrative images.

- Submission of Abstract of Presentation: December 31, 2024.
- Acceptance of Presentations: January 31, 2025.
- Submission of Presentations: April 30, 2025.

For more information, registration and submission of abstracts, send a message to congresoascensores2025@gmail.com



Ruins of the Organization Commune Bénin Niger (OCBN) which was linked to railway heritage. The construction was demolished in May 2024 (photo by author)

BENIN

THE COLONIAL INDUSTRIAL HERITAGE OF SOUTHERN BENIN REVEALED

Christella Alihonou has a Bachelor's Degree in cultural heritage management at the African Heritage School. For her bachelor's thesis, she made an inventory of industrial heritage sites from the colonial period in southern Benin

Benin, a West African country, has countless industrial sites in its South region. Despite industrial heritage making up an identity, a

reflection of the ingenuity of our ancestors, these industrial sites are unfortunately abandoned and ignored. For this reason, we have assigned ourselves the task of cataloguing the industrial sites of the colonial period in the South of Benin. Southern Benin, extending across departments including Ouémé, Plateau, Littoral, Atlantique and the Mono, was our study's subject. These departments possess remains of Benin's colonial industrial heritage that must be studied and preserved. Southern Benin is not only a heavily colonised region but also an industrialised one.

Benin was under French domination until 1960. Their objectives were to find raw materials, soils for cultivation, manpower and sales markets. The kingdom of Danxomé is a case in point. During the



Porto Novo city, the old station of the capital of Benin (photo by author)

1840s, in the kingdom of Dahomey, King Ghézo forced the abandonment of the slave trade and set up another type of exchange that was just as flourishing: that of palm oil. The kingdom thus set itself the task of making palm oil cultivation its economic model. Instead of selling its men and slaves, it used them to plant and produce palm oil. It thus became the primary source of wealth for the kingdom of Dahomey. In 1940, 1952 and 1954, palm oil mills were set up in Gbada, Avrankou and Ahozon, respectively, to process the fruit of oil palm trees. Let me give you a short overview of industrial heritage in Benin according to categories.

Railway industrial heritage

Railway industrial heritage refers to all the material and intangible remains linked to railways. In southern Benin, we have the OCBN, the Common Organization of Benin-Niger Railways. This institution organises the rail transport of people and goods. The OCBN was established around 1902 and was a state institution promoted by the French organisation AOF (L'Afrique-Occidentale française). The railway company was located in southern Benin in the Littoral department and the

commune of Cotonou. The OCBN includes various road stations and railways. This heritage, present since the colonial era, has been used to move communities and goods. It was also used for inter-state exchanges between Benin and Niger, such as the transport of oil. Let's now talk about the furniture: the train. In addition to the communication routes, the OCBN also maintained a range of means of transport, including steam trains and diesel-powered locomotives, which were used to move and supply provisions to the colonists. Industrial heritage is most present in southern Benin due to the many stations and roads in several cities. After independence, the OCBN closed its doors, leaving only a reasonably dense railway memory. Unfortunately, in February 2024, these remains were removed.

Electrical industrial heritage

The first power plants appeared around the 1920s in Dahomey, specifically in 1935 in Porto-Novo and then in 1939 in Cotonou. The latter was called the Cotonou and Porto-Novo Electric Plant. The electrical industrial heritage is a set of tangible and intangible



Relics of the Avrankoun oil mill
(photo by author)

elements related to producing electrical energy. This includes power plants, electrical poles, and various workstations. Historically, the first electrical installations were established in 1948. Dating back to the colonial era, these power plants were managed by the French colonies of AOF. They produced electricity for urban centres, industries, and the wealthy. From September 30, 1955, to June 15, 1958, the French regime granted a concession to the French joint-stock company CCDEE, whose headquarters were in Cameroon. This

company produced and supplied electricity in the country's capital, including Porto-Novo and Cotonou. To benefit from the electricity supply services, it was necessary to submit a request for lighting and a pole. The company democratised its services and managed to cover the needs of territories near Porto-Novo. However, this was not enough, and the company aimed to play a role in the country's water supply, treatment, and processing. In 1970, after independence, the company became state-owned and was entrusted to

a mixed-economy company. Three years later, through government ordinance No. 73-13 of February 7, 1973, CCDEE became the Dahomey Electricity and Water Company (SDEE). In 1975, the country changed its name to Benin. SDEE then became SBEE: Benin Electricity and Water Company

Industrial port heritage

This heritage is characterised by port activity. It considers the various port facilities such as quays, harbour cranes, and warehouses. The industrial port heritage in Benin includes the Autonomous Port of Cotonou, formerly 'le Wharf de Cotonou'. The Wharf complex began in 1890 and was completed in 1899. The latter played a considerable role in the colonial history of Dahomey. The Wharf was used for the transport of goods and services. Let us remember that Cotonou was uninhabited and had the necessary space to establish port facilities. The port was, therefore, built in Cotonou. Colonial ships docked at the quays to be loaded or unloaded with raw materials or finished products. The Wharf complex, now the Autonomous Port of Cotonou, has had and continues to impact significantly Benin's economic activity. Exchanges between states took place at the port.

During the colonial period, the wharf served in exchanges between Dahomey and the colonies. Ships carried away raw materials and brought back finished products. These finished products were stored in warehouses before being sold on the market. The Autonomous Port of Cotonou concentrates on the economic, social, and industrial history of Benin's economy. It has contributed to the emergence and development of Benin. This port has also facilitated globalisation and the export of goods and services produced by Benin. As for the Cotonou lighthouse, it is a skeletal tower located about 1.2 km northeast of the port's breakwaters. The current Cotonou lighthouse was commissioned on September 1, 1928, to guide ships to the harbour. The latter is not valued or protected.

Oil production and extraction industries

During the colonial era, Benin experienced an industrial development that was characterised by the establishment of various oil

mills. These mills produced palm oil and palm kernels. Equipped with modern machinery, these mills produced red palm oil on an industrial scale. In Benin, we can count four palm oil production industries, including the Ahozon oil mill. Established in 1926 and commissioned in 1940, it was followed by the oil mills of Avrankoun and Gbada, which began operations on October 18, 1950. The Modern Oil Mills of Dahomey Company managed these industries. An expansion agreement was signed with Isaac Béton for the establishment of a factory in IKPINLE. Unfortunately, the project did not come to fruition due to the independence movements.


The colonists also ceded the other three factories, leading to the dismantling and looting of their machinery and equipment. It was not until March 27, 1972, that President Mathieu Kérékou revived the IKPINLE project and laid the foundation stone, allowing for its commissioning on December 15, 1974. In 2004, it was privatised and became the property of Mr. Gbadamassi. Fritex also repurposed Ahozon to produce textiles. Fritex did not last long and closed its doors around 2004. Gbada was transformed into a military base, and Avrankoun was never reused. These industries have contributed significantly to Benin's industrial development.

Each industrial site provides evidence of various industrial activities and practices carried out by a group of people. They testify to times and approaches and must be protected.

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TICCIH 2025 Kiruna

Heritage in action



Darling Harbour panorama 15/07/1946 (Source: Museums of History NSW - State Archives Collection)

AUSTRALIA

REDISCOVERING THE FORGOTTEN: THE INDUSTRIAL IDENTITY OF SYDNEY'S DARLING HARBOUR

Dr Ece (AJ) Kaya, Senior Lecturer, Associate Head of Engagement, Management Department at UTS Business School (University of Technology Sydney)

The developments in Darling Harbour have over 200 years of industrial and maritime tradition. The waters of Darling Harbour visually unify the Basin, and it is the only place in Sydney that brings together the three historically important transport modes of sea, rail, and road. It is also the site of the Powerhouse Museum, which is the state's repository of the area's industrial history. The site stands apart from the city centre, fostering its own unique identity. G.B. Wilson (1982) defined Darling Harbour as "a commercial port, the birthplace of Australian Industry and the largest railway goods yard in the State (NSW)" (p. IV). The area is surrounded by Ultimo, Pyrmont and Haymarket, which characterises local residential urban environments, woolstores, warehouses, markets, and other industrial facilities (Figure 1).

