TICCIH
The International Committee for the Conservation of the Industrial Heritage
BULLETIN
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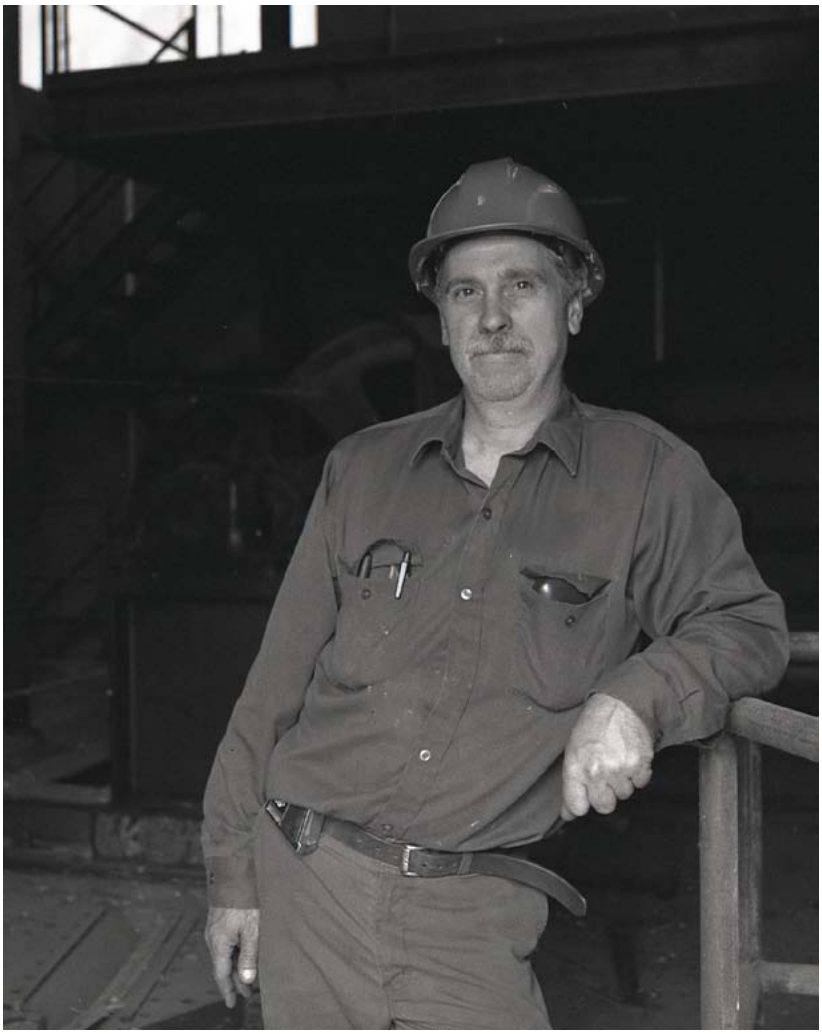

Henri Labelle, a former paper mill worker photographed in his old plant in Sturgeon Falls, Ontario (Canada), just as it was being demolished. Such experiences are the raw material of an international comparative history of deindustralisation and the role of industrial heritage (see page 5). Photo: David W. Lewis.

WHY I'M IN TICCIH . . .

Francesco Antoniol, founder and CEO of Virginia Associate Studio, National Board of AIPAI, and organiser of the global videoconference Industrial Heritage in the Covid19 Aftermath

I have known the TICCIH since 2006, the year in which the XIII Congress was held in Terni, Italy. I had recently finished the Master in Conservation, Management and Enhancement of Industrial Heritage and this was the first opportunity to showcase the activities I had recently undertaken. The inter-

est in that event, experienced as a collaborator of the organization, was particular and it was generated above all by the great variety of disciplines involved in it and the different background of the participants.

Almost 15 years later, as a new member, I appreciate that interdisciplinarity, variety of approaches and sensitivity, characteristics that can hardly be achieved in a single national association.

My work interests, in a strict sense – I am an archivist and industrial heritage consultant dealing with business archives, document management, historical research and brand heritage, as well as industrial tourism and museum exhibitions and itineraries - but also in a broader sense as a means for the development of communication and enhancement strategies, leads me to consider membership of TICCIH as an opportunity to deepen these themes. I would appreciate very much that we organize ourselves to give, for example, a definitive contribution to the interpretation, description and enhancement of business archives; this kind of heritage can often be considered as secondary to the architectural and technical one.

I therefore desire TICCIH to become a space for discussion on these issues too, a community in which, starting from different disciplinary traditions we can deal with issues such as:

- method: how to deal with complex documentaries originating from the world of work, how they are described, what are the common characteristics, such as discontinuity, what is essential and what can be selected for discarding purposes;

- standardization of the method itself (we must be able to communicate and recognize the values on which we carry out our research and description activities);

- sharing good practices in the event of an emergency in order to ensure that these assets are not dispersed but are made safe for the sake of knowledge and enhancement actions, which hopefully will be near in the future.

Obviously, all this, seasoned with a healthy light-heartedness, which can give us joy and make pleasant the dialogue in dealing with them.

FRANCESCO ANTONIOL

Now read Moulshri Joshi's reasons for joining TICCIH (page 28) and Lucía Sánchez Figueroa's (page 29).

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.ticcih.org

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

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

FIND TICCIH ONLINE: WWW.TICCIH.ORG

AND ON FACEBOOK:

JOIN US – LAUNCH OF THE TICCIH MEMBERSHIP CAMPAIGN

Marion Steiner, Secretary General, Pontificia Universidad Católica de Valparaíso, Chile

MARION STEINER

With Miles Oglethorpe taking over as TICCIH's new President in 2018 and myself as Secretary General in late 2019, a new chapter has started for TICCIH. In our previous Bulletin, Issue 88 with a fresh design, I have stated some important missions for the future of our global community. Since then, we have been busy pushing forward a range of topics with the support from the Board and our respective networks. Among these initiatives, a very important one is the TICCIH Membership Campaign, which we are proud to now officially launch with the publication of this issue of our Bulletin.

Motivated to give readers an idea about why one should actually join our community, we have collected testimonies on "Why am I a TICCIH member?", written by engaged and young people from around the world. In this issue of our Bulletin, to start with, you will find the testimonies of Francesco Antoniol from Italy, Moulshri Joshi from India and Lucía Sánchez from Venezuela.

Our campaign material is also in place now, including full-size posters in English, Spanish, Arabic and Russian. We are happy to present these here in this Bulletin No. 89. Our huge gratitude goes to Esteban Vásquez from Valparaíso for designing the posters (Esteban is also responsible for the TICCIH Bulletin's new layout launched with issue No. 88), Matthew Christopher from abandonedamerica.us for the photo credits, Margaret Hart Robinson from Gran Canaria for assisting the Spanish translation, Mirhan Damir from Alexandria/Weimar for translating into Arabic and Elena Sakovskaya in Moskow for translating into Russian. Currently, we are working on the French, Mandarin and German versions, with more languages to follow. In case you wanted to contribute with translations into your own language(s), please feel free to contact me simply by sending me an Email at the address below.

The first posters are available for download from our TICCIH website, in a new section we have created for our Membership Campaign and material. We heartily invite all members and TICCIH enthusiasts to distribute the posters digitally via their own channels and networks. Social media platforms like Facebook, LinkedIn or Instagram are especially suitable for this; and from the TICCIH Board we will also distribute the material via our channels, for example the official TICCIH Facebook page and group..

TICCIH members are encouraged to send the poster PDFs, and links to the membership campaign web page, by email to people you know who might have been interested in joining TICCIH for some time but have not yet had the time to go to our website and subscribe. Of course, you can also use the posters in a traditional analog manner, printing them out for your office doors, for example, or for producing banners to accompany events you may organize. Remember to mention the new system of differentiated subscription fees, which should suit people at all income levels in whatever region of the world.

In addition, in order to facilitate a wider insight into TICCIH topics and activities for potential members, we have decided that the current and the former issue of the Bulletin, Nos. 88 and 89, will be accessible for the general public without any restriction. This is an exception we make from the overall rule that access to the two most recent issues of the Bulletin is restricted to members only. We widen this up on this special occasion, because we firmly believe that the topics and countries covered by our bulletin are a particularly good argument for joining TICCIH, as subscription allows for permanent access to the most current information and thought in the Industrial Heritage field around the world.

Finally, I also want to take the opportunity to tell you that in our latest Board meeting held on July 13, we have set up a communication team. For the moment, apart from myself in Chile, this team consists of David Worth from South Africa (now living in France), Iain Stuart in Australia, Florence Hachez-Leroy in France and Bode Morin in the US. In the months to come, we will develop a comprehensive communication strategy for TICCIH to ensure greater visibility for our organization, mission and themes across different channels and platforms. We are very motivated to collaborate with engaged people from different countries around the world, who speak different languages and have different perspectives on industrial heritage. For any suggestions you may have on this effort, or if you yourself want to contribute your time to the work of the communications team, just send me an email and we will do our best to include you and your ideas into what we are about to build. Very aware that representatives from the Global North are still over represented in the current team, this call goes out especially to enthusiastic people in the South.

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Photo: Matthew Christopher, www.abandonedamericaus

TICCIH

THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF THE INDUSTRIAL HERITAGE

ماهي TICCIH؟

TICCIH (تيكي) هي لجنة دولية للحفاظ على التراث الصناعي وهي المنظمة العالمية الوحيدة الداعية للحفاظ على هذا التراث.
تأسست TICCIH في أوروبا في السبعينيات وقد استند تطورها علي تنظيم مؤتمرات دولية كل عامين لثلاثة أعوام.
تم تعزيز هذا التطور أيضاً من خلال سلسلة من الجلسات والاجتماعات بين متخصصين ومؤسسات دولية.

منذ أوائل الثمانينيات يقوم خبراء TICCIH بتقديم توصيات لليونسكو، عبر المجلس الدولي للمعالم والمواقع ICOMOS، بشأن إدراج المباني والمواقع الصناعية وكذلك المواقع الطبيعية ضمن مواقع التراث العالمي.

أخذت TICCIH خطوات توسعها عالمياً في السنوات الأخيرة، فقامت بافتتاح مؤتمرها الأول بآسيا في عام 2012 وبعدها لأول مرة في أمريكا اللاتينية في 2018 . ساعد هذا التوسع الدولي علي تطوير البحث والمحافظة على التراث الصناعي وانتشار هذا التخصص حول العالم.

انضم إلينا!

تعمل لجنة TICCIH كأداة فعالة للتواصل من خلال شبكة معرفية تضم أكثر من 60 دولة 500 عضو حتي الآن.

يعمل أعضاء اللجنة بالجامعات والمؤسسات العامة والثقافية والمتاحف وكذلك الشركات الخاصة.
جميع الأعضاء يتشاركون باهتمامهم الكبير بتاريخ الصناعة عموماً، وبالتالي تحدي الفهم والتعريف التقليدي للتراث الثقافي.

الموضوعات الجديدة الحالية التي أثيرت باللجنة تشمل: الدراسات النقدية بشأن العلاقات العالمية التاريخية، التناقض بين السلوك الصناعي والاستدامة، الميراث البيئي للصناعات، بما في ذلك التغير المناخي.

