



## CONTENTS

### NEWS FROM TICCIH

- **TICCIH WORLD CONGRESS IN KIRUNA, SWEDEN, 2025** - *Roine Viklund*

### WORLDWIDE

- **THE VIRTUAL ROTUNDE - BRINGING INDUSTRIAL HERITAGE BACK TO LIFE** - *Hubert Schnedl*
- **THE DETROIT INDUSTRY MURALS (1932-1933) IN THE DAWNING OF THE AUTOMATION DREAM: 90 YEARS** - *Alfredo Cruz*
- **WATER TOWERS OF FRANCE** - *Nadine Berthelier*
- **ARMSTRONG'S SILO ILLUMINATES ITS CRAGSIDE HERITAGE IN NORTHUMBERLAND ENGLAND** - *Lou Renwick*
- **TOPPLED STATUE FROM JOHN COCKERILL MONUMENT** - *Robin Debo & Bart Vanacker*
- **THE REMAINS OF CARVER'S GINNING MILL STAND WITNESS TO THE HISTORY OF COTTON IN AL-MAHALLAH AL-HUBRAH** - *Mostafa Abo Shamia*

### BOOK REVIEWS

- **THE WILLINGTON WAGGONWAY, A RIVAL TO THE STOCKTON AND DARLINGTON** - *Rick Smith*

### CONFERENCE NEWS

- **BIG STUFF 2025: AT THE MUSEUM OF INDUSTRY IN GHENT, BELGIUM**



Detroit Industry Murals, North Wall. Alfredo Cruz elaborates some of the murals' social context and history in the article beginning on page 6.

### MESSAGE FROM YOUR PRESIDENT

#### A WINDOW INTO THE PAST

*Miles Oglethorpe, TICCIH President*

As President, I am delighted to welcome readers to a bonus issue of the TICCIH Bulletin – Number 104B. This has arisen because we have been blessed with such a rich stream of contributions that, rather than delay publication, we thought we would publish 104 in two separate parts to help accommodate as many articles as possible.

Issue 104B, therefore, allows me to report briefly on an important visit I made in early April to Trento in Northern Italy. I travelled as a guest of the Fondazione ing. Lino Gentilini and was honoured to be asked to speak on the importance of industrial archives at a seminar organised by Francesco





Miguel Álvarez Areces and Miles Oglethorpe being guided through the amazing collection of engineering drawings at the Fondazione ing. Lino Gentilini Archive in Trento by Francesco Antoniol (Photo: Roberto Marini)



Francesco Antoniol showing Miles Oglethorpe examples of drawings held in the Fondazione ing. Lino Gentilini Archive (Photo: Roberto Marini)

Antoniol of the Foundation. It was a tremendous programme during which we heard from a variety of excellent speakers.

My task was to focus on iconic historic infrastructure and the inspiring role that archives can have in unearthing the magic that made such engineering creations possible. During the day, I was very fortunate to

be able to visit the Foundation's archive, which is located near the centre of the city. For me, it was a poignant reminder of the importance of physical archives. It took me back to almost two decades of my own professional life working with colleagues in what was then the National Monuments Record of Scotland. It was also wonderful to be given a detailed tour by Francesco and his colleague, Roberto Marini, who kept on unearthing treasures from the archive.

Conserving, cataloguing and making civil engineering archives accessible is very demanding, but it is hugely worthwhile. I emphasise this because today, we are being pressured into seeking entirely digital solutions to the management of data and records.

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

#### TICCIIH

President: Dr. Miles Oglethorpe  
Historic Environment Scotland  
Longmore House, Edinburgh EH9 1SH, Scotland  
e: [ticcih.president@gmail.com](mailto:ticcih.president@gmail.com), t: +44 01316688611

Secretary General: Dr. Marion Steiner  
ESPI Lab on Critical Industrial Heritage Studies, Valparaíso, Chile  
e: [secretary@ticcih.org](mailto:secretary@ticcih.org)

Editor: Articles and news of recent and future events should be sent to the Editor, Bart Vanacker, e: [editor@ticcih.org](mailto:editor@ticcih.org)

Advice for contributors: [ticcih.org/ticcih-bulletin/](http://ticcih.org/ticcih-bulletin/)

TICCIIH Membership: Daniel Schneider, e: [ticcih@mtu.edu](mailto:ticcih@mtu.edu)  
TICCIIH Website: Daniel Schneider, e: [ticcih@mtu.edu](mailto:ticcih@mtu.edu)

ISSN: 1605-6647

TICCIIH 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](http://www.ticcih.org)

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

Back issues can be downloaded as a pdf file from the TICCIIH web site, [www.ticcih.org](http://www.ticcih.org)



Digitisation of analogue records undoubtedly brings advantages and enhanced functionality, but the truth is that it cannot completely replace the process of physically examining and free-range browsing of real archives such as drawings, books and journals.