According to the City of Sydney Strategic Plan (1980), including an action plan prepared by the residents, the Council adopted a policy to redevelop Darling Harbour Railway Goods Yard to create a mix of public open space and housing with a small component of commercial and community uses. The Council also stated the city's significant need for recreational open space. Therefore, it was suggested that the harbour and the city should be accessible to city residents and workers and become a tourist attraction. The Council intended to rejuvenate the Darling Harbour Railway Goods Yard site to enhance the city's image and offer new opportunities for city living (City Planning Department, 1980). However, the changes proposed by the State Government lead to demolition rather than reuse. Although the Premier of New South Wales at the time, Mr Neville Wran, Q.C., stated that Darling Harbour

is a unique historical site, being the first centre of maritime commerce in Australia, he announced plans for a \$200 million redevelopment of the southern portion of the Darling Harbour (*Maritime Service Board of NSW, 1984*).

In 1984, The National Trust of Australia (NSW) raised their concerns over the establishment of the New Darling Harbour Authority, which was not bound by the Sydney City Council Draft Ultimo/Pyrmont/Haymarket Local Environmental Plan No. 30 nor by the Environmental Planning and Assessment Act, 1979, the Heritage Act, 1977, or other significant planning legislation. The National Trust of Australia (NSW) also stated that the area occupied by the Darling Harbour Railway Goods Yard contains a considerable archaeological record. Therefore, The National Trust of Australia (NSW) recommended that the government initiate, as a matter of urgency, studies of possible uses of existing structures, particularly those with historic, architectural, and industrial significance. Many of these structures were erected during the nation's wool boom and the commencement of Sydney's coal and frozen meat trades. The buildings (e.g. Wool Shed, Inwards Delivery Shed, Double Tier Outwards Goods Shed, Amenities Block, Water Tank) document the role played by the railways in the supply of goods to New South Wales (Figure 2). The National Trust of Australia (NSW) particularly recommended those buildings and sites for retention and appropriate reuse.

The National Trust of Australia (NSW) strongly argued that the historical and archaeological landscape and townscape quality of the Darling Harbour Basin, as it existed in 1984, was indisputably most significant. It was not disputed that the Basin was perceived as lacking satisfactory aesthetic, functional, and economic merit. However, altering this critical heritage asset (even for presumed environmental, aesthetic, economic, and community benefits) would irrevocably degrade the Basin's unique cultural fabric and ignore or disrespect heritage considerations. In the Trust's opinion, any significant development within the Darling Harbour Basin had to consider all aspects of the area's prime cultural significance to Sydney, the State, and the Nation (*The National Trust of Australia (NSW), June 1984*).



The Goldsbrough Building & Darling Harbour (photo: [Goldsbrough Apartments](#))

Despite these concerns, Laurie Brereton, then Minister for Public Works and Ports, informed The National Trust of Australia (NSW) on 13 June 1984 that the entire site would be flattened, and that funding would come mainly from \$800 million in private investment; the government would supply \$200 million. He also stated that the buildings on site were available elsewhere and that the government was not interested in the Trust's suggestion for a rail museum. Mr Wran indicated that special legislation would be executed to liberate the proposed development from normal planning controls at the local government level to ascertain the project's fast initiation (Maritime Service Board of NSW, 1984). The New Darling Harbour Authority, under the responsibility of the Minister for Public Works and Ports, was to bring the project to completion, a project involving both the public and the private sector. As a result, the state government passed the new Darling Harbour Authority Act on 14 June 1984 (National Trust Council Sub-Committee, June 1984). The Sydney Morning Herald (1984) reported that the new Darling Harbour Authority was immune from legal challenges (8/05/1984). The project was seen as a vote winning initiative for the 1988 election which coincided with the project's completion date as 26 January 1988 (The Sydney Morning Herald, 1984). The decision to suspend all other planning powers and give the Authority sole responsibility for the redevelopment was hugely controversial, fuelling media and community criticism.

Darling Harbour Authority and the Redevelopment

In the 1982 management plan crafted by the Department of Environment and Planning, the proposition to dismantle the goods yard was posited as an avenue to render the harbour accessible to a substantial populace. Furthermore, it aimed to facilitate the establishment of a diverse array of recreational amenities catering to a broad social spectrum. This transformation was also envisioned to manifest as a tourist space-oriented market. The plan explicitly emphasised the area's historical significance as Australia's inaugural site of commercial shipping and industrial activities. The primary objective of this plan did not involve delving into the industrial heritage and history of Darling Harbour (Figure 3). Notably absent was any discourse on the significance of preserving a unique urban space replete with traces of its industrial heritage.

The environmental assessment of the Darling Harbour redevelopment, conducted in September 1983, highlighted that without due consideration of essential development elements—particularly the scope and composition of urban spaces—the scale of the freeway, wool stores, and the Government Printer's building would assume a dominating presence over the structures and locales within the site. The area's identity was firmly intertwined with the harbour and maritime activities, a connection deemed imperative to preserve and enhance. To achieve this objective, slight elevations of specific



Darling Harbour: through the lens (photo: Museums of History NSW)

sections of open space, such as platforms and promenades, were included to afford panoramic views of the water. Additionally, the removal of Finger Wharves aimed to expand the visibility of the water in upper Darling Harbour, preserving the vibrancy of small vessels moored in the vicinity. A large square-rigged vessel was identified as a considerable asset in this context. The study also highlighted the potential detriment to the visual harmony of the city centre buildings ascending the hill from the Darling Harbour foreshore, cautioning against the construction of tall, bulky buildings along the foreshore and within the flat valley floor (NSW Department of Environment and Planning, 1983). Despite the assessment's recommendations to preserve the area's maritime identity, prevent overpowering structures, and enhance waterfront visibility through specific urban planning measures, these guidelines were not followed. Consequently, the redevelopment proceeded without adequately considering the essential development elements highlighted in the assessment, leading to a dominance of large structures and a diminished connection to the harbour and maritime activities.

The government's requirement to include a diverse range of activities was about transforming Darling Harbour into an exciting and pleasant new city precinct, and the intention was also to create a visitor experience in that part of the city. Three museums were included—a museum to display Australia's maritime history, an aquarium to display and explain Australia's underwater ecology, and a museum of applied arts and science to explain Australia's industrial development. It was ironic that the plan was proposing museums to display Australia's maritime and industrial history by erasing the signs of that very history, demolishing the items that once belonged to that maritime and industrial culture.

The political construction of the Darling Harbour Redevelopment Project reflected hegemonic power in the decision-making process. It showed that the state government plays a role in a coercive-legislative mechanism (new laws and changes to existing laws and decrees). The vast port and railway facilities that lay abandoned in and around the central urban area of Sydney presented a grand

opportunity for the entrepreneurial Labor government (of the day) to compete with cities worldwide and achieve impressive physical development aimed at triggering economic growth. In this sense, Darling Harbour reflects and embodies an exchange value-oriented appropriation of space by capitalists and state actors interested in the abstract qualities of space, including size, width, location, and profit, but not heritage.

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ITALY

THE STEAM ENGINE OF AMIDERIA CHIOZZA

Raffaele Antonio Caltabiano, President Amideria Chiozza ODV

The first Industrial Revolution occurred in the northeast Italian region of Friuli-Venezia Giulia between the end of the nineteenth century and the early years of the twentieth century. Although many new factories were built, few were equipped with modern machinery. In the region, there is still an example, unique in the world, of a factory for producing starch from rice built at the end of the nineteenth century and equipped with all the most advanced technologies of the time.

The Amideria Chiozza di Perteole, in the municipality of Ruda, was born from the idea of Luigi Chiozza, who, in 1865, experimented with the extraction of starch from corn thanks to his studies of chemistry conducted in Paris, his entrepreneurial ability in agriculture and his ability as an innovator. In 1875, he obtained recognition from the Austrian Ministry of Commerce: "... exclusive privilege for the duration of six years in the erection of a method particularly suitable for separating the starch from the oily part of the corn, thus making it of longer duration and perfect white colour."

Unfortunately, Luigi Chiozza died before seeing the expansion of his factory carried out, which, with the acquisition by the Prima Pilatura Anonima di Riso di Trieste, was enlarged and equipped with an energy production system with a steam engine capable of ensuring the operation of the entire process housed in a modern three-story building of 355 square meters per floor. The total surface area of

the plant exceeds 10,000 square meters. The production process employed 120 workers and remained unchanged until 1986, when the factory was closed due to bankruptcy. On 23 June 1989, the Ministry of Cultural and Environmental Heritage issued a decree subjecting the entire complex and its contents to restrictions under Law no. 1069 of 1 June 1939.