رسوم العضوية: 40، **30**، 20، 10 دولار/ السنة
رسوم خاصة لأعضاء ICOMOS: 10 دولار/ السنة
رسوم للطلبة والطالبات: **10**، 5 دولار/ السنة
رسوم العضوية للمؤسسات: 65 دولار/ السنة

تشمل العضوية الحصول علي نشرة TICCIH التي يتم نشرها دوريا كل ثلاثة أشهر.

تابعنا علي
facebook.com/TICCIH

للمزيد
http://ticcih.org

DEINDUSTRIALIZATION AND THE POLITICS OF OUR TIME, PART I

Steven High and Stefan Berger

—

The election of Donald Trump, Brexit and the rise of right-wing populism in other parts of Europe have focused attention on deindustrialized working-class communities, positioning them as central to an understanding of the times we live in.

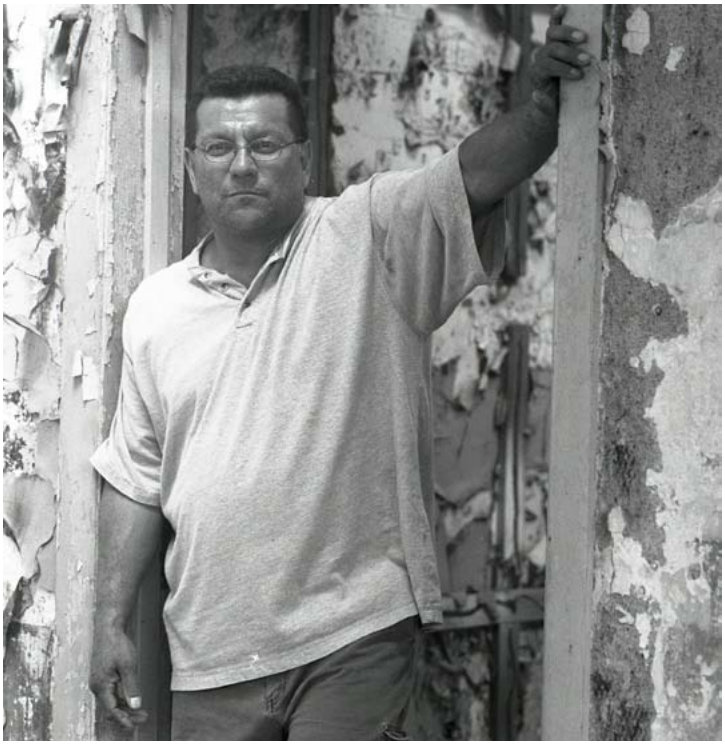
These volatile events have prompted debate and conjecture about the root causes of the current social and political upheaval but little sustained research into those industrial regions economically and geographically 'left behind.' Indeed, this popular short-hand to describe not only regions but people abandoned in deindustrialized areas has tended to promote a rather reductive understanding of the long-term legacies of deindustrialization. In most media reports, the 'left behind' are described as older, under-educated, angry, intolerant, male and white. The heroic or progressive image of workers that was espoused especially on the political left in many countries has been reduced to the negative caricature of the 'redneck' and the 'petit blanc.' In many countries sections of the left have abandoned both the language of class and what once was its core clientele. Yet, white working-class people were not the only ones to experience the seismic shifts of deindustrialization, and there is considerable debate about how race, class and gender interact in deindustrialized areas.

In some places deindustrialization is a process of physical and social ruination as well as part of a wider political project that leaves working-class communities impoverished and demoralized. Forced forgetting is an integral part of this process, as mills and factories are demolished, their production records shredded, working-class institutions crushed, and areas are recontextualized as something new. Even when interviewed long after, many industrial workers had yet to get over their feelings of anger and betrayal.

In other areas, however, deindustralisation is framed as 'structural change' (Strukturwandel in German) which offers new opportunities and a vision of the future, in which working class people are not left behind but through welfare, education and retraining given opportunities to participate in economic, social and political ways in emerging post-industrial spaces. This process is never easy and still knows many 'left behind' by deindustralisation causing dissatisfaction that can lead to support for right-wing populism.

While the political revolt in deindustrialised places is often understood as a phenomenon that crosses borders, there is still very little transregional comparative research on deindustrialisation and its legacies. These are long-term processes, so to understand them we need the deeper temporal perspective that historical research can offer.

To that end, a transnational team have initiated a new 7-year project entitled 'Deindustrialization & the Politics of Our Time.' Funded by a $2.5 million grant from Canada's Social Sciences and Humanities Research Council, the project is examining the historical roots and lived experience of deindustrialization as well as the political responses to it. The goal is to understand what Sherry Lee Linkon calls 'deindustrialization's half-life' in transregional and comparative perspective, its causes, responses to it, its effects, and legacies.



Gabriel Solano, a displaced General Motors autoworker in Detroit, photographed inside his ruined factory. Photo: David W. Lewis.

The project brings together many of the world's leading deindustrialization researchers and their respective research centres on oral history, gender history, heritage, labour studies and the sociology of work, social movements, and social history, as well as industrial heritage museums and organizations, trade unions, labour archives, an Indigenous college, and publishers. We are very excited to have TICCIH as one of our key partners.

Our primary focus is on Germany, France, Italy, the United Kingdom, United States, and Canada - countries which formed a considerable part of the aging heart of the old 'industrial world.' But wider geographic comparisons will be made, including with the global south, as the project intends to examine the global flow of ideas, people and capital.

The project will be undertaking extensive original research. Much of our focus is on oral history, as this is a way to ground our analysis in the lives of working people, but we will also delve into historical archives. For example, over the next two year, we are planning to conduct interviews with trade union leaders across our six-country area, asking them to reflect on what they have learned over their

life-times. What has 'worked' and what would they do differently?

One of the challenges in undertaking transnational research is language. We are committed to working across English, French, Italian and German as much as our budget allows. We therefore hope to contribute to the work already done by other groups, like TICCIH, in bridging linguistic divides.

Deindustrialization & the Politics of Our Time will forge new transnational bonds via Summer Institutes that bring together graduate students and other emerging researchers each year from around the world. Much of the project's funding will be going to students.

There will also be six Thematic Conferences that allow us to consider the ways that race, gender, the environment, industrial heritage, settler colonialism, among other things, inform deindustrialization's half-life and the politics of our time. Likewise, an Artist-in-Residence programme will support the creative work of grassroots artists in working-class communities and put them into contact with one another – showcasing their art to wider audiences in the process.

These conferences and the publications that result will be open to others interested in working through these issues with us. The project's website will be up this fall and we are planning a series of monthly online (Zoom) public workshops. Ultimately, the project will result in a landmark book series of six edited volumes, one from each of the thematic conferences, four monographs, as well as a collectively authored capstone book that attempts to synthesize everything we learned in the next seven years.

Examining the role and impact of industrial heritage in processes of deindustralisation will form a key aspect of Deindustrialization &the Politics of our Time. Whether and to what extent an industrial past has become heritage in different parts of the world, and what messages and narratives are being transported through heritage is tightly related to the politics of deindustrialisation. The actors involved in heritigisation do not only produce narratives of the past, but these are strongly interrelated with political standpoints in the present and invariably related to contested visions of the future. We will examine this central role of industrial heritage for the politics of deindustrialisation in the next issue of this newsletter.

Dr. Steven High, Professor of History, Centre for Oral History and Digital Storytelling (COHDS), Concordia University, Montreal, Canada, and Prof. Dr. Stefan Berger, Chair of Social History, Direktor, Institut fuer soziale Bewegungen, Ruhr-Universitaet Bochum, Germany

The Franklin rolling mill in Franklin, PA, re-rolling rail steel, in 2015.

THE STEEL INDUSTRY IS GOING AWAY

Viktor Mácha

—

Without doubt we are standing at the edge of new era marked by green energy, sustainability, hybrid steel making, less steelworkers and more automation. And that is all correct. The age of dark rumbling factories, majestic blast furnaces and hard manual work is almost over - at least in our fossil-free Western world.

Looks like we all forgot what forged the whole 20th century and built our world. Or maybe we just want to forget. It started not long ago; almost every month another mill shutdown is announced. Almost every month the forests of headframes is getting more and more sparse. This brand new world is trying to tell us that there is no space for the 'dark metallurgy' of the past. For me, as an industrial photographer who fell in love with the fascinating, yet tremendous world of steel industry 13 years ago, it is time of sorrow.

To get an impression of how alarming the situation is, here is a short list of important cases just in the first half of 2020: the wipe-out of lignite coal mines in the valley of Jiu (Romania), shutdown of legendary Zug Island integrated works in Detroit (USA), closure of traditional iron making site in Trieste (Italy), shutdown of Florange coke plant (France), closure of the hot-end at the former Ford steel plant in Dearborn (USA), gradual demolition of historical coal mines in Upper Silesia (Poland),... And the list can go on including dozens of highly endangered integrated mills from all around Europe and the USA.

Every blast furnace is different, every rolling stand is different, every headframe is different. They all reflect the time they were built, the epochal advances of production technologies and, finally, the aes-

Arcelor Mittal's integrated steel mill in Galati, Romania, 2011

thetic and cultural background of every country and region. The steel industry is beautiful, it is just a different kind of beauty what we were taught to admire.

When Greta Tunberg says that we are facing a mass extinction of species, she might be right. But one can add that we are also facing the mass extinction of structures and processes within heavy industry. And the Covid19 pandemic has only accelerated the long-lasting downturn of European and American industry. There is simply no space for Big Steel anymore. It is clear that we cannot preserve every single structure within the global steel industry. That would not make any sense. But we can leave a visual legacy at least.

Letting a photographer in to document the process of steel making and to capture the most important individual forms sounds like the simplest thing in the universe. However, speaking from over a decade-long experience in the field of the heavy industry, this is the most difficult part of all. Getting the permission can take weeks, months, or even years. Meanwhile the management is considering all the pros and cons of such documentation, and the mills are slowly closing down and disappearing. During my career I have documented almost three hundreds steel mills, foundries, forges, rolling mills, coke plants and mines. But that is just a drop in the ocean of the world steel industry. Just a small number of mills are willing to let in a photographer and only under very strict conditions, but there is still a great number of steel plants which remain completely sealed. This is a long lasting phenomenon and probably one of the reasons why the legendary couple Bernd and Hilla Bechers focused on mostly exteriors.

To understand how the modern world was born, it is absolutely necessary to leave a proper visual record. The steel industry is part of our identity. Industrial espionage, health and safety measures, different communication vision – that all should be set aside now because future generations will not care, while searching for once historical images from this suppressed part of our culture.

PR managers argue that their media libraries are full of pictures from their plants. But these images will be completely useless one day: happy worker´s faces, shiny state-of-the-art installations and production close-ups will say nothing about the true 'dark metallurgy' to those who will come after us. Objective documentary work must be prioritized over shallow image campaigns.

I started my Beauty of Steel project several years ago with one simple goal: to not let this world of steel go so easily. And after a decade of strenuous documentary work, almost half of my archive comprises sites that now no longer exist. It is clear that these sad numbers will only increase.

I would like to appeal to all steel making companies from all around the world – it is time to recognize industrial photography as a natural tool of historic science. Closing the doors to professionals on the field of industrial heritage preservation and documentation is saying no to what our ancestors left for us. Saying a NO to objective documentary work is saying a NO to our history and culture in general.

One of the causes why the steel industry is still viewed in not really a pleasing light is simple. What is sealed is not trustworthy. And we all have a great opportunity to change it now, at the dawn of the steel giants.