In particular, it struck me that the most powerful solution combines digital and conventional archives, which explains why the Foundation is both retaining and digitising collections. One particular challenge is creating a digital catalogue with metadata which empowers users to find exactly the right records. This is important because the archive holds records of infrastructure across Italy and the region (such as in neighbouring Slovenia) that was built by the Ing. Lino Gentilini company, much of which is still in use and requiring continuous repair and maintenance.

For me, the icing on the cake of this visit was a subsequent tour of the Trentino region, part of which took me onto the very autostradas that were built by Lino Gentilini. Some of this engineering heritage is simultaneously heroic and subtle and can only be fully appreciated with the help of the archives. For example, these days, you cannot see the pre-stressed engineering that has been embedded within the spans of the many viaducts that weave their way through the valleys. Still, they are beautifully illustrated in the line drawings held by the Foundation's archives back in Trento.

The seminar was also very lucky to have Miguel Álvarez Areces of INCUNA as the keynote speaker, so together, we benefitted greatly from the local knowledge of Roberto and Francesco as they drove us through the province after the seminar. To my shame, I hadn't fully appreciated the wealth of industrial heritage that exists in Tren-



Early hydropower - La Centrale Idroelettrica di Fies in Trentino, which started generating electricity in 1909 (Photo: Miles Oglethorpe)

tino, a significant proportion of which is water-powered (including some very early hydro-power stations). I made a note to myself to return for a much more leisurely visit as soon as I can!



*Recruit a new*  
**TICCIH MEMBER TODAY!**

[www.ticcih.org/membership](http://www.ticcih.org/membership)





Kiruna mine in Sweden (photo by Dag Avango)

## SWEDEN

### TICCIIH WORLD CONGRESS IN KIRUNA, 2025

*Roine Viklund, Chair Svenska industriminnesföreningen (SIM) and Chair of the Organizing Committee*

The next TICCIIH World Congress will be held in the mining town Kiruna in northernmost Sweden, August 25 – 30, 2025. This will be the 19th TICCIIH World Congress and will also commemorate TICCIIH's 50-year anniversary. TICCIIH was founded in 1973 at the First International Congress on the Conservation of Industrial Monuments in Ironbridge, UK. The theme for the TICCIIH 2025 World Congress in Kiruna is "Heritage in action: legacies of industry in future making," which alludes to the global phenomenon of history and heritage being mobilized to support diverging desires and interests in our contemporary societies. Industrial heritage is increasingly becoming important in contemporary discussions about competing future visions.

The TICCIIH 2025 World Congress focuses on tensions and controversies surrounding industrial heritage and its relation to wider tensions in present-day society. It explores how we think about the past and future in the present and how we construct historical narratives to connect the two. But also how we attach them to the built environments and artifacts to get where we want to go. It is a theme that addresses key global issues connected to the UN sustainability goals and the conflicting goals emerging between them, as well as pathways to bridging tensions through the use of heritage as a communal platform. The theme also includes the issue of how we can work with contemporary industries as heritage and the heritage of the future.

#### Ten subthemes

In addition to the overall theme, there will be ten subthemes ranging from challenging and difficult questions regarding the relationship between industrial heritage, colonialism and inclusion to forward-looking themes, including post-industrial heritage, future generations, and



threats and possibilities that intertwine industrial heritage. We also welcome discussions about how industrial heritage is used and represented in AI and popular culture.

The conference theme is closely connected with the place where the congress will take place. Kiruna is a small mining town in the Swedish Arctic with a rich industrial history. The town was officially established in 1900 as part of a large project to extract vast iron mineralizations in the region. However, people have inhabited the region for thousands of years. Steel making based on bog-ores in the area dates back 2000 years, while mining and early modern metals production dates back to the 17th century. The mine in Kiruna is still in operation and is the largest underground iron ore mine in the world.