Power generation

The energy needed to operate the factory was generated by a steam power plant fueled initially by coal and then by oil. The main components of the power generation plant are the chimney, boiler room, steam engine room and workshop. The boiler room houses two Cornish model boilers, produced in 1902 by the Skoda Werke of Pilsen, which in 1968 was joined for other production needs by an Alberti-Vapomatic monobloc generator produced by Fonderie e Officine di Saronno.

Oil tanks buried in the outdoor ground by underground pipes are connected to the boiler burners. The steam produced by the boilers is sent to the steam engine through underground pipelines. For the discharge of the fumes, the boilers are connected to a 31-metre-high chimney, as can be seen from the original project drawing from 1903, which describes the structure.

The steam engine

The steam engine in Amideria Chiozza was produced in 1902 at the Wannieck plant (Brno, Czech Republic) by Erste Brunner of Brno and bears serial number 2486. The Erste Brunner Company, founded in 1821, was one of the largest and most important companies in the Austro-Hungarian Empire. It continued the production of power generation machines until 1939, transforming itself into an



The steam engine in Amideria before the restoration (photo by author)

armaments factory within the industrial group Reichswerke AG für Waffen-und Maschinenbau Hermann Göring; production continued in the Soviet period until the fall of the Berlin Wall.

Wannieck's plant in Brno was integrated into PBS (První Brněnská Strojirna) in 1902, and the company of the same name today produces components for the aviation industry. The division of PBS specialised in the production of steam turbines (following the tradition of the production of steam engines) has been taken over by Siemens, in whose Brno branch there is a steam engine restored in the nineties of the last century, the boiler manufacturing division was purchased by the French Alstom and is located in the same area.

The steam engine installed in Amideria in 1902 is of the horizontal single-cylinder type with a manifold valve and vertical centrifugal regulator. The machine, driven by steam from the thermal power plant, provided the driving force to all departments of the factory. The tractor pulley transmitted the motion to the main axis of the factory through a connection with four hemp ropes with a diameter of 8 centimetres. The subsequent connections between the various pulleys of the various departments of the plant were made with leather belts.

After pushing the machine's piston, the steam from the thermal power plant was not dispersed at the outlet but channelled through adequate pipes towards the starch drying cells. Not even

the condensate water, which was formed with the cooling of the steam following the passage through the pipes of the dryers, was dispersed but was sent back to the boiler as feed water for the boiler itself. After combustion in the Cornish boilers, the fumes were expelled through the chimney, a symbol of the plant and visible from a great distance.

The restoration

In 2014, the room that housed the machine was in a state of complete abandonment: the roof (a flat roof made of wooden beams) had collapsed in several places due to rainwater infiltration. The machine, exposed to the elements and the danger of the entire roof collapsing, was completely attacked by rust.

Therefore, the project for restoring the machine required immediate intervention to secure it with an adequate temporary cover and reconstruct the flat roof; the Municipality of Ruda carried out this first rescue intervention with the funds made available by the Friuli Venezia Giulia Region.

In 2014, the Amideria Chiozza Association was established to "...pursue the purpose of studying, safeguarding and enhancing the structure, artefacts and machinery, called Amideria Chiozza located in La Fredda in the Municipality of Ruda, of the archival material and the social and ethical heritage that concerns it." The first objective it sets itself is the restarting of the steam engine.



The steam engine after the restoration project (photo by author)

Thanks to the association's collection of over 12,000 signatures, the project to restore the machine called "Let's turn on the steam engine" obtained funding from the Italian Environment Fund (FAI) and Banca Intesa of 26,000 euros. This funding, added to the 5,000 euros made available by the Association, made the restoration eligible for financing.

To allow for an accurate restoration, it was decided to collaborate with the Technical Museum of Brno, a national structure of the Czech Republic entirely dedicated to mechanics, and the Flirex company, which had to its credit the restoration of numerous steam engines of the same period and was certified by the Ministry of Cultural Heritage of the Czech Republic as a restorer of machines.

In the intervention of the Czech technicians in Perteole, some parts of the machine, for a total weight of 550 kilograms, were dismantled and shipped to Brno for restoration, while the parts that could not be dismantled, due to weight and size, were restored on site. All operations were carried out with the support of Czech technicians and volunteer personnel with verified skills and experience in the mechanical sector belonging to the Amideria Chiozza Association.

The construction site, set up in the power generation plant, adequately isolated from the rest of the factory, was opened on 25 October 2019 and remained operational until the restoration was completed at the end of September 2021. The work was carried out in a workmanlike manner and total safety conditions.

The phases of restoration

The restoration activities included cleaning, protecting and lubricating the machine's parts, as there were no missing parts or parts in a precarious state of preservation that required their replacement and/or integration.

The restoration of the individual components required manual removal of deposits of old oils (using a technical solvent) and thick layers of rust using scrapers. The metal surfaces, once cleaned, were coated with colourless paint to stabilise the microscopic corrosion residues and then preserved with a preservative grease waiting to be reassembled. They were dismantled and completely restored by Flirex. After the restoration work in the Flirex restoration workshops, the components and units

were stored with grease and preserving oil, packaged and prepared for subsequent transport and final assembly. The reassembly was carried out only after the significant components' restoration in Amideria.

The restoration program was divided into seven phases, and the related timeline, based on a working capacity of five people for four-hour weekly interventions, envisaged completion in 12 months, which then became 18 due to the pandemic event. The phases involved the volunteers of the Association coordinated by Giovanni Perissin, site manager with great experience in the maintenance of industrial machinery, the technicians of the Brno Museum and Fli-rex, Ondrej Mertha and Thomas Flimel.

When the restored parts were returned from the Fli-rex workshop, they were reassembled, and the entire machine was fine-tuned. We then proceeded with the painting, using semi-matt synthetic black paint (RAL 9005), respecting the original paint applied to the painted parts of the machine after painting with primer-antirust. The flooring of the machine area was restored with original tiles, and the protective panels of the steam pipes on the floor were painted. The connection cables with the factory mast were also entirely replaced by hemp ropes (total length 60 meters) made from scratch, based on the original sample of which some parts remained, by the Armare company of San Giorgio di Nogaro, which participated in the initiative with a collaborative spirit by donating and installing this crucial dynamic connecting element.

At the end of the activities, the volunteers spent 1,521 man-hours. As required by the authorisation issued by the Superintendence of Archaeology, Fine Arts and Landscape of Friuli Venezia Giulia, the technical report describing the restoration work was drawn up, accompanied by detailed photographic material describing all the phases.

The satisfaction of seeing again what, in many ways, was the “engine” of the Amideria completely renovated and functioning is a source of satisfaction and pride for all the people involved in the delicate restoration operations. Furthermore, it must be said that what has been done is the first step in the complex restoration of the Amideria to bring to light and make visible and appreciable an industrial activity that has given prestige to the creator of this production process, which has created the conditions for employment development in the Bassa Friulana, which has remained in the collective imagination the factory on a human scale, which drew the raw material from the agricultural cultivation of the land.

[Contact the author](#)



When the restored parts returned from the Fli-rex workshop, they were reassembled and the entire machine was fine-tuned (photo by author)

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Memorial to the English Miner 1824 – 2024. Dolores Mine Museum. Real del Monte, Hidalgo (photo by Marco Antonio Hernández Badillo)

MEXICO

MEMORIAL DEDICATED TO THE ENGLISH MINER, COMMEMORATING 200 YEARS OF BRITISH IMMIGRATION

Belem Oviedo Gámez, TICCIH National Representative in Mexico and coordinator of the ICOMOS State Committee in Hidalgo

On October 5, 2024, the Historical Archive and Mining Museum and the Civil Association inaugurated a Memorial. This memorial commemorates 200 years since the arrival of the first English immigrants to Real del Monte, and their legacy is now part of our history and culture.

On February 4, 1824, the Company of Adventurers in the Mines of Real del Monte was established in London, England, to work the properties of Pedro Romero de Terreros y Rodríguez de Pedrosa, Third Count of

Regla, starting this way the Real del Monte y Pachuca Company.

These entrepreneurs, also known as adventurers, remained in their country. Still, between 1824 and 1825, 191 men, accompanied by seven women and three children, most of them from the Cornwall Region in the United Kingdom, were sent to Mexico; they crossed the Atlantic Ocean to arrive at the Ports of Tampico and Veracruz. This was the beginning of the migration of English, Irish and Scottish workers that ended in the 60s of the 20th Century.