Viktor Mácha (1984) has been travelling around the world since 2006 at his own expense, documenting heavy industrial sites such as ironworks, steel works, rolling mills, forges, foundries and coke plants. His archive comprises of several hundred mills stretching from the American Midwest to the Asian part of Russian Urals. He cooperates with the Research Centre for Industrial Heritage in Prague and the National Heritage Institute in Ostrava. The only aim of these photographs is to objectively document the technological processes connected with steel making and shaping.

Contact the author

THE TRANSFORMATION OF STEELMAKING

Norbert Tempel, Associate Editor of the Industriekultur Journal; technical consultation Martin Gantenberg

[Adopted from IndustrieKultur, issue 3, 2019 – focus iron & steel industry]

Until very recently, the landmarks of Europe's major coal and steel regions were integrated iron and steel plants in which coking, hot metal production, steel making and rolling mills were closely interlinked. Increasing concentration and current technological developments to avoid carbon dioxide emissions will totally change the shape of the steel industry during the next two or three decades.

The transformation of steelmaking locations, especially integrated steel plants with the classical process line of blast furnace and basic oxygen furnace (converter, 'BOF shop'), is both influenced by technological developments and driven by economic considerations. The formation of global acting companies with increased purchasing potential for raw materials and 'portfolio streamlining with a focus on sales markets' - in other words, concentration on a few, cost-optimized locations - play a major role here.

Overcapacity in the steel market

Between 1990 and 2017, the production of steel more than doubled. The discussion on how to solve the problem of worldwide overcapacity, estimated at the beginning of 2019 by the European Iron and Steel Industry Association (Eurofer) at around 550 million tons of crude steel per year, will have a further impact on the design of mill sites in terms of their characteristics, scope and structure. By way of comparison: total production of the 28 EU states (incl. UK) alone averages 170 million tons per year. According to the Worldsteel Association, global annual crude steel production in 2017 was 1,689 million tons. China alone accounted for 831.8 million tons of this. China's production volume increased twelvefold between 1990 and 2017, and the available production capacities create an oversupply that does not correspond to actual global demand. One of the main reasons is the slow consolidation of global plant capacities or sites, which means that the rapid increase in world steel production is continuing unabated.

In addition to energy and raw material costs, the transport of raw materials and products is a major cost factor in steel production and plays a dominant role in the location and design of plants. As most raw materials, such as ore and coal, are purchased by sea, coastal locations with their seaports naturally have a cost advantage. This tendency could already be observed in the past with the closure of entire steel plants in Europe, with a negative effect on the diversity of locations around the world.

The steel mill

The classic steel mill is an integrated works consisting of the coking plant, the blast furnace plant, the converter plant (BOF-shop), the secondary metallurgy and rolling mills for final products. In special cases, this also includes mining operations for coal or ore, sinter plants and foundries. The main inputs of an integrated plant are ore, coke and lime; the end products are flat steel, steel profiles and slabs. In the Ruhr area of western Germany, the coke blast furnace spread massively from the 1850s and contributed to the rapid growth of the region.

Today, there are also steelplants without blast furnaces, which produce steel from scrap in electric arc furnaces. The very first electric arc furnace based on the system of the French chemist Paul Héroult was operated by the Lindenberg company in Remscheid-Hasten in 1906. This furnace is preserved in the German Tool Museum in Remscheid. Until the 1960s, the use of electric furnaces was re-

The blast furnaces Hamborn No. 8, 7, 6 and 4 (from left to right) in 1993, part of the integrated steelworks of ThyssenKrupp Steel Europe in Duisburg - the largest producer of steel in Western Europe. Today, with No. 9 (not in the picture) and the even larger furnaces Schwelgern No. 1 and 2 they produce 30,000 tons of crude iron a day. Carbon-free iron and steel production will radically reshape the appearance of the plants within the next two or three decades. Photo: Thomas Pflaum

served for the production of stainless steels due to their high operating costs. Today, there are 14 larger plants operating in Germany.

Significant changes have taken place over the past decades, particularly in Europe. In the context of globalization and the mergers of former independent mills or steel companies into global players driven by economic aspects, the industrial landscape has also changed. iron ore mining has largely come to a standstill In Europe, apart from the Austrian Erzberg and the Kiruna district in northern Sweden. Coking coal now comes from Poland, Russia and overseas. Entire classic coal mining areas have disappeared or are undergoing profound changes.

Steelmill landscapes

It has not always been only economic reasons that have led to changes in the productive industrial landscape, but technological developments in the respective production stages of hot metal and steel production have had a decisive influence. Over the last 50 years, considerable changes and technological developments and improvements have taken place, especially in the field of blast furnace technology, which plays a dominant role - also visually - in the steps of steel production. A comparison of the production figures from 1959 and the number of blast furnaces in operation compared with today's figures and production volume is a significant proof: In western Germany, 131 blast furnaces produced 18 million tons of pig iron in 1959. In 2011, only 13 blast furnaces were needed for 25.6 million tons of hot metal. Compared to the units of the 1950s and 1960s, the modern blast furnaces productivity is higher and more efficient in terms of consumption of reducing agents thanks to various technical improvements and developments.

In addition to improved blast furnace process know how, the most significant innovations to increase furnace performance and productivity included the introduction of the counter-pressure principle in blast furnace operation. This consisted mainly in the development of the bell-less top closure, which also allows improved charging of the raw materials to optimize process control. The enormous blast

The afternoon shift starting work at the Dneprovskiy Dzerzhinsky Metallurgical Plant (DMKD) in Ukraine. The steel plant in Dneprodzerzhinsk was founded in 1887 on the banks of Ukraine's largest river, the Dnepr, supplied with coal from the Donezk basin and iron ore from Krivoy Rog. In October 2019 the company decided to close large parts of the production capacity due to low demand. Photo: Viktor Mácha

furnace top constructions, which were necessary for the maintenance work on the bell top, could now be much smaller and have changed the external appearance of the blast furnaces. In addition, increased hot blast temperatures of around 1250 degrees Celsius are now possible through optimizations in the refractory material and the design of high-temperature hot blast stoves. Durability, which in the case of the blast furnace is referred to as the duration of the furnace campaign life, has been significantly improved by material developments in blast furnace refractory lining, but also by improved cooling concepts and new cooling elements of the blast furnace vessel, so that today a furnace campaign life can last 15-20 years. Improved knowledge of process control and optimization of the entire heat management system have led to increased performance and extended service life, so that an integrated steel mill can ensure steel production with only two blast furnaces. The introduction of the injection of substitute fuels, such as oil and pulverized coal, ensures significant savings in expensive coke. These technical processes have changed the shape of the mills and increased their productivity and profitability.

Improvements in subsequent process stages in steel production and further processing have had an impact on the metallurgical landscape and the design of steelplants. An example is the Linz-Donawitz (LD) process for converter operation, which has completely replaced the Siemens Martin and Thomas steelplants. Continuous casting process has largely replaced ingot casting. Most of the handling equipment for the ingot moulds like stripper cranes and deep furnaces have disappeared. Thin strip casting as production optimization in the so-called downstream area of the iron and steel plants for flat steel production plays an important role in modern steel production.

Energy recovery and recycling

The permanent efforts to achieve sustainability in the production process for steel plays a dominant role: For example, the recovery of process gases both from the coking plant, blast furnace and converter and their use in the steelplants gas network for heating

purposes or as fuel for energy generation. Furthermore the heat recovery in several units optimizes the plant efficiency and is part of the sustainable approach in steel making.

The by-products and dust are also recovered and fed into the hot metal production process via the sinter plant. The blast furnace slag is completely recovered, processed into granulated slag and used in the cement industry as a substitute for cement clinker. This significantly reduces the carbon dioxide (CO2) emissions of the cement industry.

The steel manufacturing process shows that the sustainability has been improved over the decades by process optimizations to reduce the internal scrap cycle and the utilization of scrap in the BOF shop and electric arc furnaces.

In an electric arc furnace-based steel mill, steel scrap is the actual raw material and is sourced from the commercially available steel scrap. Since not all alloy impurities can be separated from the steel by the metallurgical processes in the electric arc furnace, a minimum quantity of uncontaminated iron carriers is always required to produce certain steel varieties, especially high-grade steel qualities.

Green steel without blast furnaces?

Due to the carbon-based process in steel production, the steel industry certainly requires changes in the technical processes to reduce CO2 emissions to a minimum. Today, the steel industry accounts for approximately 6% of the total global CO2 emissions. The reduction of iron ore to iron can also be achieved by direct reduction process as an alternative to the blast furnace. In the direct reduction processes, reformed natural gas is used to reduce the ore in a shaft furnace. The hydrogen and carbon present in the natural gas are used to reduce the iron ore to sponge iron. This process achieves metallization levels of more than 90 percent. However, CO2 is still produced when natural gas is used. A virtually CO2-free direct reduction can only be achieved with pure 'green' hydrogen, which must then be produced in a climate-neutral way. One possible process for this can be electrolysis using environmentally friendly electricity. The Voestalpinesteel company is building the world's largest hydrogen electrolysis plant in Linz, Austria. In Germany, CO2-free steel production in 2050 would require 130 TWh of electricity from wind power plants with a total capacity of 58,000 MW. This corresponds to 12,000 onshore wind turbines of the 5 MW type, an increase of 40% over today.

Currently, there are various projects both on the part of the plant operators and on the part of the plant builders to develop technical concepts and solutions for alternative steel production with minimum carbon dioxide emissions. The aim is to enable a step-by-step reduction of CO2 emissions in hot metal and steel production. In the final stage of this conversion the coke plant, blast furnace and the BOF-shop will be completely replaced. Already today, direct reduction of iron oxide pellets is used in countries where methane gas is cost-efficiently available. In principle, these plants can be converted with technical modifications to use up to 100 % hydrogen. The sponge iron is converted into steel in a next process step in electric arc furnaces. The CO2 neutral steel manufacturing can be achieved if the electrical power needed to operate the electric arc furnace will be produced by renewable CO2-free power generation.

In recent press releases, Thyssen-Krupp Steel Europe AG has set itself the target of producing steel without blast furnaces from 2050 based on direct reduction plants and electric arc furnaces. The Salzgitter Group, like other European steel producers, is pursuing a similar strategy for low CO2 steel production. The introduction of the new process steps naturally entails enormous technological and economic changes, which can only have a positive effect if power generation is also CO2-neutral and if all operators globally implement these changes. Fully hydrogen-based processes are estimated to be 30% more expensive than conventional steel production via the blast furnace route.

There is still a long way to go with many new questions and technological developments, which will ultimately also change the face of the operating industrial sites and in particular that of the steel industry.

Contact the author

INDIA

INDIAN STEAM RAILWAY SOCIETY

Ranjit Virdi and J L Singh

The Indian Steam Railway Society (ISRS) was formed on 23 October 1999 when a group of like-minded persons met and discussed the present scenario and future possibilities regarding the preservation of Indian Steam. Subsequently, a formal non-profit society was registered with the Registrar of Societies, Delhi, under the Societies Registration Act XXI of 1860, on 22 December 1999.