The Swedish National Heritage Board has designated Kiruna as a heritage site of national interest, with the motivation that its urban environment and industrial landscape represent a unique example of 20th-century planning ideals for company towns. The town was established in 1900 to enable mining of the rich iron ore deposits in the mountains Luossavaara and Kiirunavaara, on the initiative of the mining company Luossavaara Kirunavaara Aktiebolag (LKAB). Kiruna was planned as a model company town, with an adjacent service and supply town and a railway area. Some of the most renowned architects, planners, and artists of the time were hired to contribute to its development.

Today, Kiruna is also reputed for its relocation. The Kiruna Council issued a press release in 2004 stating they would move the town to enable continued mining. The iron ore deposit reaches beneath the town, and mining to 1365 meters below ground causes subsidence. Therefore, large parts of the existing town have gradually turned into an industrial area. Since 2015, parts of the town, including some historical buildings, have been relocated to a new town center.

But Kiruna is not only a mining town. Located in the northern part of the Swedish Arctic, Kiruna is situated in a diverse region.

The indigenous Sami population and the Tornedalian Meänkieli-speaking national minority have been present in the area for many centuries. The cultural landscape is formed by reindeer husbandry, hunting, fishing, and cattle farming, as well as iron making from the Iron Age and onwards. The Swedish state started manifesting itself in the coastal zone in the early 14th century and expanded toward inland areas in the 16th century. Since the 19th century, large-scale industrial developments have impacted the region immensely. The mines, hydropower stations, transport infrastructure, and military defense have been conceptualised as a 'technological mega system', designated by the National Heritage Board as industrial heritage.

#### Pre- and post-congress excursions

Several excursions at varying costs will be planned before and after the congress. Pre-congress excursions include visits to the Arctic Mine Fields and Hydroelectric Plants of Northernmost Sweden, the Center of the Green Industrial Transition in Sweden, and The Mid-Swedish Mining District Bergslagen. Post-congress excursions include visits to the Torne River Valley, an oil rig in Stavanger, the Röros Copper Mine, and Svalbard.

The 19th TICCIIH World Congress in Kiruna is organized by Luleå University of Technology, a leading university in the European Arctic, and the TICCIIH sections in Sweden and Norway, in collaboration with Jernkontoret, the Swedish National Heritage Board, LKAB, the municipality of Kiruna and a range of leading actors within industry and civil society in the Scandinavian north.

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

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



## AUSTRIA

## THE VIRTUAL ROTUNDE - BRINGING INDUSTRIAL HERITAGE BACK TO LIFE

DI FH Hubert Schnedl M.A., TICCIH Austria

Virtual reconstructions have a wide range of applications in architecture and are used for documentation purposes, virtual tours, material and surface analyses and many other cases. Rapid technological advances make it possible to create complex building reconstructions on a highly detailed level while simultaneously processing the data in real-time environments. Nevertheless, most digital building models are used only for visualization and presentation purposes.

This reconstruction project aims to go one step further, to preserve an important building digitally and return it to its original use – in a virtual environment. The Rotunde is seen as a perfect example of this purpose.

On May 1st, 1873, the Vienna World's Fair was opened, the first in the German-speaking world. At that time, Vienna could be viewed as a significant construction site: the “Ringstrasse,” the regulation of the Danube, and the construction of the railroad stations were

among the urban development projects that laid the foundation holding the World's Fair in Vienna. The Palace of Industry was the central building of the exhibition. Its longitudinal and transverse galleries covered an area of almost 7 hectares. In the center, the Rotunde was erected for representational purposes, its interior providing space for 27,000 visitors. At the time of its completion, the Rotunde, with a span of 108 meters and a height of 84 meters, was considered the largest domed building in the world and joined the list of spectacular exhibition architecture, such as the Crystal Palace in London or the Eiffel Tower in Paris. Designed by the Englishman Scott-Russel, extended by Wilhelm von Engerth and planned by the architect Carl von Hasenauer, the building complex was erected in just two years of construction. On thirty-two riveted steel columns, more than 20 meters high, a tension ring of 104 meters in diameter was placed, which supported the conical roof with the two lanterns. The four-meter-high replica of the imperial crown formed the top of the building at over 85 meters. The Rotunde could be circumnavigated entirely on the inside at a height of 23 meters, and the roof provided access to the upper lantern, which offered a panoramic view of Vienna at a height of over 70 meters. Designed as a temporary structure, the Rotunde was used for exhibitions and events for more than sixty years after the World's Fair. The history of this building – which was initially viewed critically but over the years had become an important landmark in Vienna – ended with the major fire on September 17th, 1937.