The first group, composed of fifteen British immigrants, arrived at Real del Monte on June 11, 1824. Between the end of 1825 and May 1826, a larger group arrived with nine steam engines. Real del Monte was seeing a revival to a new era as a mining town: the Industrial Revolution era.

The mining landscape was transformed with forks, steaming chimneys and Cornish engine rooms. The two surviving engine rooms in this “real” are part of the site museums Mina Acosta



Inauguration of the Memorial to the English Miner: Dolores Mine Museum. Real del Monte, Hidalgo (photo by Marco Antonio Hernández Badillo)

and Mina Dolores. Their stories and the story of the workers, including the registry which recorded the money sent to their families in Cornwall, are documented in the Historical Archive of the Real del Monte y Pachuca Company (1727-1986) “Memory of the World of Mexico by UNESCO”. Industrial Heritage is preserved and studied by the Historical Archive and Mining Museum, Civil Association (AHMMAC).

The men and women from the other side of the sea did not come alone. Their dreams, customs and beliefs accompanied them; little by little, Mexicans embraced them. The gastronomy, so different in each culture, found a union element with time in the pasty. After 2009, an International Pasty Festival was organized in Real del Monte, which was replicated by pasty makers in Redruth, Cornwall, a city with which we have shared a common ground since 2008.

Methodism, the predominant religion in the United Kingdom, has not only left us two emblematic churches in Real del Monte and Pachuca and a Methodist school but, in an indirect manner, originated the English Cemetery, where British miners and their descendants were laid to rest.

The mining crisis of the last decades of the 19th century in Cornwall forced the continuous displacement of Cornish workers. Among them, a group of engineers arrived in the area and founded, in 1894, the Pachuca Athletic Club, also known as Club Pachuca, playing, among other sports, soccer, and introducing it to the region.

Those immigrants were army members, engineers, miners, assemblers, smelters, clerks, and office workers. To those men who trusted their technology, those who dreamed about the legend of the Mexican mines’ wealth, and those who, holding their smiles and tears, left their families hoping to reunite with them. To those who adventured to cross the sea to face an uncertain future with the illusion of improving their lives, those who worked the mines of Real del Monte, processing the ore and establishing the basis of a great company that is turning 200 hundred years old this year; to them and their families is dedicated this Memorial.

After the inauguration, a tour was conducted through the Dolores Mine, which preserves the most representative architectural ensemble of the steam era with Cornish technology: engine house, boiler room, chimney, offices, lamp room, etc.



Dolores Mine Museum. Real del Monte, Hidalgo (photo by Marco Antonio Hernández Badillo)

The engine room successfully hosted a small 30" Cornish engine in 1827, which was replaced by a 65" one in 1849, which was also substituted by a 75" engine in 1873. It was still operating until the first years of the twentieth century together with an electric engine.

According to the mining company inventories from 1890 to 1904, there were three Cornish boilers in Dolores, with structures, masonry, grate bars, and service doors; in 1905, four Harvey boilers were recorded. They were single boilers with one canal and no return tubes. The pressure was 80 pounds. The grate bar area was 21 square feet. The heating surface was 516 square feet.

The mining company buried those boilers under tons of minerals to reuse the space. AHMMAC conducted cleaning, maintenance, and recovery works in the boiler room. Nowadays, the architectural ensemble with its impressive boilers is in good condition.

After ten years of work on the site, the Historical Archive and Mining Museum, Civil Association, opened Mina Dolores to the public on October 5, 2024, as a work-in-progress museum.

[Contact the author](#)



The entrance of the Jingdezhen Ceramic Industry Heritage Museum. Recognised for its unique impact and innovation in heritage preservation, the museum was awarded the 2017 Asia-Pacific Award for Cultural Heritage Conservation Innovation (photo by Zhiwen Zeng)

CHINA

A PRELIMINARY EXPLORATION OF THE CERAMIC INDUSTRIAL HERITAGE IN JINGDEZHEN, JIANGXI PROVINCE

Zhiwen Zeng & Junming Wu (Jingdezhen Ceramic University, Jingdezhen, Jiangxi, China) and Shujing Feng (Industrial Culture Development Center of MIIT, Beijing, China 100846)

Jingdezhen ceramic industrial heritage reflects the evolution of the ceramic industry and holds significant historical, technological, and cultural value. However, many factories have declined due to market changes and competition, leaving much heritage, and some are safeguarded. Protecting and passing on Jingdezhen ceramic industrial heritage is essential. It supports the city's ceramic industry, cultural transmission, and academic research and strengthens cultural confidence. The technological value of this heritage offers crucial tools for its preservation, underscoring its importance in China's ceramic history and the need for careful protection.

Historical development of the Jingdezhen Ceramic Industry

Jingdezhen ceramic industry dates back to the Han Dynasty, with its kilns operating for nearly two thousand years

and its craftsmanship passed down through generations. This long-standing tradition is a significant part of China's cultural heritage. Archaeological findings reveal porcelain production sites throughout Jingdezhen, particularly in Zhushan and Changjiang Districts, Leping City and Fuliang County. This article examines the critical porcelain sites in Zhushan and Changjiang, exploring the evolution of Jingdezhen's ceramic industry, its technological milestones, and the current state of its industrial heritage.

Since the founding of the People's Republic of China, Jingdezhen's ceramic industry has experienced vital phases, including socialist revolution, reform, and modernisation. Through continuous innovation and transformation, it has made significant progress in institutional reform, technological advancements, industrial growth, cultural exchange, and heritage preservation. These efforts have sustained the rich legacy of Jingdezhen, the "Millennium Porcelain Capital," and its vibrant ceramic tradition.

Jingdezhen has a rich tradition of handcrafted porcelain, with its ceramic enterprises evolving from private ownership to public-private partnerships, state-owned enterprises, and restructuring. The industry's development followed three key phases: recovery and transformation, tortuous development, and rapid growth. These stages define the historical trajectory of the Jingdezhen ceramic industry.



Taoxichuan Taoxi Pearl aims to create an urban arcade that spans buildings and links public spaces, offering a new, open, shared, and interconnected urban living space. It is located at the intersection of Chaoyang Road and Taoxichuan Road in Jingdezhen (photo by Zhiwen Zeng)

Technological Evolution Stages

From 1949 to 1957, Jingdezhen laid the foundation for its ceramic industrial system. Between 1958 and 1977, it experienced a period of challenging development. From 1978 to 1995, Jingdezhen matured, establishing a modern ceramic industry and achieving the “five modernisations” set by the Light Industry Association: standardised raw materials, specialised auxiliary materials, fuel gasification, modernised production processes, and high-end product development.

From 1949 to 1957, during the restoration and transformation period of the Jingdezhen ceramic industry, to meet the demands of industrial development and enhance production efficiency, the ceramic machinery and equipment in Jingdezhen progressed from a rudimentary state to a more advanced one, evolving from the introduction of foreign technologies to independent innovation.

Characteristics of Technological Changes

From 1958 to 1977, during Jingdezhen’s challenging industrialisation, the municipal government initiated technological innovations, focusing on equipment modernisation. This effort unfolded in two phases: 1958–1965 saw foundational development, where outdated processes and equipment led workers to combine local and Western techniques, fostering progress without significant productivity gains. The second phase, 1965–1977, marked comprehensive development, with enhanced production processes and technical equipment, driven by engineers and the adoption of advanced foreign technologies, resulting in more sophisticated innovations.

Between 1978 and 1995, the Jingdezhen ceramic industry experienced rapid industrialisation, driven by large-scale technological transformation and unprecedented growth. From 1977 to 1985, state-funded technological upgrades improved efficiency with better raw material processing, one-stop moulding, and tunnel and roll-



Taoxichuan Mengyao Square is paved with kiln bricks, and its towering chimney serves as a landmark of Taoxichuan. The square blends traditional and modern elements, symbolising the evolution and growth of Jingdezhen's ceramic industry (photo by Lingfei Yu)

er kilns for firing, significantly boosting economic and social benefits. From 1986 to 1995, the industry shifted from extensive to intensive growth, focusing on modernising existing enterprises, resulting in the emergence of high-tech cornerstone enterprises with leading equipment standards.

By the end of the 20th century, due to reforms in state-owned enterprises, Jingdezhen's top ten porcelain factories were gradually closed down. Subsequently, due to prolonged neglect and lack of maintenance, most factory structures, machinery, and associated equipment incurred varying degrees of damage. Some were demolished, while others were repurposed into ceramic industrial heritage sites. These locations have been transformed for museum exhibitions or educational and research endeavours.