The main purpose of the new society was to form a common platform for Indian steam railway enthusiasts to exchange views and further their knowledge on the subject. The society would also interact with the Indian Railway Board for more steam tourism and preservation of steam in general. In other words, the formation of ISRS was linked with the conscious desire of steam locomotive enthusiasts to work proactively for the important heritage of steam locomotion preservation before it is lost to coming generations. The steam locomotive is an important part of the country's industrial heritage and it was the steam locomotive that was instrumental in developing mechanical engineering as we know it today in the country.

Steam locomotives currently in use on the Darjeeling Himalayan Railway, a 2 ft narrow-gauge railway. Built by Sharp, Stewart and Company and later the North British Locomotive Company between 1889 and 1925. Photo: Syed Sajidul Islam

The objectives of the society are to promote interest in and share the knowledge of Indian Railways steam heritage and current developments amongst steam railway enthusiasts by bringing them onto a common platform.

The ISRS is now two decades old. In this period it has striven to achieve its objectives. Members of the society meet on the second Sunday of each month in New Delhi to exchange views and consider ways and means to promote the preservation and activation of steam in the country. Since the last two months, this monthly meeting has been conducted online so that members from all over the country can participate.

One of the primary activities of the society has been the organisation of a National Steam Congress each year. Currently, the Congress is conducted in the month of November, although it used to be organised in the following February in the past. This year, owing to the Covid-19 pandemic and the resultant lockdowns and restrictions, it may revert to a February meeting. The 17th edition of the Congress was conducted in November 2019.

Normally eminent speakers are invited for the Congress, including many from foreign countries. Many of the keynote speakers have been invited from the UK as this country is leading the world in steam preservation and operation of heritage trains. The society normally releases an Annual brochure during the course of Congress as well as a calendar. Awards are given to persons who have contributed to steam preservation or operation in the previous year. A steam run is also organised as part of the Congress. In the last few years, this run has been to the Steam Heritage Shed at Rewari. The special train for the run has been hauled by either a WP class steam locomotive or the 'Fairy Queen', the world's oldest working locomotive.

The credit for starting the steam preservation and tourism movement in the country definitely goes to Ashwani Lohani, the current Working President of the society. It was his efforts when he was Director of the National Rail Museum that saw the resurrection of the Fairy Queen and it being recognised by the Guinness Book of Records as the world's oldest working locomotive. He was also the main architect in the setting up of the Steam Heritage Shed at Rewari where 12 locomotive in steam are preserved and maintained. Four of these locomotives are Meter Gauge, while the rest are Broad Gauge.

The working of the society is overseen by an Executive Committee whose Chief Patron is the Member Rolling Stock of the Indian Railway Board. The Patron is the Director of the National Rail Mu-

seum. The Committee itself comprises of a President (R S Virdi is the present incumbent), a Vice President (Sir Mark Tully), a Working President (Ashwani Lohani), a Secretary (G Shankar), a Joint Secretary (Dileep Prakash) and a Treasurer (P J Singh). There are three other members and an Editor for the Annual Journal.

The last few years have seen a number of steam locomotives being brought back to life and working. Chief among them has been the working of 'The Express', EIR 21, a sister locomotive of the 'Fairy Queen' and now a claimant to being the world's oldest working locomotive. It is working regularly on heritage runs on Southern Railway. Another is the 'Ramgotty', an 1862-built locomotive resurrected in 2018. Yet another is the Bayern Garratt of the South Eastern Railway that has been brought back to steam once again. There are innumerable other examples of steam continuing to run in the country.

There are two sections where steam is still providing commercial services. One is the Darjeeling Himalayan Railway and the other is the Nilgiri Mountain Railway. Thanks to the lobbying by ISRS and other steam heritage lovers, the Indian Railways is continuing some services on these two railways with steam locomotives. The primary purpose of running these steam trains is tourism along with steam preservation. The Golden Rock Workshop at Thiruchirapalli has even built new steam locomotives for the Nilgiri Mountain Railway. Efforts are being made to have regular timetabled steam runs in other parts of the country as well.

ISRS is delighted to be a part of the TICCIH network and invites the members to join ISRS and its endeavours in railway heritage.

AUSTRIA

HERITAGE ALERT: ACHENSEEBAHN NARROW GAUGE RAILWAY

Günter Dinhobl, TICCIH Austria, ICOMOS Austria, and Herbert Klein, ICOMOS Austria

Steam locomotive for rack and adhesion operation on transfer table in station Jenbach Photo: Gunter Mackinger

The Achenseebahn is a unique narrow gauge rack railway with a length of nearly seven km. In the federal state of Tyrol in Austria, the railway was opened for touristic reasons with a ceremony on June 6th, 1889 and is still authentically in operation. Various original buildings are in place and the original equipment, steam locomotives, carriages, machinery and workshops for maintenance, are almost unaltered and in use for 130 years. It illustrates in an impressive way a complete railway system with all the typical elements of the late 19th century. Hardly any other railways allows passengers to experience the rail operations of the early days so closely and in so genuine a way - the trains still do not have electric light and have hardly been modernized - and the line is embedded remarkably in the surrounding landscape.

But in March 2020, bankruptcy proceedings started, and regional newspapers reported plans to sell pieces of the railroad across the world. Legal protection of the railway ensemble as a unit seemed impossible under the current national law, and not even individual buildings or rolling stock of the Achenseebahn are currently protected by law. Due to an altered policy of the Federal Monuments Authority Austria (BDA) a proceeding to protect the Achenseebahn as a complete technical ensemble is under way. The law would enable it, but this has never been done before.

ICOMOS Heritage alert

All this leads to coordinated action of the national committees of ICOMOS and TICCIH. The ICOMOS Heritage Alert is a systematized process using ICOMOS' networks to draw attention to threatened cultural heritage, and promotes good conservation solutions. While ICOMOS Austria used the instrument of a Heritage Alert to gain attention of the responsible and relevant actors, TICCIH Austria provided support with its expertise. Within a short time, experts of TICCIH Austria and ICOMOS Austria filled in the Heritage Alert template and transmitted it to ICOMOS in Paris.

ICOMOS and TICCIH both sent letters to the government of Tyrol, to the court of Justice in Tyrol which is responsible for the bankruptcy proceedings, to the lawyer of the bankruptcy proceeding, to the railway company, to the Austrian federal ministry of culture, to the head of the BDA and also to the Austrian UNESCO commission. For TICCIH, president Miles Oglethorpe appealed in his letter: 'TICCIH therefore believes that allowing the Achenseebahn and its component parts to be sold, broken up and dispersed would represent a serious cultural loss and would cause significant reputational harm at an international level. It would also be an extraordinary waste of a valuable cultural asset.'

Railway bridge No 13in rack section near village Ebenwith a simple style of skewed arch Photo: Günter Dinhobl

The Achenseebahn is the oldest still existing tourist railway, the oldest still existing rack railway and the last existing rack railway according to the 'Riggenbach' technological system in Austria. The fleet of the rolling stock includes four steam locomotives with unique adhesion and gear technology, seven passenger carriages from the early days of the railway (1886 to 1907), and two open and one closed freight wagons (1886 to 1926).

The line runs from Jenbach (Inn valley) to Seespitz at Achensee (lake) with its excursion shipping. It is a combined rack and adhesion railway built for tourism and public transport to link the remote high valley around the Achensee to the Lower Inn Valley economic area, with the Jenbach mainline station. The Achenseebahn starts as a cogwheel railway in Jenbach, then rises very steeply to Eben, where the rack section ends after 3.4 km and covers the remaining 3.1 km as an adhesion railway. The line was built very economically and has no big structural buildings like bridges or tunnels.

With its length of 6.8 km, its narrow gauge, the combined rack/railway system, the rolling stock and the workshop for maintenance and renewal, the Achenseebahn still forms the same independently railway ensemble since it was built. Renewals are mostly because of wear, like every technical system in use.

In April 2020 the Austrian ministry of culture commissioned an expert opinion of the Achenseebahn including an international comparison and suggestions for further steps. As there were no alterations in either track and buildings or in the rolling stock, it is a unique sample of the construction of secondary railways in the 19th century. Comparable railways from the 1880/90s with the same technology - Gaisbergbahn in Salzburg/Austria, 1887-1928; Funchal at Madeira/Portugal, 1893-1943; Tschirmer See Bahn/today Slovakia, 1896-1932 - were all closed and demolished after approximately 50 years due to the aging of the technology and the lack of modernization. The lack of alternative economic activities in the structurally weak Tyrolean region at the time is why this railway still exists.

TICCIH

THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF THE INDUSTRIAL HERITAGE

Photo: Matthew Christopher, www.abandonedamerica.us

WHO'S TICCIH ?

The International Committee for the Conservation of the Industrial Heritage is the only existing world organization on Industrial Heritage. Founded in the 1970s in Europe, its development has been based on major international congresses every two or three years. These have been supplemented by specialized conferences and meetings that strengthened personal and institutional contacts across national borders.

Since the early 1980s, TICCIH experts – via ICOMOS, the International Council for Monuments and Sites – have been advising UNESCO on industrial buildings, sites and landscapes to be included among World Heritage sites.

With the inaugural Asian world congress held in 2012 and the first in Latin America in 2018, TICCIH has been going global in recent years. The research, conservation and dissemination of Industrial Heritage is today developing at full speed around the world.

JOIN US !

The Committee is also a viable tool for communication in a network that now counts more than 60 countries and 500 members.

Members of TICCIH come from universities, public and cultural institutions, museums and private businesses. They share a great interest in the history of industry, thus challenging the traditional understanding of Cultural Heritage.

Current new topics raised include critical interrogations on global historical interdependencies, the contradiction between industrial behaviour and sustainability, and the environmental legacies of industry, including climate change.

Individual membership fee:	40, **30**, 20 or 10 USD / year
Special fee for ICOMOS members:	10 USD / year
Fee for students:	**10** or 5 USD / year
Institutional membership:	65 USD / year

Membership includes access to the TICCIH Bulletin published quarterly.

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Photo-montage of the Sassoon Dock

INDIA

CRAFTING ART DISTRICTS WITHIN INDUSTRIAL SITES

Priyanka Panjwani, Conservation Architect

Bombay (now Mumbai) once existed as a set of scattered islands. Its re-configuration and economic drive during the 19th century cotton trade made it popular as 'Cottonopolis' or 'Manchester of the East'. Philanthropists were created out of wealthy merchants who had profited from the trade. They activated the city by re-claiming it and investing in infrastructure such as schools, hospitals, temples, building docks, engineering mills, etc. The industrial sites were a source of livelihood for people who migrated from across the country. These industries flourished with activity but it is an irony that today, many decades later, several of these structures lie abandoned in a derelict condition.

The Baghdadi Jewish Sassoon family which made its fortune in Bombay since 1832 donated money for many projects in the city. Two sites that once belonged to the illustrious Sassoon family

Photo-montage of the India United Mills

have been realised as cultural assets through new art projects in recent years.

Bombay's naturally deep-water harbour played a significant role in its global business associations. Bombay's first dry dock was built in 1748 and its first commercial wet dock, the Sassoon Dock at Colaba, was constructed in 1875. It was owned by Sir Albert Sassoon, the eldest son of David Sassoon. Initially, this was a small dock excavated out of solid rock and designed to accommodate a maximum of five ships. Later, more land was reclaimed and it was expanded to include services such as loading and unloading of freight, cargo, warehousing, consigning, customs-clearing, insurance, outward clearing, registering etc. in order to promote trade. The Mumbai Port Trust which was constituted in 1873 purchased the dock land on behalf of the government in 1879, and many new docks were built using it as a model.