With the publication of sketches and photos from the time of the World Fair in the online library of the Wien Museum, sufficient information was available for a detailed reconstruction. The creation



Rotunde with the main entrance during the World Fair 1873 (photo by György Klösz Wiener Photographen-Association, [Vienna Museum Inv.-Nr. 75608/22, CC0](#))



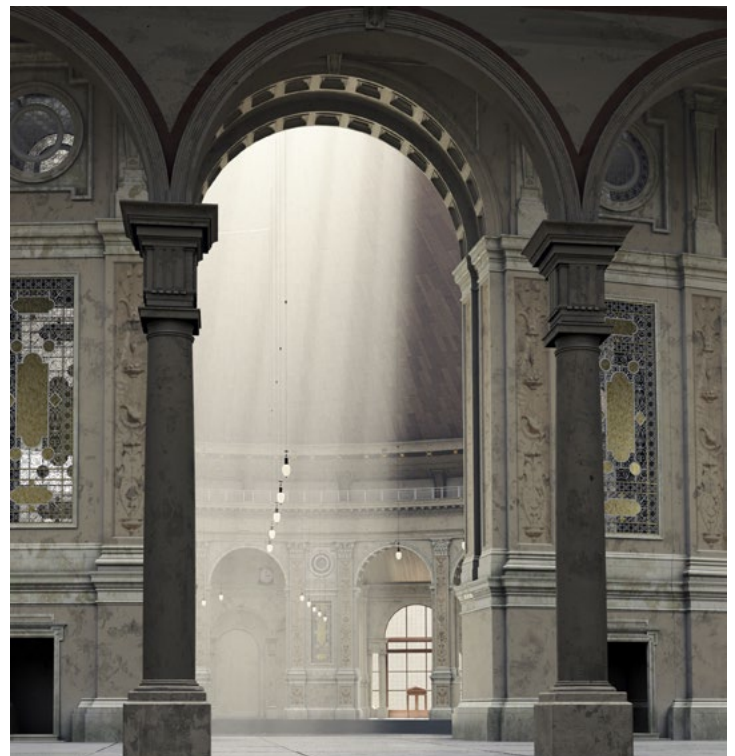


Interactive environment of the Rotunde and ongoing exhibition of Matador models

process could be roughly divided into three phases. First, a precise model with basic geometries was created based on existing sketches. This was followed by creating geometric details, such as ornaments and interior fittings, and the definition of materials, including lighting, to obtain the first rendered images. Unreal Engine, a 3D creation tool from Epic Games, was chosen to build the interactive environment. All the necessary geometry, material information, cameras and lights were transferred to Unreal Engine. Then, they were enriched with functionalities for navigation and exploration of the building in real time.

The successful creation of the Rotunde as a real-time environment was the starting point for defining an exhibition use case. By choosing the Matador toolkit as the central theme of the virtual exhibition, a further context to technological history could be created. It is unknown whether the Matador company, which still exists today, ever exhibited its wooden toys in the Rotunde. Still, in any case, the wooden models were widespread in the 1920s and 1930s. They offered technology-loving children and adults the opportunity to gain a playful insight into the technical development of that time.

The virtual exhibition revives this era with detailed models of mechanical engineering and transportation technology. The digitally recreated Matador models have been scaled to the actual size of their real-life counterparts and distributed across the enormous central space of the Rotunde, which can be viewed from every angle. All of them are equipped with the appropriate wooden textures, and some also have integrated simulations in which the models' levers, gears and transmissions can interact. Object information can be displayed interactively for each machine model. In addition to detailed surfaces and materials of the interior, a simulated day and night cycle provides changing lighting moods and is intended to give



Digital Reconstruction of the Rotunde, Rendering in Blender 3.5 with Cycles renderer

visitors a realistic impression of the Rotunde. Thanks to the underlying streaming technology, visitors can call up the exhibition in their web browser without additional software; the complex ren-

dering process runs in the background based on cloud services and sends the necessary 3D data packages to the user.

Even if the metaverse concept has been treated almost inflationarily recently, virtual worlds will take their place in our everyday environments. This approach aims to propagate “pearls” of industrial

culture that no longer exist as an essential part of virtual environments. This not only provides a digital model of the buildings, but the interaction in virtual spaces leads to new usage and continues the history of the industrial monument in a new and exciting way. The current status of the development can be followed on the website [www.rotunde.wien](http://www.rotunde.wien).