Survey of Jingdezhen Ceramic Industrial Heritage

Ceramic industrial heritage reflects the industry's development, technological progress, and the blend of modern technology with traditional craftsmanship. Understanding the phases of ceramic industrialisation, technology, and cultural legacy is crucial in driving preservation efforts. This heritage includes ancient kiln sites, traditional techniques, historical artefacts, porcelain factory remnants,

production tools, infrastructure, design blueprints, and archival materials, all tied to ceramic production.

After the founding of the People's Republic of China, Jingdezhen's ceramic production evolved significantly with the establishment of the "Top Ten Porcelain Factories," advancing mechanisation, industrialisation, and standardisation. From the 1950s to the early 1990s, these factories were crucial to Jingdezhen's economic growth. In 1995, the municipal government initiated employment system reforms in state-owned porcelain factories. This study focuses on Jingdezhen ceramic industrial heritage from 1949 to 1995, covering factory remnants, equipment, technological legacy, and material and intangible heritage.

Current state

Jingdezhen is a leading city in China's ceramic history, and it is known for its global influence in porcelain production. Over its long history, Jingdezhen developed a comprehensive traditional ceramic production system while preserving essential industrial heritage reflecting each era. This technical legacy has been crucial to the city's ceramic industrialisation. After the People's Republic of China was established, the "Top Ten Ceramic Factories" laid the

foundation for mechanisation and industrialisation. However, market changes led to the decline and abandonment of many ceramic sites. Some were demolished, others renovated. The Jingdezhen Taoxichuan Industrial Heritage Park is a notable success.

As of present, the Universe Ceramic Factory was enlisted in the inaugural group of the National Industrial Heritage List in 2017, the Weimin Ceramic Factory followed suit and was incorporated into the third batch of the National Industrial Heritage List in 2019, the Jianguo Ceramic Factory joined the ranks in the fourth batch of the National Industrial Heritage List in 2020, and the Sculpture Ceramic Factory garnered recognition as part of the premier group of Jiangxi Provincial Industrial Heritage in 2023. Apart from these four porcelain factories securing positions on the national and provincial industrial heritage rosters, the twin chimneys of the Guangming Porcelain Factory have been designated as municipal cultural relics protection units. However, the remaining porcelain factories have yet to attain comparable protection status.

Conclusion

With its rich history, uniqueness, and aesthetic value, Jingdezhen ceramic industrial heritage holds significant historical importance.

It reflects the evolution of production, society, politics, and culture, showcasing the shift from a planned economy to a socialist market economy. This heritage embodies the historical development of Jingdezhen, the international porcelain capital. Its social value promotes ceramic culture's scientific study and creative evolution, reinforcing cultural confidence while preserving urban memory and serving as a cultural driver for modern social progress.

Ceramic industrial heritage plays a vital role in preserving and promoting ceramic culture, exemplifying the evolution of the Chinese ceramic industry. As a critical technological repository, Jingdezhen's ceramic heritage has profoundly influenced the local industry and culture. From physical equipment to intangible technological history, its core lies in scientific and technological value. The growth of ceramic production in Jingdezhen highlights the pivotal role of technology in advancing the industry, creating jobs, and reflecting the societal productivity and labour dynamics of the time. This heritage captures the historical trajectory of technological progress for future generations.

Contact [Shujing Feng](#)

UK

A CAMPAIGN TO SAVE BRITAIN'S COOLING TOWERS

Oli Marshall, Campaigns Director *Twentieth Century Society*

Higher than the dome of St Paul's Cathedral (300ft+), yet with a concrete hyperbolic structure in some places only seven inches thick, cooling towers are unlike any other structure in the British landscape. Artist Sir Anthony Gormley has described cooling towers as a 'Man made volcano... a wonderful relic of the carbon age, a memorial to Britain's great, 200-year-long romance with the second law of thermodynamics'. These silent sculptural giants are akin to the Stonehenge or Avebury of the mid-twentieth century, yet they exist on borrowed time.

The last coal-fired power station in the United Kingdom, Ratcliffe-on-Soar, shut down on the 30th of September 2024, and most cooling towers are due to be demolished before the end of the decade. The transition to a greener, cleaner energy network is a profoundly positive step for the UK, and one we wholeheartedly welcome. Yet the preservation of our industrial heritage and the arrival of new energy technologies should not be an either / or situation – there's room for both to coexist.

How many cooling towers are left in Britain?

From a peak of 240 towers in the 1960s, today just 45 individual cooling towers survive in clusters at 5 power station sites in the Midlands and Yorkshire – all but one of which are in the process of decommissioning and demolition. The Society believes there to be a further 24 examples at other industrial sites around the country – like steel plants, oil refineries and chemical works. These are generally much smaller in scale and of lower historic significance than those constructed at post-war power stations. A full list of all known examples can be found below. Are there any cooling towers we've missed? Please email coordinator@c20society.org.uk to notify us of any omissions.

Will cooling towers be listed?

To date, Historic England's advice to the government (DCMS) has been that cooling towers 'do not have the architectural interest requisite for listing', and that 'at the moment there are no plans to preserve a cooling tower', only to 'work closely with power companies to ensure a photographic record is secured before loss'. Almost all remaining examples of cooling towers are covered by a COI (Certificate of Immunity from Listing) which legally prevents them from being designated for a period of 5 years – during which period they are scheduled for demolition. We profoundly disagree with this approach, and are urging all concerned to fully explore the alternatives.



The last coal-fired power station, Ratcliffe-on-Soar, shut down on the 30th of September 2024 (photo by Mark Watson)

What are we proposing?

The Twentieth Century Society is calling for at least one set of cooling towers to be preserved via listing designation and remain in ongoing discussion with the national heritage bodies in England, Scotland and Wales. We're also working with architects, artists and engineers to explore viable approaches for how they might be re-purposed in the age of sustainability.

Post-war power stations were absolutely vast, often 400-800 acres – or the size of 200-300 football pitches. The footprint of a cluster of 8 cooling towers takes up less than 2% of that. Why not retain the towers and integrate them into the new plans for the wider site? Be it for clean power infrastructure, affordable housing, new industries, art and education, a country park or any other use.

The British landscape is dotted with the remnants of power generation and infrastructure from previous centuries, from smock windmills to mill chimney stacks, bottle kilns to gasholder frames. Long after the sails have stopped turning and the furnaces have been extinguished, these functional structures have gradually assumed

the status of regional and national landmarks. The cooling towers of post-war power stations are simply the latest example – a majestic and invaluable part of our twentieth century industrial heritage.

Examples of reuse

Surely it's completely impractical to reuse these enormous vacant vessels? Think again. There are plenty of examples internationally of creative new uses for redundant cooling towers.

At Wunderland Kalkar in Germany, a disused cooling tower forms the centrepiece of a family theme park, with a climbing wall affixed to its concave outer surface – painted with a mountain range for added effect – and a telescopic amusement ride that emerges theatrically from within the tower. In Venice, industrial heritage vies with the architectural masterpieces of the Renaissance, as a 1938 cooling tower in Porta di Venezia was recently converted into a museum and viewing gallery, offering panoramic views over the lagoon to the fabled 'floating city'.

At Vilvoorde, on the outskirts of Brussels, an abandoned pow-



At Wunderland Kalkar in Germany, a disused cooling tower forms the centrepiece of a family theme park (photo by Bart Vanacker)

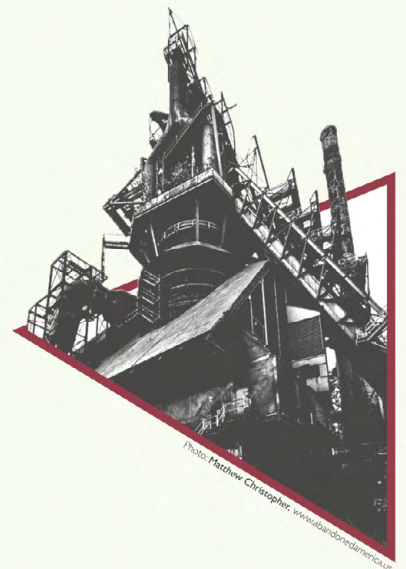
er station and military base were beset with illegal raves for many years. The entrepreneurial local Mayor, initially called to close down a rave, saw the potential for a cultural festival on the site. The annual Horst Festival now stages sonic and artistic installations within the cavernous interior spaces of the cooling towers. This was a model replicated in Hungary, at the

1950s Inota Power Plant near Budapest. The semi-derelict site had already been used as a dystopian filming location for the futuristic *Blade Runner 2049* (2017), and in 2023 the INOTA music festival was launched, with video mapped projections on the three cooling towers providing a suitably sci-fi backdrop to the experimental electronica.