Today the Sassoon Docks is the oldest and largest wholesale fish market, a very lively place with several colourful fishing trawlers at its dock and native 'Koli' fishermen and women going about their daily routines with much fervour. Along with its history and architecture, the sight, sound and smell of the Sassoon Dock are characteristic elements of the place. In 2017, approximately 13 acres (5.2 hectares) of the dock lands along with the adjoining fish markets and warehouses were selected as a site for an urban art project by St+Art India, a group of artists, graphic designers from India, France, Singapore, Australia etc. The waterfront site was made open for two months with help of the Port Trust, some structures were cleared, repaired and gradually infused with an experiential rhetoric that celebrated the community and the industry. Large gable walls of eight warehouses were painted with the images of the workers still engage with the local community.

Post the success of the art project, the Sassoon Docks were proposed for a New Dock Modernization project in 2018 and it included deepening of the old Sassoon and Victoria basins, restoration of the existing structures, streamlining of fishing activities and tourism through the establishment of a museum, audio-visual centre and library, modern cold storage facility, efficient transport terminal etc. The fish landing site is being managed by the Mumbai Port Trust and the Fisheries Department of the Government who will jointly execute the project.

India United Mills was formerly an oil mill owned by the Tata family on a large expanse of land in central Mumbai. The site was purchased by David Sassoon's son E. D. Sassoon and a textile mill opened in 1869. It became Bombay's largest private employer when World War II broke out, and at its peak the mills employed over 6000 workers and produced a variety of dhotis, saris and shirting. The group of India United Mills (formerly Alexandra & E.D. Sassoon Spinning and Weaving Mills) were nationalised in 1974 by the National Textile Corporation.

Most of Mumbai's mill lands fell into disrepair following the 1982 Great Bombay Textile Strike and only a few were redeveloped. Now managed by the Mumbai Municipal Corporation, the India United Textile Mill nos. 2, 3 is proposed for conservation and adaptive reuse into a textile village and museum.

The India United Mill nos. 2, 3 is spread across approximately 15 acres (6 hectares) and contains spinning and weaving sheds, cooling pond, storage areas for cotton bales and a large brick chimney that overlooks the site. The simple neo-classical facades are robustly built, have large floor plates and are architecturally remarkable. After the mills closed down, the spaces were left abandoned for several years. The humid climate of Mumbai is not favourable for the thick brick and lime plaster buildings which have faced many seasons of vegetative overgrowth, floor to ceiling cracks, spalling of plaster and rusting of interior cast-iron support systems. The roofing elements have undergone severe damage and the site condition has significantly deteriorated with a risk of collapse.

The textile mill project aims to regenerate the site and embody the ethos of the Mill Village (or Girangaon) that existed in early 19th century Bombay. The multilayered site is being managed in incremental phases and aims to give visitors the experience of life and work in the cotton mills, a glimpse into the industrial heritage of the city through traditional hand looms and modern electric power looms. The Grade II and III listed structures are planned to be linked in order to exhibit the story of the cotton trade in a holistic village made up of an orientation centre, a museum, a library, public plaza, an amphitheatre, water fountains with light and sound shows and food kiosks. The textile village and museum project is an incredible opportunity to salvage the vulnerable building shells and revive the memories that are etched in the city's history.

Mumbai city's well known Kalaghoda Art Precinct annually converges huge crowds towards its many activities within museums, art galleries, exhibition stalls etc. It is popular for bringing citizens together for a week-long arts and design festival spread across multiple venues borrowed for enjoyment and cultural appreciation. Through juxtaposition between old and new, place making, retrofit and reuse, this concept is being extended to industrial spaces in the city. In a city that is short of space at many levels, the socio-economic potential of the industrial heritage sites is considered in their up gradation and conversion into multi-purpose creative spaces. Art is used as a viable medium to craft the once active and now empty shells of workspaces into social venues and interactive environments. The two sites demonstrate an approach to stimulate Mumbai's cosmopolitan and enterprising spirit and give hope for revitalization of other vast industrial sites in the city and the country.

RUSSIA

RECONSTRUCTION OF NON-FERROUS METAL REFINERY, YEKATERINBURG

Nadezhda Solonina and Olga Shipitsyna, Urals State University of Architecture and Arts

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Two contrasting parts from the non-ferrous metal refinery in the historical center of Yekaterinburg city have been given striking post-industrial new roles. The private refinery was founded in 1916 and belonged to Nikolae-Pavdinskiy mining district of the Urals. It saw the first production of the pure platinum metals in Russia, such as palladium (since 1922), iridium (1923), rhodium (1925), osmium (1927), and ruthenium (1930). In 1941 the Platinapribor works was evacuated from Moscow and attached to the refinery site. Due to this, the plant's capacity was increased. In the late 1950s, the non-ferrous metal refinery became the base organization for the standardization of precious metals, alloys and industrial products from them.

The refinery was moved in 2007. Having successfully worked for decades, it was moved out of Yekaterinburg to the satellite-city Verchniaya Pyshma, in accordance with the new city master plan, which provides for the removal of enterprises out of the city center.

Two buildings which were actively used throughout the 20th century and now became architecturally valuable remain from the plant. The old red brick building of 1916 is recognized as an architectural monument. The office building was built in the late 1960s using of design principles of the famous architect Le Corbusier such as tape horizontal glazing and free ground plan. At about the same

ABOVE
The non-ferrous metal refinery built in 1916.

LEFT
Concrete pylons of the office building revealed the façade of the old factory building.

period, the beginning of the 1970s, the first attempt in Russia to re-industrialize the industrial heritage was realized. This was the reconstruction of the factory hospital buildings of the Yekaterinburg Iron works into Museum of Fine Arts. That was when architects first paid attention to the historical industrial architecture of the Urals (historically formed industrial region of Russia) in the context of its reconstruction, preservation and further use.

The industrial quarter was reformatted in 2010s in accordance with the Yekaterinburg master plan. The brick building of the first plant, together with the administrative building, included the first residential complex Glavny prospect. Moreover, the administrative building of the 1960's was empty until 2010, and offices were located only on the ground floors of the building. The old refinery building at that time was in dilapidated condition and required urgent restoration. The first floor was covered with earth, while the upper floors were not exploitable due to the poor condition of the supporting structures.

In the process of the industrial site renovation, facades of the old building were restored with the strengthening and partial replacement of facing materials. The old building connected to the renovated office building, turned into dwellings, by new atrium space where is located a part of gallery and free space for guests. The historical image was returned to the building of the refinery. Restored building named a Loft Gallery where presentations, concerts and exhibition are held, while in the cellars of the refinery there is a museum part, containing historical exhibits and an exposition dedicated to the gold mining in the Urals.

In the process of re-profiling industrial facilities, a multifunctional center was created that combines residential, cultural and social functions. There are studio apartments and penthouses. High-quality re-profiling made it possible to preserve the dominant object for this part of the historical center of Yekaterinburg, and the city to retain a valuable object of industrial heritage.

One of the facades of the old refinery building was included in the interior atrium of the 1960s office.

INDUSTRIAL HERITAGE AND POST-COVID TOURISM

Margaret Hart

At the moment of writing it is still uncertain what will be the post-Covid-19 scenario. What is certain is that global tourism, the leisure pursuit non plus ultra offering chance encounters, new experiences and fresh horizons, has been gravely damaged by the general insecurity caused by the pandemic, with modes of transport viewed with fearful suspicion, as economic prerogatives of scale appear to prevail over consumers' health issues, making non-essential travel certainly less attractive.

This is good news for heritage and for preservation of culture and identity, despite first appearances to the contrary. What was bad for heritage/culture and preservation of identity was over-tourism and mass excursions with no economic benefits for the host communities. Cruise trips exploited both the human and heritage resources, tangible and intangible, of the places they were visiting, releasing, for example, 18,000 tourists into Venice at the same time, causing the Venetians to move out en-masse and their heritage to be potentially abandoned. And the same is applicable for Barcelona and elsewhere where cruise day-trippers have been released on an unsuspecting public and unprotected heritage.

These are not the 'golden hordes' that the academics of tourism (Turner and Krippendorf, for example) issued caveats about. In pursuit of their cultural prey, tourists brought in much-needed revenue. These are irresponsible hordes of fast-food culture consumers and grey 'selfy' vandals, leaving problems of waste, traffic, living condi-

The late-18th century textile complex, now hotel and conference centre, New Lanark Mills in Scotland, UK, a World Heritage site managed by the New Lanark Trust.

tions and prices in their wake. Over-tourism is beyond the load capacity and tempo of the place visited, and no identity, culture or heritage can survive without due care or economic returns for the whole host community. No one should have to pay for tourists to visit them, or be compelled to abandon their place of residence for this to occur. All places need a community to preserve and upkeep the 'sense of place', people with rooted invested emotion in their heritage and its upkeep, and communities need a place with minimum essential sentimental associations to survive and prosper, to settle down, as the inimitable Jane Jacobs once said.

Over-tourism, of course, is hardly a problem that industrial heritage usually has to deal with, or at least not as traditionally categorised (might defunct hotels and airports represent the industrial heritage of tomorrow?). This is truer of countries with desirable climate conditions and landscapes as their major attraction, where industrial heritage figures only slightly on the tourist perception. In such cases, industrial heritage will only attract a small proportion of the tourists unless it has been skilfully interwoven into the overall context of the city (such as in Nantes) and not hidden away like a dirty secret (East London being the classic case).

However, loss of community is a major problem for industrial heritage, with many places in Scotland, for example, having largely disappeared off the perception map when the mines or mills closed down and population dwindled. This fall-out effect of population loss in the rural areas where communities sprang up around the industries based on their resources, now redundant, constitutes a problem worldwide. This situation has led to rural Spain, for example, being a major item on the government's agenda, with only 5% of the Spanish population lives in over 53% of the territory, the other 95% focusing on the urban centres. 'Rural' environments went from being thriving hubs of employment and celebration of community, poles of attraction for people to 'settle down', to being associated with dilapidation and depression, 'grey' instead of 'green'. Industrial heritage preservationists have done priceless work in 'rescuing' memories,

preserving archives and opening museums in a valiant endeavour to prevent the re-writing of history and the loss of identity and roots, while attempting to attract some economic activity back to the areas, injecting new life (and hopefully community with invested aspirations) into rundown places through the tourism generated.

COVID-19 may seem to have put a stop on all hopes in that direction. But it is a perception rather than a reality. COVID-19, albeit tragic and in many cases misgoverned, may pave the way for communities to return to their 'roots' and to activate their existing resources creatively in the new circular economy, where everything (and everybody) that can be recycled and up-cycled should be, including tourism and heritage interpretation of our industrial past and its future. It is time to move from passive and often thoughtless consumption of places (Urry) to active place making and regeneration. And to quote again the 'place*maker' Jane Jacobs again, 'Old ideas can sometimes use new buildings. New ideas must use old buildings': trust in place and community life must be rebuilt from the resources available.

So now is the time for industrial heritage to act as hubs for rural place-making and re-contextualisation in the 'new normal'. Cities are large-scale dysfunctional spaces (sometimes not even 'places') and will take a long time to come out of confinement and to create the new social ecosystems adapted to times when places are only as safe an investment as their State health provisions and community solidarity. And new tourism will be based on 'staycations' in places where people feel safe socially and are treated like 'valuable' members of the community.