Detroit Industry Murals, South Wall, (photo by author)

## USA

### THE DETROIT INDUSTRY MURALS (1932-1933) IN THE DAWNING OF THE AUTOMATION DREAM: 90 YEARS

Alfredo Cruz

Beyond the tremendous hype produced by its premiere and the later controversy, Detroit Industry (1932-1933) was abandoned by academic interest for decades (although this was not the case for its popularity among visitors, which continued cluttering the enclosure through the years). The fortuitous localization of a forgotten archive (a set of boxes and huge sketches that served Rivera to create his work), produced a renewed interest in the 1980s. In 1999, at the conference “Diego Rivera’s Detroit Industry Fresco Cycle: A

Model for Future Research,” based on the exhibit that recovered that work, art historian Linda Downs addressed the need to extend research about Rivera’s work:

“Publications and current research on the Detroit Institute of Arts Detroit Industry fresco cycle can be used as a model of analysis (...) and need to be analyzed and synthesized with other well-established themes such as the development of technology, dialectic of opposing powers, and social commentary on the future of the working class.” (Downs, 1999)

The following report is based on some of the findings of a research project and a doctoral dissertation that walks in the direction suggested by Linda Downs, by the reappraisal of evidence found in industrial archives (for example, the Prelinger Library). A broader view is required of the temporary material culture surrounding





Detroit Industry Murals, West Wall. (photo by author)

factories, such as publications, flyers, posters, and sponsored films (Prelinger, 2006) that may have been set aside for the analysis of technology. It was financed by two universities in Guadalajara, México: ITESO Jesuit University and the Universidad de Guadalajara.

The link between the Detroit Industry (1932-1933) and the rise of automation is the emergence of automation in the Ford factories. The word automation in the middle of the twentieth century was neither a technical definition nor a precise conceptual framework related to autonomy, technology, or industrial operations. As far as the evidence goes, it wasn't commonly referred to in public or used as a popular technical slang inside automotive guilds before the Second World War. Automation was a postwar neologism coined in 1947, with the creation of the automation department in Ford industrial complexes:

"Automation is a new word with which you should become familiar. It sounds impressive, as though it has

been coined by the government people who devised such terms as 'directives'. But the fact is that it originated far from the Potomac on the banks of a much smaller river, the Rouge. Ford has had an automation department since April of last year."

It has been hard to trace its origin as technical slang because then, it became the generally accepted term to refer to the autonomy incorporated in technical systems (referred to in other languages as automatization), however also connoting its potential social implications beyond its technical domain. Automation is, more than anything, a clear example of a robust social discourse, embodied in a word that amalgamates an emerging set of social practices in the context of an industrial hype that trends, and in that sense, it revolutionizes every aspect of our world, shaping our dreams about technologies and their possible outcomes.





Detroit Industry Murals, North Wall. Detail. (photo by author)

Although incorporating technological development seems a one-way direction, industrial history represents a severe challenge when seeking to interweave cultural contexts with technological development since the temporality of techniques is not necessarily linear, nor does it belong to a single industry, so it cannot account for a single development, progressive or gradual.

The automobile industry, for example, copied many of its operating models and techniques from the pharmaceutical industry, and technological improvements, such as the Anti-Lock Brake system (ABS), were incorporated into industries decades after they were patented. Another challenge comes from the disappearance of factories and other work environments.

Derived from its artistic context of creation during the Great Depression, Detroit's industry had a transcendent role as an industrial communication event that set the way for techniques to be communicated outside Detroit's factories. Far beyond the Ford Rouge Complex, it is possible to suggest Detroit Industry as a pictorial depiction that deals mainly with industrial control (both social and technical) from a critical perspective, based on Diego Rivera's vision of industrial purpose. This complex "vision" negotiated between the artist, the employer, the workers, and the machines preceded the emergence of other technological ideas in the same environment, expressed as visual discourses.

Situated at the beginning of the 1930s, the Detroit Industry can be related to expanding industrial control techniques that coexisted with notions like scientific administration, technocracy, and other approaches expressed by neologisms. Controlling production

required novel machinery, like air conditioning, which benefited both workers and standardization and new principles of application, some considered unorthodox in scientific fields (somehow like cheating or producing dirty temporary solutions). It is important to remember that a physical linear principle known as feedback, present as an idea in multiple converging fields (like economics, engineering, biology, communications, machine design, electronics, and production), was incorporated in factories, expressed by autonomic principles in the design and operations of machines. As a diffuse idea (of several techniques), a visual explanation was required to materialize these enhancements to workers and other members of the public, particularly investors.