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TICCIH MEMBER TODAY!

www.ticcih.org/membership





Two cooling towers as seen from a former military base near Brussels, Belgium (photo by Bart Vanacker)

While in South Africa's Soweto Township, a pair of cooling towers have been wrapped with a giant painted community mural, and now provide a home for businesses that cater to the extreme sports enthusiast. A narrow bridge slung between the two towers provides a unique 100m bungee jump, while within one of the towers is a freefall jump into safety netting – reputedly the world's highest.

Actions to date

The Society has submitted listing applications for the cooling towers at West Burton and Ratcliffe-on-soar. The former was assessed and rejected by DCMS in August 2022, the latter is pending an assessment.

The towers at West Burton Power Station were included in our 2023-24 Risk List of the top-10 most threatened 20th and 21st

century buildings in Britain. In June 2023 we staged the *British Cooling Towers: Sculptural Giants* exhibition at Margaret Howell on Wigmore Street London, for the London Festival of Architecture, while in spring 2025 a new book will be published by Batsford – the first to explore the architecture, engineering, landscape, and cultural impact of cooling towers. Read some of the coverage of the campaign in The Guardian, Wallpaper*, Dezeen, Apollo Magazine, PORT, Architects Journal.

[Sign the petition](#) to send a message to Historic England and the government, that these cooling towers are a valued parts of UK's national heritage that deserve to be protected.

[Contact the author](#)

LETICIA GAMBOA OJEDA AND JUAN ANTONIO SILLER CAMACHO, MEMBERS OF TICCIH MÉXICO

María de la Cruz Ríos, President TICCIH México

June was a sad month as two of our most important members passed away: Leticia Gamboa from Benemérita Universidad of Puebla (BUAP) and Juan Antonio Siller Camacho from the National Institute of Anthropology and History (INAH).

Leticia Gamboa Ojeda (July 28th, 1952-June 4th, 2024) was part of the group of specialists that founded TICCIH México in 2007, as she was considered one of the most outstanding researchers in history and industrial heritage of the city of Puebla. She had a PhD in Social History from the Université de Paris VIII in Saint-Denis (1993). She was a researcher and a teacher at the Social Sciences and Humanities Institute of Puebla Autonomous University, where she taught graduate courses. She won the “Francisco Javier Clavijero Prize” for the best research in History in 2001, awarded by the National Institute of Anthropology and History. Also, she was awarded for all her studies and contributions to local history in 2004, getting “the State Prize of Science and Technology” in the Social Sciences and Humanities area by Puebla’s Committee of Science and Technology.

“Lety”, as she was affectionately called, studied the French immigration in the city of Puebla during the 19th and early 20th centuries, especially from the town of Barcelonnette and the impact it had in the textile industry in the whole country, but as well as in other areas, like the bank system and commerce. As a professor, Leticia Gamboa was very kind and generous, always willing to share her broad knowledge with everybody, helping to form a new generation of historians and industrial heritage specialists. She was the director of PhD thesis of Federico de la Torre and one of the supervisors of Luis Ibáñez’ masters’ thesis, a member of TICCIH México.

As a founder member of TICCIH México, Leticia Gamboa helped organise the different congresses of industrial archaeology, including being a main speaker at the III TICCIH México International Congress and VII Latin American International Congress for Conservation of Industrial Heritage, which took place in San Luis Potosi, México, in 2013.

On the other hand, Juan Antonio Siller Camacho (July 10th, 1950-June 1st, 2024) had an extensive and complete education that reached the fields of architecture, archaeology and museology. He was an architect at the National University of México, archaeologist at the National School of Anthropology and History, held a Master’s degree in Restoration from the National School of Conservation, Restoration and Museography “Manuel del Castillo Negrete”, another one in Museology by the same school, and a PhD in Architecture by UNAM under the supervision of Dr. Paul Gendrop. Also, he was a member of the International Council on Monuments and Sites (ICOMOS) and a member of the International Council



LETICIA GAMBOA



JUAN ANTONIO SILLER

of Museums (ICOM). As a teacher, Siller formed several groups of students, some studying industrial heritage in different parts of the country. For example, he was the director of the B.A. thesis for Luis Ibáñez, a member of TICCIH México.



Visit to Oacalco sugar mill, Morelos, 2023 (photo by author)

Siller hosted a study visit for the State of Morelos for TICCIH México members in January of 2024. The group was able to visit a couple of old sugar cane haciendas. The first one was San Gabriel de las Palmas, located in Amacuzac, founded by Spanish conqueror Hernan Cortes in 1529 and where the group was able to see the former industrial facilities, the machinery that still survives and how the place has been rehabilitated as a hotel nowadays. Also, a visit was paid to another former sugar cane hacienda, Oacalco, in Yautepec, founded in 1668 and active until 1989, when it was closed down. Two massive chimneys emerge from the old facilities from the 19th and early 20th centuries. Finally, the group could visit a farm that cultivates rice and a mill named “La Perseverancia” located in Jojutla; the county is currently working on getting a Designation of Origin as part of the rich Mexican gastronomy. In all these places, Dr. Juan Antonio Siller was able to share his deep knowledge of the history, current status and activities of all these sites.

TICCIH México members regret the loss of Leticia Gamboa and Juan Antonio Siller, friends and scholars who left a great array of publications that have enriched the field of research, *mise en valeur* and knowledge of industrial heritage in México. Rest in peace, both of them.

TICCIH México’s membres are Nerina Aguilar, José L. García, Bernardo García, Marco A. Hernández, Luis Ibáñez, Lilia Martínez, Aracely Monroy, Jorge Navarro, Belem Oviedo, Laura Pacheco, María de la Cruz Ríos, Frederick Thierry, Federico de la Torre, Lilian Torres, Mariano Torres and the Historical Archive and Mining Museum.

Contact the author



Visit to La Dificultad Mine, Hidalgo, 2009 (photo by author)

ARTERIES OF INTERNATIONAL SUSTAINABLE INDUSTRY: THE SWANSEA CANAL AND ITS EARLY RAILWAYS

Stephen Hughes, *Royal Commission on the Ancient and Historical Monuments of Wales (UK) and the Swansea Canal Society, 2023, 328 pp., hardcover, £45.* The book can be purchased on the [Swansea Canal Society website](#) or [Amazon UK](#). The 82 reconstructions painted by the author for the book can be seen at [CanalArchaeology - Etsy UK](#).

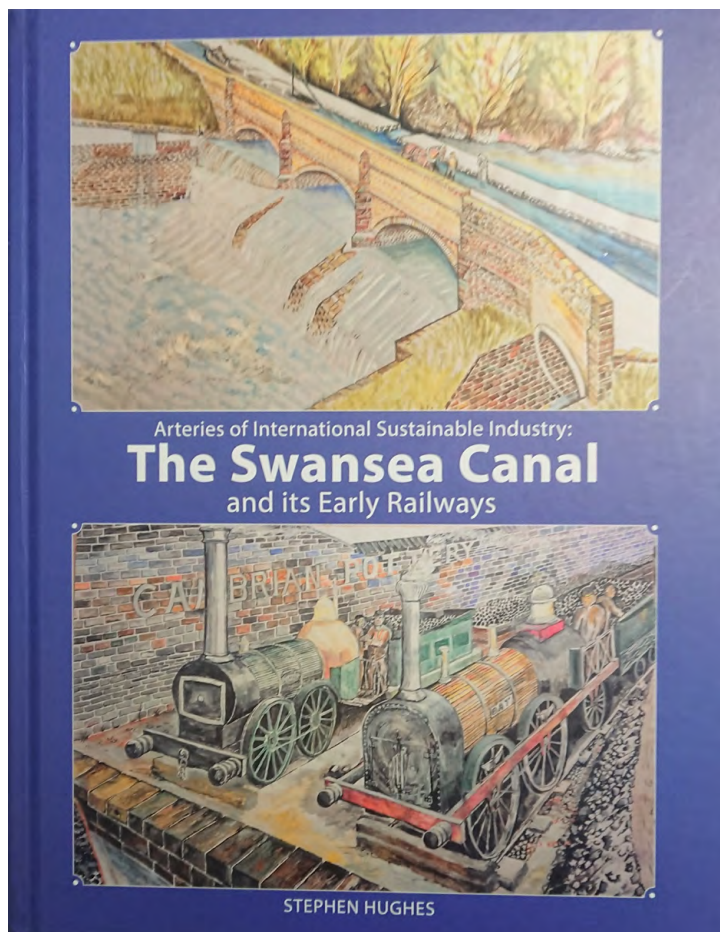
Reviewed by Stephen Hughes, former Secretary-general of TICCIH