When we consider rural industrial heritage as an asset (large structures with enormous potential for repurposing to new ends) and collective creativity/solidarity as a basic and scarce resource, (an association natural to industrial populations) there are ways to attract community and clean energy activities, circular economy models generating long-term activity and investment (industrial design based on biomimicry, for example, or bio-medicine and nutriceutics, permaculture, hydroponics and vertical gardens), to create international communities of interest and specialist residential tourism (responsible brain trusts and foundations). The true resources of any place lie in its natural assets and potential for community-building as a result of imaginative (resourceful) interpretation and recycling of its own unique tangible and intangible heritage. Tele-working is here to stay and healthy working environments are in demand. Utopias (places where you feel you belong and are valued/valuable) are possible and for realists (see Rutger Bregman). Robert Owen made it work in the past and the UNESCO World Heritage of New Lanark stands as proud testimony to that fact. It's up to us to get industrial heritage working to make places 'work' again through new ecosystems of tourism.

ARGENTINA

THERMOELECTRIC POWER PLANT RECOVERED

Martinelli Oriana, Faculty of Architecture and Urbanism, National University of Tucumán

Electricity was a resource that impacted societies, changing their customs and their culture. Its discovery encouraged urban development and it became a symbol of modernity. It was a precursor of a radical change in the way of life of our society, marking a promising future and bringing us electrical energy, which forms part of our lives to this day. The Sarmiento thermoelectric plant in San Miguel de Tucumán, in the north of Argentina, is evidence for this as the protagonist of a new era, a symbol of progress and of new technologies.

The Sarmiento thermoelectric plant today (2019).

The plant was inaugurated with the name Central Termoeléctrica 1° de Marzo, named after the date on which the Argentine railways were nationalized, in 1951, and was in charge of supplying public lighting and the city's electric trolley cars. In this plant, chemical energy (heat) was transformed into mechanical energy (movement) and after that, into electrical energy. It is located to one side of the General Bartolomé Mitre railway terminal, linking the stations of Retiro Mitre in Buenos Aires with the city. The railroad connected the plant with the terminal, which was strategic because it facilitated the supply of fuel for the functioning of the generators. Two areas can be identified, energy production on the one hand and on the other the social and administrative services.

Thermoelectric power plants were significant buildings, displaying their symbolism through a classical industrial language based on the principles of rationalist architecture that prevailed at that time in Ar-

Workers at the thermoelectric power station next to one of the Sulzer brand power generators (1970).

gentina. The concept of a large fluid space, the facades without applied ornaments and the use of pure volumes are proof of this. The building is composed of a prism, forming a large hall which housed in its interior the power generators, manufactured by Sulzer in Switzerland, with a curved volume in the main facade stressing the most important space of the factory, the control room machines.

Other typical components of the architecture related to the Modern Movement were the use of the separate structure from the building envelope, the organization of the facade in modules, in the panels of which were two large metal-framed windows. Combinations of textures added to the building envelope. In addition, we must mention the importance of the use of new materials and construction techniques in the language and structure such as reinforced concrete, steel to form light roofs, columns and metal beams to support an imported bridge crane, among others. Prefabrication, typical of the construction procedures of the time, was present in imported products purchased by catalog from firms like Carnegie Steel Company of Pittsburg, the support structure of the water tank, and Northern Engineering Works of Detroit of Michigan for the roof and the surviving bridge crane. (Bruna and Ferrari, 2015)

We are not certain of the date when it stopped working, but it was abandoned for many years until, in 1990, the plant was transformed into a sports facility called Complejo Sarmiento. Its remodeling was superficial and simple, and its operation was ephemeral to such a point that it was abandoned again soon after. This asset remained in a state of neglect until 2012 when the National Agency of State Property, ONABE, transferred the building to the National University of Tucumán (UNT). The university took over the refunction and changing the name to Bicentennial Works in commemoration for the celebrations of the Independence Bicentennial. The headquarters of the EPAM (Permanent Education for Older Adults) is currently in the building.

When we are considering the new use of a building it is necessary to think carefully about what it will be used for to obtain proper operation and management, and thereby achieve sustainability over time. In addition, we can infer that the building is especially important not only for its architectural features but also for its significant aspects: this place represented the growth of a society, prosperity, and faith in progress. It was an icon of modernity and we should not let badly planned uses end in its deterioration or loss. The Bicentennial Works has to be a property recognized as heritage by the citizens of Tucumán.

The author is a student supervised by Dr. Arch. Mónica Ferrari and Esp. Arch. Luis Bruna, as part of promoting research in industrial heritage.

TICCIH

THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF THE INDUSTRIAL HERITAGE

фото: Matthew Christopher, www.abandonedamerica.us

ЧТО ТАКОЕ TICCIH?

Международный комитет по сохранению индустриального наследия (The International Committee for the Conservation of the Industrial Heritage) – это единственная в мире организация, которая занимается проблемами спасения промышленного наследия.

Комитет основан в 1970-х годах в Европе и развивался через регулярное проведение крупных международных конгрессов. Его деятельность систематически поддерживается конференциями и встречами, которые укрепляют личные и институциональные контакты за пределами национальных границ.

С начала 1980-х годов, при посредничестве ИКОМОС, эксперты TICCIH консультируют ЮНЕСКО по вопросам индустриальных зданий, объектов и ландшафтов, которые надлежит включить в список объектов Всемирного наследия.

После первого Азиатского мирового конгресса, прошедшего в 2012 году, и первого в Латинской Америке 2018 года, TICCIH выходит на глобальный уровень. Тем самым, исследования, сохранение и популяризация промышленного наследия набирают сегодня полный ход.

ПРИСОЕДИНЯЙТЕСЬ

Комитет – это эффективный инструмент коммуникации, в его структуре насчитывается более шестидесяти стран и пятисот участников.

Членами TICCIH являются университеты, государственные учреждения культуры, музеи и частные предприятия. Все они демонстрируют повышенный интерес к индустриальной истории, тем самым бросают вызов традиционному пониманию культурного наследия.

В число новых тем входят критические вопросы глобальной исторически установленной взаимозависимости и противоречия между индустриальными процессами и устойчивостью окружающей среды, экологического наследия промышленности как влияния на изменение климата планеты.

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http://ticcih.org

Индивидуальный членский взнос:	40, **30**, 20 или 10 USD / год
Члены ИКОМОС:	10 USD / год
Студенты, аспиранты:	**10** или 5 USD / год
Институциональное членство:	65 USD / год

Членство включает доступ к Бюллетеню TICCIH (издается ежеквартально).

TICCIH 2021 MONTREAL: INDUSTRIAL HERITAGE RELOADED

TICCIH's next congress is in Montreal, Canada, from August 29th to September 4th, 2021. Our three-yearly international meeting will stimulate a renewal of research, policies and practices in industrial heritage, bringing in fresh intellectual and academic currents and introducing recent techniques and approaches.

The meeting is a chance to interact with notable keynote speakers who will include Prof. Laurajane Smith, Director of the Centre of Heritage and Museum Studies at the Australian National University, Dr. Cathy Stanton of the Department of Anthropology Tufts University, Prof. Sharon Zukin, renowned author of Loft Living and Naked City, and Prof. Stefan Berger, Professor of Social History at the Ruhr University and joint leader of the deindustrialization research project presented above.

To allow maximum time in this difficult period, the deadlines for submitting proposals have been pushed as far as the conference programming and funding requirements allowed. You can now submit your proposal for a session or paper. We have modified the evaluation process to assess each proposal as soon as it is received, in order to provide you with optimal conditions for promotion and organization.

- Deadline for session proposals: September 1 2020
- Deadline for paper proposals: October 31 2020

Conference themes: Deindustrialisation, but also the refinement of scientific knowledge and techniques of production are redefining our relationship with the environment and with our history. This legacy is no longer solely made up of obsolete machinery and of "castles of industry": it is the legacy of territories, of knowledge, of social groups, of space stations as much as nuclear facilities and workers' houses, as well as steel complexes, all of which challenge our views and practices. In the face of profound changes in industry and in its social status—both political and economic—industrial heritage raises issues and offers possibilities that go beyond, from this point on, simple conservation. The transmission of knowledge, the inclusion of people and a renewed humanist perspective on sustainable development are among the possibilities of industrial heritage that are now imperative to call into question.

MESSAGE FROM YOUR PRESIDENT

Miles Oglethorpe

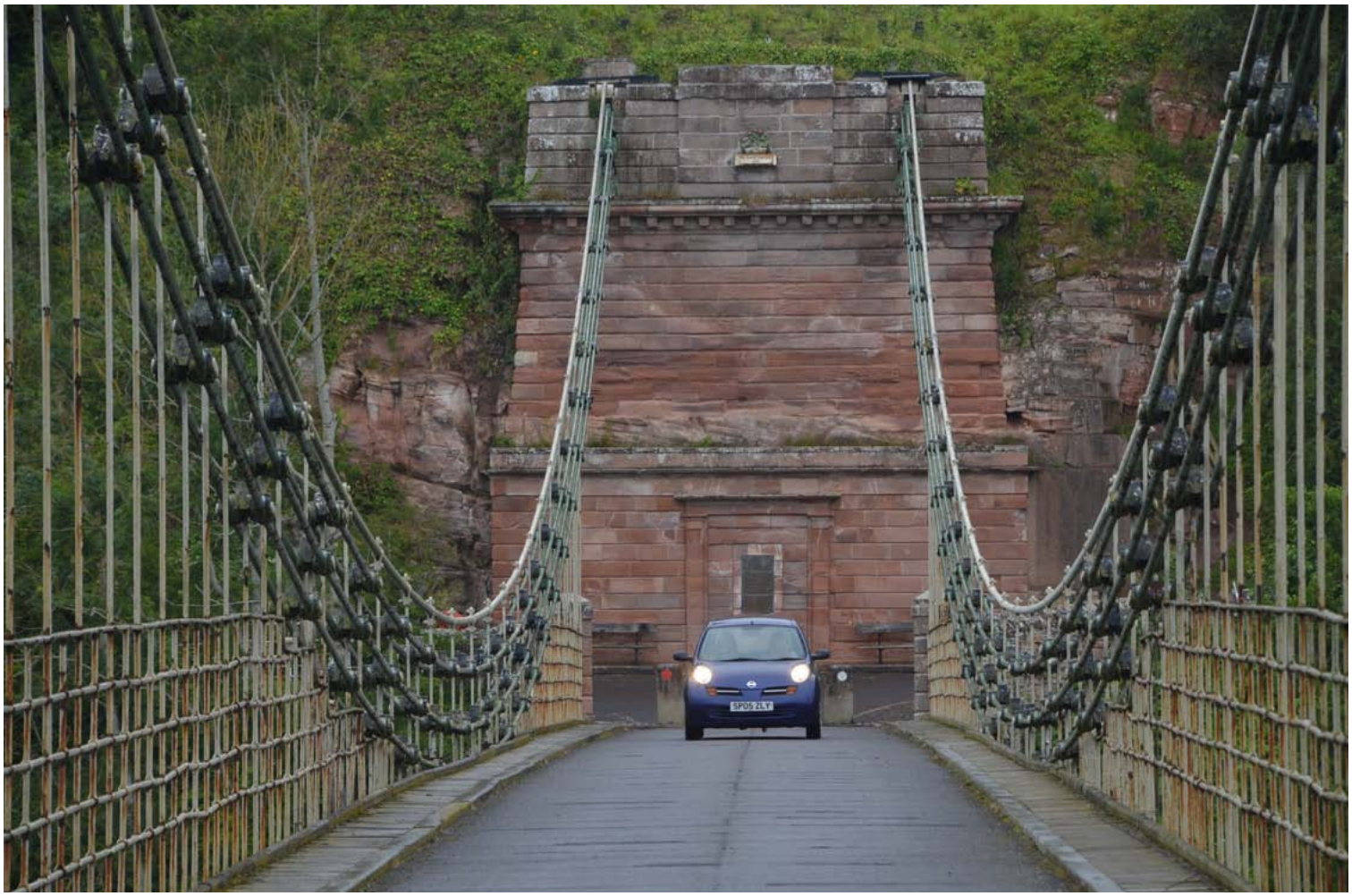
MILES OGLETHORPE

I said in the last issue of the Bulletin that it was difficult to fully understand the scale of the impact of CoVid19, but three months later, its effects are becoming clearer, and the harm that it is doing is undeniable. These are indeed very challenging times, and we are going to have to stick together and improvise to ensure that both the industrial heritage and the livelihoods of so many of our people survive as much as possible.

However, the impact has not been all bad. There is no doubt that virtual meeting technologies and digital resources have flourished. The down side of this is that I know many people who have 'Zoom fatigue', and many of those who work in a teaching environment in universities, colleges and schools have been overwhelmed by an exponential increase in online teaching. There are also many worries about the impact of an enhanced digitised world, well articulated by Naomi Klein in May. There are, in addition, nagging concerns about enhanced digital dependency and vulnerability. What happens if there is an equivalent digital version of CoVid19 or even severe electromagnetic disruption, such as enhanced sunspot activity….?

So, there is no doubt that we are never going to be able to go 'all-digital'. Our tangible industrial heritage is always going to be at the heart of what we do, and the associated analogue records in our collections are very important. Equally, meeting in the flesh to share information and ideas will continue to be vital, if less frequent. It's great to see the latest (third) call for papers being issued for TICCIH 2021 in Montreal. You will see that, understandably, some of the deadlines have been relaxed, so I encourage you all to think about submitting session and paper proposals, if you have not already done so.

Meanwhile, the TICCIH Board has been using this period of re-



The world's oldest working suspension bridge, the Union Chain Bridge, carrying a maximum single vehicle on 4 July 2020. Recent celebrations of its 200th birthday were taken online.

striction and lockdown to work on new initiatives, not least our membership drive. We urge you to contact members of your own networks to take advantage of the new subscription system and join TICCIH, and to get organised at a national level. It's important that you have a membership base and National Representative in place in advance of the next General Assembly in the Montreal 2021 congress. Equally, we ask you to enrol in the TICCIH membership directory – it's going to be vital if we are to successfully expand our international reach and share our expertise more effectively.

Having earlier written some cautionary words about digital technologies, it is good to be able to report that the Board is also working on better engaging with social media channels, several of which have flourished in recent months. Francesco Antoniol's Facebook initiative 'Industrial Heritage in the CoVid19 Aftermath' has been inspiring, helping to showcase some great work across the world. Indeed, there's been a number of other really impressive Facebook contributions, not least on industrial heritage photography and art. It's really important that we take this unique opportunity to build on these fantastic resources and extend our network.

And finally, all of us have seen this year's milestones washed away by the rising tide of CoVid19. One such was the 200th anniversary of the world's oldest operational suspension bridge, the Union Chain Bridge over the River Tweed, connecting two of the world's oldest nations, England with Scotland, which won funding for a major refurbishment. A commemorative booklet reflecting the global reach of the invited speakers (ranging from the Union Chain Bridge itself to the Akashi Kaikyo Straits, Forth and Brooklyn Bridges) will be available via www.unionbridgefriends.com. I know it will be one of many fitting tributes to the work and resilience of activists who have refused to be defeated in these extraordinary weeks and months.

WHY JOIN TICCIH?

Moulshri Joshi, architect, Space Matters Studio

—

I'm sharing my experience as a way to extend an invitation to join TICCIH.

I live in New Delhi where over the past 5 years, for reasons of environment and economy, vast tracts of industrial landscapes have ceased to perform their original function. Powerplants lining the Yamuna riverfront occupying prime real estate are now defunct and their impressive architecture- as reminder of when we furiously built a modern, post-independence nation with machines - that has captured the public space and memory for generations. Should these be allowed to rust away? Or redeveloped and replaced by condos or office blocks? What do we lose or gain as a city?

Membership to TICCIH gives a platform to those interested in this conversation, when practice and academia in India have not yet established IH and IA as a dedicated field of study. More importantly it offers space that does not see the study and the practice as distinct, and provides a network for professionals and enthusiasts alike to come together and connect. I have found young professionals from backgrounds such as design, urban studies, history and cultural heritage management to have benefitted immensely from the unique repository of IH that TICCIH brings together. At the same time I have personally gained as a professional from the diversity of membership TICCIH brings together, truly underscoring the interdisciplinary nature of this subject. Participation in TICCIH meetings and congresses have sculpted a global worldview during my early years as an IH practitioner, I could forge connections with members across cultures and feel a part of a collective – giving me a sense that we were together building a new field of knowledge from our individual experiences.

India is a recent member to TICCIH. Our membership has grown manifold in the past two years in part due to sustained efforts by a handful of us to make TICCIH visible in professional networks such as ICOMOS as well as in response to the reduced membership fee. Building the membership is crucial for us to construct and communicate the meaning of industrial landscapes facing demolition. Last year, TICCIH's timely intervention in the impending destruction of historic Watson's Hotel, last surviving cast iron housing structure, located within the core property area of the WH precinct of The Victorian and Art Deco Ensemble of Mumbai, was instrumental in establishing a need for its preservation. TICCIH India's first institutional member Indian Steam Railways Society sees the subscription as a way to conceptually expand its work from steam into industrial heritage, from super-speciality to a broader contextual appreciation.

MOULSHRI JOSHI

Over a decade ago, Jan af Geijerstam reported about "The need for TICCIH to act in Asia" in TICCIH Bulletin 2009. It remains equally pertinent read today to grow this unique network.

Moulshri Joshi is the Coordinator of National Scientific Committee on Industrial heritage, ICOMOS India and Advisory Board member, Asian Network of Industrial Heritage.

FIND TICCIH ONLINE: WWW.TICCIH.ORG AND ON FACEBOOK:

WHY I JOINED TICCIH

Lucía Sánchez Figueroa, Venezuela TICCIH Coordinator

LUCÍA SÁNCHEZ FIGUEROA

I had never heard the term industrial heritage until 2009. I was working as a heritage architect for the Venezuelan petroleum industry, PDVSA, rehabilitating industrial infrastructures, but solely from the architectural point of view. At that time the study of industrial heritage was totally unknown in Venezuela. Nevertheless, in July 2009 we were invited to the conference 'Industrial heritage: Landscapes from the memory', organized by the Spanish network IBERTUR, and everything changed for me. Industrial heritage was the missing link for my work, and personally, it comprehended the two main points of interest that I have since I was studying architecture, that is, heritage and urban design.

I began looking for 4th level studies on the subject and found that there were none in Venezuela. During my search I found in 2010, a specialization course on industrial technical and scientific heritage from the Polytechnic University of Catalonia and I decided to join. Among the professors there I met the museum director Eusebi Casanelles, then president of TICCIH. It was the first time I heard its name, the importance of that association and the need of being on constant communication, or networking. After obtaining the maximum grade on that course with my essay on Venezuelan petroleum industrial heritage, the course director, Antoni Roca Rosell, he gave me a recommendation letter and encouraged me to be a part of the scholarship Erasmus Mundus for the master's degree 'Technique, heritage and industrial territories' which I won, so I began studying in 2011.

Most of the professors there were members of the TICCIH so I felt that it was time for me to join. Reading the TICCIH Bulletin allowed me to know about industrial heritage all over the world and it gave me access to a whole professional network that was really diverse. So I got the chance to create the TICCIH Venezuela, always with the support from the TICCIH International board members, which always are unconditionally and selflessly helpful towards me. Therefore, I know that we are on the right track of putting Venezuela on the global network of Industrial heritage studies, and want to encourage everyone to join this inspiring association.

TICCIH

The International Committee for the Conservation of the Industrial Heritage

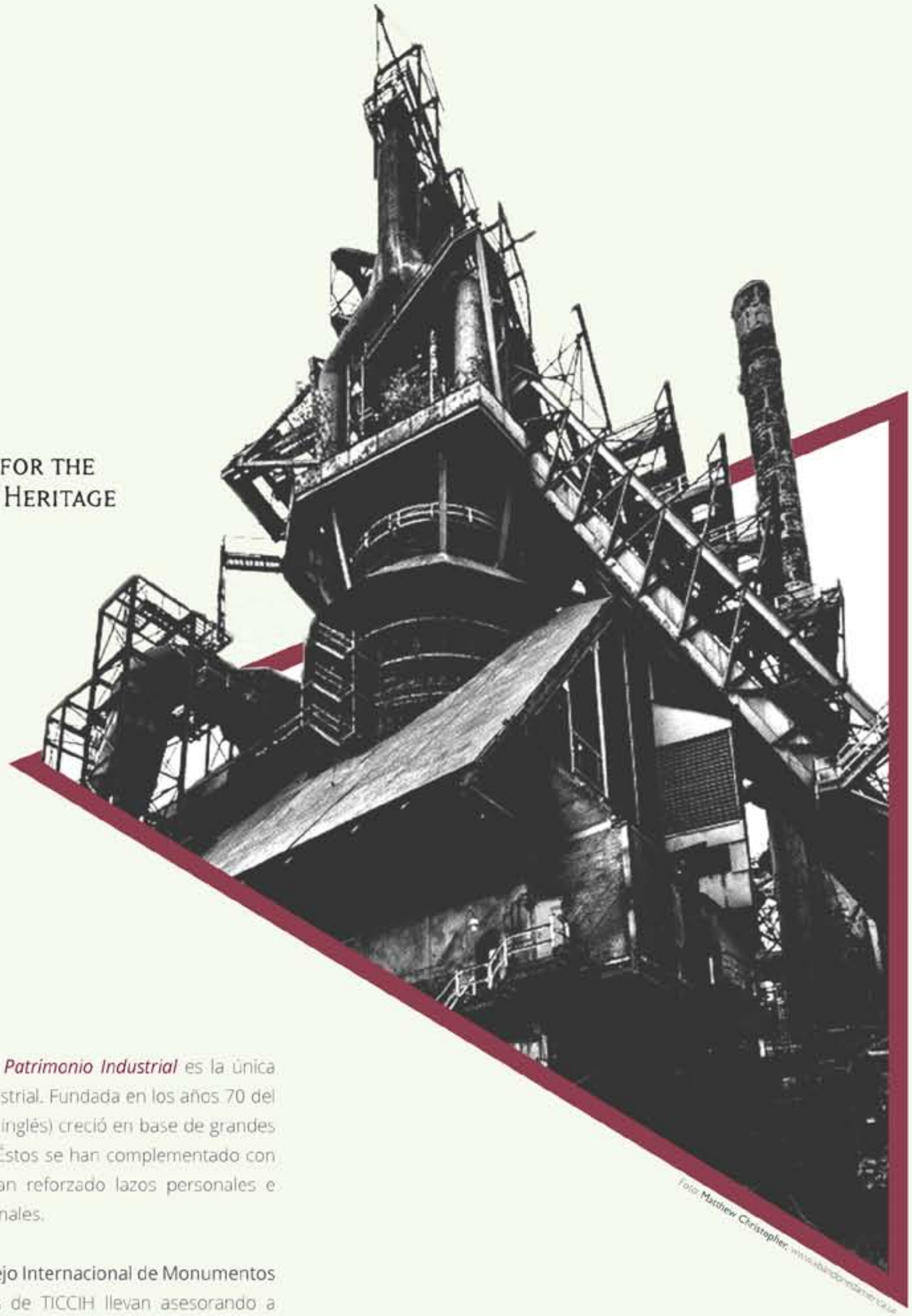


Foto: Matthew Christopher, www.abandonedamerica.us

somos TICCIH

El *Comité Internacional para la Conservación del Patrimonio Industrial* es la única organización mundial dedicada al patrimonio industrial. Fundada en los años 70 del siglo pasado en Europa, TICCIH (por sus siglas en inglés) creció en base de grandes congresos internacionales cada dos o tres años. Éstos se han complementado con conferencias y reuniones especializadas, que han reforzado lazos personales e institucionales que trascienden las fronteras nacionales.