Stephen Hughes has written a new book. He has previously written the TICCIH/ICOMOS World Heritage Studies on canals & collieries in collaboration with international colleagues and was involved in similar studies on railways and bridges. The present volume is part of a trilogy of books: the earlier volumes were *The Archaeology of an Early Railway System: The Brecon Forest Tramroads and Copperopolis: Landscapes of the Early Industrial Period in Wales*, which are available as ebooks from the online shop at [RCAHMW | Royal Commission on the Ancient and Historical Monuments of Wales](#). Two of the chapters in the Swansea Canal book detail the international development of early canals and railways.

Swansea in south-west Wales, in the United Kingdom, was an international centre of a succession of industries in the early industrial revolution: copper-smelting, tinsplate production, iron-smelting and coal-mining and export, and early railway development. This was initially facilitated by easy access from sea-going sailing ships able to penetrate three miles inland in a steep-sided valley penetrated by a multitude of mining tunnels. This enabled the development of one of the earliest intensive industrial landscapes in the modern world.

It has also been said that the Company of Mine Adventurers, based on Sir Humphrey Mackworth's smelting activities in southwest Wales, was one of the first fully globalised industrial companies in the modern era. The engineering basis of this enterprise by 1698 was the first integrated canal and railway centred on the smelting works at Melincryddan near Neath. This is the first industrial works recorded to have a railway running directly into it. By 1720, the Mackworth mining and integral above and below-ground railway systems had spread to the lower Swansea Valley.

This Lockwood Morris & Co. industrial complex, in turn, fostered a class of artisan engineers, including 'Mr. Powell'. He built a series of atmospheric rotary colliery winding engines in the 1760s. Their additional use on the opposite eastern side of the lower Swansea Valley has been confirmed by the discovery of the remains of an enclosed engine-house (Gwernllwynchwyth), which stood alongside one of the wooden railway branches developed there from 1755.



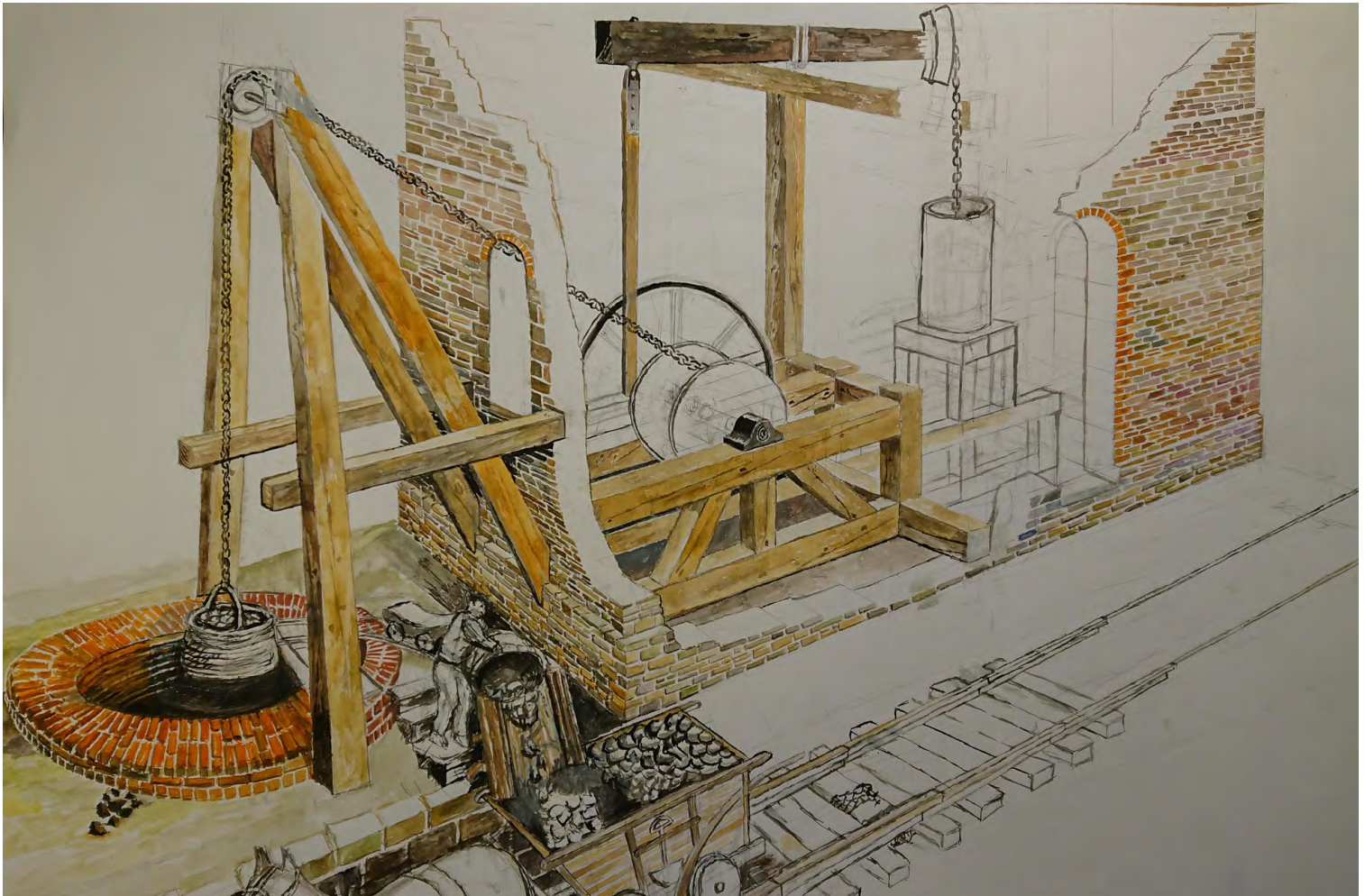
Front cover of the Swansea Canal & Early Railway Book featuring the hydraulic-lime waterproofed Twrch Aqueduct above and 1830s locomotives on an extended Scott's Colliery Railway alongside the Swansea Canal below.

One of the first steam-driven rotary engines in the world

The Newcastle engineer George Kirkhouse also built shorter railways on the western side of the navigable River Tawe, including one through a tunnel to a coal warehouse and river wharf at Landore, Swansea. The tunnel is the first recorded (1762) intermediate tunnel on a surface railway: when the Swansea Canal was constructed here in 1794-96, a shallow-arched bridge was provided to carry the railway over the waterway before a later line ran from the colliery engine house directly to the new canal.

Underground, each of the rich coal seams was extracted by a separate railway network. By 1776, the managing director of Lockwood, Morris & Co. was prompted by this intensive use to order all-iron rails from the Coalbrookdale Iron Company. Morris stated that these were the first of their kind (rather than iron-shod wooden rails). Within a few years, other local Swansea gentry coal owners were also using iron rails underground, and a distinctive type of flanged rail was developed for use underground in the locality.

As noted by the great canal historian Charles Hadfield, it was at Gwauncaegurwen, on the western fringes of the 140 miles of sur-



Gwernllwynchwyth. One of the first steam-driven rotary engines in the world (illustration by author)

face lines established as part of the Swansea Canal public railway system, that the first underground mining canal was tunnelled in 1757. This has been located in a deep gorge. The public railways, authorised under the Swansea Canal Act of 1794, were one of the most extensive networks open to all users at the time. One of the first two locomotives built by George Stephenson outside the Newcastle Coalfield operated here and two of the first public railways designed to use steam locos were connected to the canal.

The level of the first of a series of mining canal schemes in the Swansea Valley itself was determined in 1747 when the Lockwood Morris partnership drove a colliery tunnel into the hillside from their new riverside Forest Copperworks. In 1774, this was converted to an underground mining canal.

In 1787, this underground Clyn-du Canal was extended a mile south with three more copperworks alongside. The canal supplied coal from small mine boats, water for process water and possibly water power. At about the same time, a new three-mile canal on the opposite eastern side of the lower Swansea Valley had a (surviving) tunnel under the White Rock Copper smelter with side entrances to supply coal directly to the copper furnaces.

In 1794-96, the highly innovative engineer James Cockshutt built part of the Trewyddfa-Swansea Canal Line. He was the former managing & technical director of the Cyfarthfa Ironworks as it became the largest in the world and had built iron railway bridges to iron-framed rolling mills there in 1788. At Swansea he used hydraulic lime to waterproof aqueducts several years before Thomas Telford claimed to be first in doing so. The Swansea Canal was unique in providing a water-power resource that attracted new industries. The Swansea Canal engineer was still determining how much water the new canal would need during construction and used the unusual expedient of penning large expanses of water in the many indents in the steep valley side.

Ystalyfera Ironworks

Continued experiments at nearby Ynyscedwyn Ironworks in 1837 successfully applied hot blast to the anthracite iron process using a water-wheel powered blast, partly using wastewater from the canal conveyed along a navigable canal branch. This breakthrough had profound implications for the growth of the anthracite-fuelled iron industry in the UK and the USA. In the Swansea Valley, a single line of 11 blast furnaces was built into the side of the Swansea Canal at Ystalyfera, possibly the most extensive single line of such structures.



Ystalyfera Ironworks (illustration by author)

The Ystalyfera works also used canal water, and its success led to the construction of an extensive tinplate work, the largest in the world at the time.

The first water-power installation to use the ample waste water resources flowing down the canal was the newly established Clydach Iron Foundry of 1829, which used the by-wash, or bypass, channel to power a waterwheel driving a blast for a cupola furnace. Two of the earliest tinplate works (Pheasant Bush & Primrose), established in 1839 and 1844 by two brothers at what became the world centre of the industry, also used the by-wash or bypass waters of two sets of twin locks. Over two-thirds of the 36 lock platforms on the Swansea Canal were developed for water-power use. At least 44 known water-power sites are known from the canal's lock, waste-water and feeder sites.

This archaeological, architectural and historical study, comprising three substantial volumes, studies and records one of the earliest industrial landscapes. It has produced a series of discoveries that have changed perceptions of technical innovation. In 1807 the failure to develop mineral traffic to the canal on the linked Oystermouth Railway resulted in a redundant wagon being converted to operate the world's first scheduled passenger service with the first station at Swansea Ferry.

These discoveries, along with detailed background research, are detailed in this book, published jointly by the Royal Commission on the Ancient and Historical Monuments of Wales (UK) and the Swansea Canal Society and written and illustrated by Stephen Hughes.

ARQUEOLOGIA INDUSTRIAL, Vol V, no. 1

Portuguese Association for Industrial Heritage/TICCIH Portugal & the River Ave Valley Textile Industry Museum, 2024.

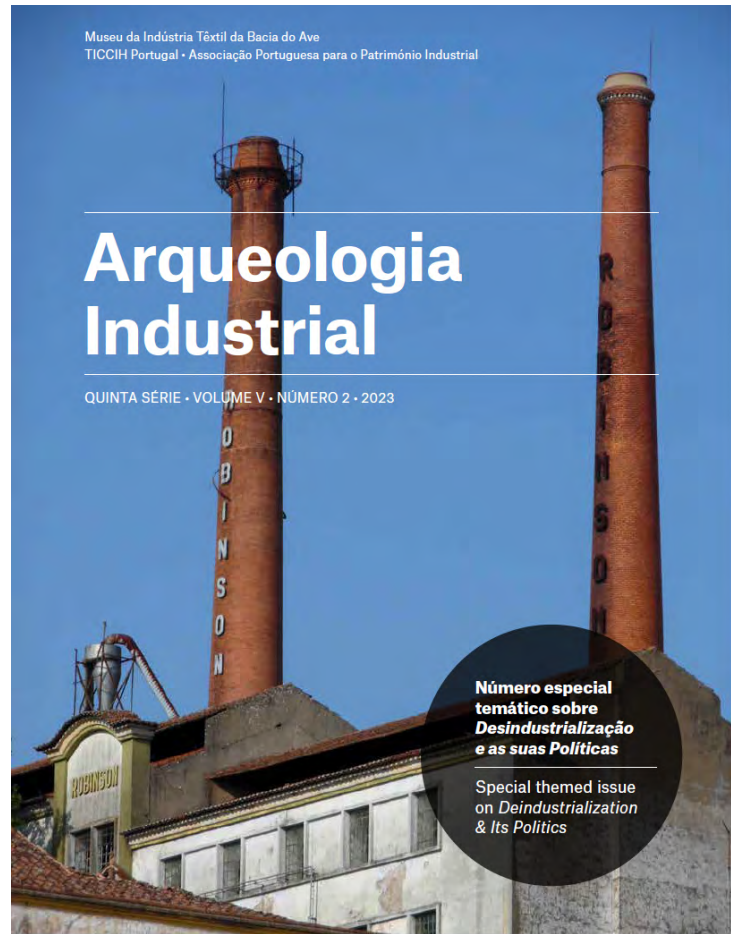
Reviewed by José Manuel Lopes Cordeiro

The Arqueologia industrial review was recently published by the Portuguese Association for Industrial Heritage/TICCIH Portugal in conjunction with the River Ave Valley Textile Industry Museum. Steven High (Concordia University, Montréal, Canada) and Maria Beatriz Andreotti (Université du Québec à Montréal, Canada) (guest editors) coordinated the publication. This issue of the review is bilingual (articles are in Portuguese and English).

In addition to the editorial, this issue contains six articles on deindustrialisation in Portugal, Brazil and Italy, as well as two reviews of recently published books on this topic. Thus, it addresses deindustrialisation from the perspective of Southern European and Global South countries.

The articles published in this issue seek to answer the following questions: What is deindustrialisation's socio-economic, environmental, and cultural impact on working-class or racialised communities? In what ways is industrial ruination a political process? What does the study of deindustrialisation offer the study of industrial archaeology and industrial heritage?

If you are interested in purchasing a copy, please [get in touch](#).



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SHOWING YOUNGER GENERATIONS WHAT WAS AND WHAT STILL REMAINS

Niels Kürstner, *Euro Industrie*. Follow his updates on *Instagram*

Niels Kürstner, growing up in a region that was one of the most industrialised areas in Europe, has not lost interest in heavy industry, mining in particular. Growing up in the mining and chemical town of Bottrop in the middle of the Ruhr region with a view of the different headframes of the Prosper Haniel colliery, the only one remaining since 1974, interest in heavy industry developed from the mid-1990s. 'Regularly, we were fascinated as children when the sheave wheels on the headframes turned. Then we knew the mine was alive, it was working,' Kürstner says.

'Like some generations in our family, I later went into mining, to which I remained faithful for almost seven years and remain today through photography. In the mining crisis that had lasted since 1957, to which the steel crisis and various other crises were added from 1973 onwards, we knew from 2007 that mining would have no future. So, in the early 2000s, I started documenting in-

dustrial photographs to show the younger generation what was and what remains.'

'Of course, the photo tours first went through the Ruhr area, but from 2010 onwards, the radius expanded to the neighbouring Aachen area and later to other parts of Germany. From 2013 onwards, photo tours to the Benelux countries followed, later to England and Scotland, Poland, the Czech Republic and finally to Italy. The range is aimed at all sectors of industry. In the meantime, I have been living in Switzerland for some time, where I started to document the textile industry, which is also almost extinct. The whole project is a never-ending story because many areas have changed over the decades or are still waiting for change. From decommissioning to demolition and then building or rebuilding a museum or refurbishing the buildings can take years or decades. So one thing is certain: it will never be boring.'

To propose the publication of your photographs in the photo column and find the publication rules, write to Francesco Antoniol at antoniol@virginiastudio.it.



Arbeds Belval Plant/Cité des Sciences, Esch sur Alzette, Luxembourg, 2015 (photo by author)



Roughing plant/Empty textile mill, Bocholt, Germany, 2020 (photo by author)



Bobrek Coking plant, Bytom, Poland, 2022 (photo by author)



Wendel I/II/III colliery, Petite Roselle, Lorraine, France, 2022 (photo by author)



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