Desde principios de los años 80, a través del Consejo Internacional de Monumentos y Sitios Históricos, ICOMOS, las y los expertos de TICCIH llevan asesorando a UNESCO en cuestiones de los sitios y paisajes industriales que deben incluirse en la lista del Patrimonio Mundial.

Con el primer congreso mundial celebrado en Asia en 2012 y el primero en América Latina en 2018, TICCIH ha ido consolidando sus bases y redes en el mundo. Con ello, hemos conseguido diversificar la investigación en el campo del patrimonio industrial, para conservar y promoverlo cada vez más y mejor.

¡Únete a TICCIH!

En TICCIH nos compartimos nuestra información entre más de 60 países y 500 miembros. En su mayoría (aunque no exclusivamente) nuestros miembros provienen de universidades, instituciones públicas y culturales, museos y empresas privadas, todas y todos unidos por el afán de proteger y promover la historia de la industria como parte esencial del patrimonio cultural.

Las nuevas líneas de investigación incluyen el análisis crítico de las interdependencias históricas globales, de la contradicción entre el comportamiento industrial y la sostenibilidad, además del legado ambiental de la industria, incluyendo las repercusiones en el cambio climático.

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Para miembros de ICOMOS:	10 USD / año
Estudiantes:	**10** o 5 USD / año
Instituciones:	65 USD / año

Únete a TICCIH y accede al Boletín Trimestral.

INTERNATIONAL WORKSHOP (VIRTUAL): CITIES AND HISTORIC TEXTILE COMPLEXES - TYPOLOGY, GOOD PRACTICE, AND GLOBAL PERSPECTIVES FOR CONSERVATION

Shan-Ti Tsai

Changes to the textile sector in much of the world have meant that converting and repurposing these historic industrial complexes has become a new opportunity and important task in many worldwide cities. This international workshop was organised by Dr. Heike Oevermann at the Humboldt-Universität zu Berlin, with Mark Watson, Historic Environment Scotland, and Professor Bartosz Walczak, Łódź University of Technology. Funding came from the German Research Foundation. Its aim was to identify the urban industrial typology to facilitate the description and valuing of historic mill complexes, as well as to discuss good exemplars providing orientation for conservation and conversion.

As the coronavirus pandemic marches around the world, the alternative, a virtual meeting, knowledge-sharing discussion not only happened in Berlin but worldwide. The international workshop brought together around 30 architects, curators, scholars and entrepreneurs to discuss challenges and good practice in the theme of textile heritage. Twelve experts from Europe to Asia shared respective examples and research on historical textile site in different countries.

To better facilitate the description and valuing of textile complexes, the meeting host Heike Oevermann, Mark Watson and Bartosz Walczak all highlighted the importance of typology of the textile sector. Developing the typology of textile complexes help to focus on identifying features, valuing, and comparing textile heritage at a European and even global scale, which are crucial for better understanding the potentials and challenges to conserving and preserving these spatial structures.

Adding to the typological work already done by the past TICCIH meetings, Heike Oevermann proposed three urban industrial types: urban block, flagship composition and production hall. Demonstrations of different examples prove that urban textile mills fit in and shape the urban setting as industrial types, their structural and infrastructural elements, and as architectural representations that contribute to urbanism and urban design.

For a deeper understanding of planned conversion on historic textile zone, Kathleen Moermanns, Kerstin Renz and Hassan Bazaz Zadeh introduced and analyzed the case studies from northern Ghent, Wendlingen and Isfahan. They shared the spatial typologies and revealed how urban planning decisions have influenced and will influence the conservation and redevelopment possibilities of these valuable sites. Furthermore, Golutwinskaja Sloboda, as a huge construction and real estate company, shared how they keep historic value and preserve the architectural appearance of industrial heritage in urban development areas in Moscow, and how they transform the sites with adaptive re-use processes that fund their continued sustainability.

The Versaidag textile mill in Krefeld, Germany by the Architect Ludwig Mies van der Rohe, Photo: Oevermann 2016.

There is a bright side and a dark side. Neera Adarkar unfolded the dynamics of the urban transformation of Mumbai. The rules on planning were changed by the government to widen the redevelopment scale of mill lands under certain conservation conditions, but all the privately owned mills have surreptitiously demolished the old structures to make way for full-scale gentrification. The elegy of losing textile heritage also looms over Poland. The linen industry was one of the leading branches of the Lower Silesian economy. Maciej Mądry mapped the situation that a large number of factories irreversibly lose tangible structures and equipment of irreplaceable industrial, economic and historical value in the area.

Apart from discussing the aspect of tangible structure, Michael Hanak and Lukáš Beran introduced an almost unknown but important engineer, Carl Arnold Séquin Bronner. This Swiss engineer designed more than 250 factories and sites for a number of big industrial enterprises throughout Europe. Many 'flagship' buildings are well-known as parts of industrial heritage, but Séquin himself remained unknown. The authors presented an on-line map of Séquin's works, which can connect people dealing with these buildings. In addition to establishing a historical understanding of textile heritage from the past architecture, Gracia Dorel-Ferre started from the working-class perspective and realized the importance of the relation between the industrial city and the workers' villages that are surrounding.

One of the key questions presented frequently about the conservation and conversion of industrial heritage at the meeting was how to convince local communities that these textile mills are worth

preserving and reusing. Julia Sowinska-Heim affirmed at the textile architecture in Lodz plays an important role in establishing the identity of the city, and at the same time secures its culture. With tangible heritage base, she further emphasized the transition from free grassroots activities to implementation of a carefully thought out plan carried out very smoothly by slowly introducing the desired changes.

Textile heritage is an inspiring, though sometimes a conflicting, resource for the present and the future. The conflict always comes from a lack of understanding of the value of the textile site. Developing the typology of the textile mills provides guidelines for evaluating the value and identifying types.

These worldwide case studies provide context to possible UNESCO world heritage properties, while giving ideas also for places that are not world heritage as to good conservation and criteria for sustainable conversion. Mark Watson suggested some rules: during the processes of conservation and conversion, the quality of the original architecture must be the priority. The adaptive reuse of the sites should allow flexibility for future economic shocks and the building must be adaptable enough to switch to other uses. And the factory cannot be preserved only as keeping the structure, but must have living uses in the sites.

The demand and the challenge for urban spatial planning came up today, the mills are always part of a broader context and the rule of industrial architects, the role of entrepreneurs, the claims and self-identity of workers and locals are important for understanding a mill development and its architecture for further conservation.

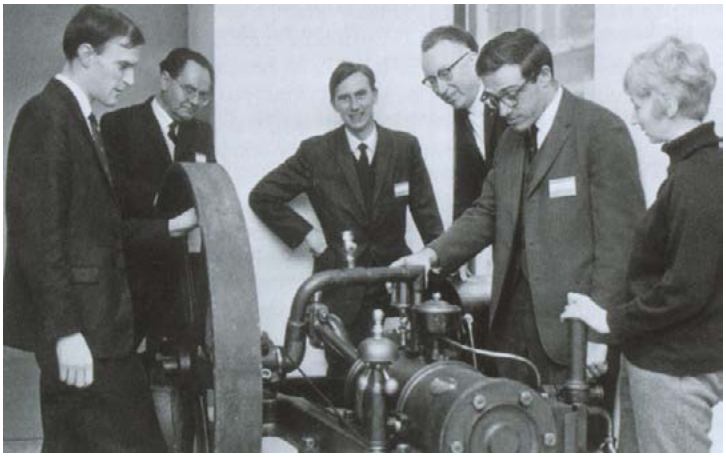
Please watch the TICCIH website for the uploaded pdf of the presentations and for news about the final workshop in Lodz Poland, in April 2021.

UK

BRENDA AND ANGUS BUCHANAN

Brenda Buchanan passed away on the 14th of April and her husband Angus on 17th June, 2020. Both were seminal figures in the formation, definition and growth of industrial archaeology and the study of the history of technology, in Britain and internationally. Angus's book Industrial Archaeology in Britain, published in 1972, summed up the development of the subject into a national movement. Both were closely involved with ICOHTEC, Angus in 1968 had been a founder member and then later President of the organisation. In 1971 Angus was involved in the first British industrial archaeology conference which was held in Bradford and with a second held in Strathclyde that led in 1973 to the formation of the Association for Industrial Archaeology. He was also involved in the early years of TICCIH. In 1973 he attended the First International Congress of the Conservation of Industrial Monuments, which was attended by some of the key international delegates. On the third such conference, in Sweden in 1978, the word 'heritage' was substituted for 'monuments' and TICCIH was born.

Thanks to Keith Falconer for information used here.



Pioneers: Angus Buchanan (centre) examining a Griffin gas engine at the 1968 Bath Conference on Industrial Archaeology with British colleagues (from left) Neil Cossons, Michael Rix and Frank Atkinson, Robert Vogel (Smithsonian Museum, USA) and Marie Nisser (Royal Institute of Technology, Sweden). Photo: Bath Chronicle

2020

18-22 August

FreieUniversität Berlin, GERMANY

World Conference of Public History

14 September

St. Albert, Alberta, CANADA

Athabasca University: ICCROM's 2020 International Summer School on Communication and teaching Skills in Conservation and Science

23 - 26 September

Gijón, Asturias, SPAIN

XXII Jornadas Internacionales de Patrimonio Industrial: Hacia un 'New Deal' para el Patrimonio Industrial (on-line conference). CfP: 15 July 2020

INCUNA https://incuna.es/jornadas-incuna/presentacion/

7 - 9 October

Ghent, BELGIUM

ERIH Annual Conference

2021

2 - 6 June

Bethlehem, Pennsylvania, USA

Society for Industrial Archeology 49th Annual Conference

29 August - 4 September

Université du Québec à Montréal, Montreal, CANADA

XVIII TICCIH Congress: Beyond Obsolescence. Deadline for session proposals September 1, deadline for paper proposals October 31, 2020

Industrial Heritage Reloaded

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The International Committee for the Conservation of the Industrial Heritage

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