Control was also a concept in administrative theories, explored as visual communications based on the operation of factories and their relationship with human beings. Visual knowledge of the controlled physical movements in factories and repetitive work within a restricted environment paved the way to express labor in a broader sense, in which the techniques do not exclusively belong to the designer of machinery nor to the visions of employers (such as Henry Ford), nor a mechanized system, blind to workers, but to a continuum inside factories.

During the tectonic shifts that were produced inside industries by the adoption of non-linear control theories, the spatially distributed and smaller plants (nevertheless logically integrated) were recognized as a better option to support production (particularly after the development of atomic bombs, which could take down a vast production center). Gradually, with the arrival of new paradigms, an



emerging idea materialized after the war. In the technical ecosystem of the postwar era, past the dismantling of the behemoth complex of the Ford Rouge (spread over 900 acres more as a geographical enclave than a factory), and right before the publishing of *Cybernetics* (1948) by Norbert Weiner, the ambiguous neologism automation was coined in 1947 inside Ford Factories.

The automation discourse was rooted in a long visual history that tries to communicate how technological changes are derived from prior achievements in factories, changes that allow unprecedented achievements. Automation was connected as a continuity of machinery regulation, implying this sense and combining it with how it developed in the XVIII century, from the mechanization of labor to automatic control and feedback engineering. This new step was part of the “evolutionary” and natural pace of technology that was needed to support mass production of goods coming from factories, as stated in a later iconic film, “This is Automation,” made by the General Electric Company (Boynton, 1955).

As a strategy to communicate changes in factories and industrial guilds, automation started long before 1947 through sponsored

films and other visual communications that thrived from industries in the 1930s onwards, like, for example, *Master Hands* (1936) and the productions made by the Jam Handy Organization based in Detroit, which would eventually configure the propaganda machinery with industrial roots (Oakes, 2010). Automation, as a novelty concept in 1947, was derived from the vast communications already underway but eventually used to rupture the way factories worked until the war period.

Due to its origin in the River Rouge Complex after the war, it can be argued that it maintains an important relationship with its birth site as a visual discourse directed to the public. Detroit Industry and its 27 frescoes are displayed on the four surrounding walls in the Detroit Institute of Arts (DIA) courtyard, painted by Diego Rivera and his team of apprentices from 1932 to 1933. Based on what he found in the Ford River Rouge Complex (the greatest factory in the most significant economic depression), themes such as machines, supervisors, workers, cars, war omens, contesting economic and production systems, famous and obscure personages, labor struggles, and self-portraits (just to mention a few) are combined in the eyes of the Mexican painter, to produce an artistic device for future generations of unsuspected proportions.

## REFERENCES

Boynton, F. (Director). (1955). *This is Automation*. Raphael S. Wolff Studios.

Burnham Finney. (1948, October 21). “Automation” May Help You. *American Machinist*, 92(22), 89. Internet Archive. Retrieved from the Internet Archive.

Downs, Linda. (1999). Diego Rivera’s Detroit Industry Fresco Cycle: A Model for Future Research.

Oakes, B. (2010). Building films for business: Jamison Handy and the industrial animation of the Jam Handy Organization. *Film History: An International Journal*, 22(1), 95–107.

Prelinger, R. (2006). *The field guide to sponsored films*. San Francisco, CA: National Film Preservation Foundation.

## FRANCE

### WATER TOWERS OF FRANCE

Nadine Berthelie, [www.chateauxdeau.fr](http://www.chateauxdeau.fr)

The water tower is invisible. Yet France is the only country to call water towers “castles of water.” Despite this flattering name, the building remains a forgotten part of our environmental conscience. “The cycle of water and the cycle of life are one,” wrote Jacques Cousteau. This observation, expressed in the twentieth century, was not new and had inspired aqueducts, fountains, reservoirs, and water

towers since antiquity. The latter, known as *castellum divisorium*, collected water from a spring, then conveyed by the aqueduct and directed in different directions. It is this original name which, declined, will give in France the “castle” of water. The Roman organization and its infrastructures withered away simultaneously as the Empire collapsed and the water tower disappeared, only to be truly reborn in the nineteenth century. In the nineteenth century, the water tower accompanied all progress and societal changes.

Technically and briefly, a water tower consists of a tank supported by a barrel. By using a pump, the captured water is sent into the inlet pipe. A wind turbine first drove the pump before being replaced by



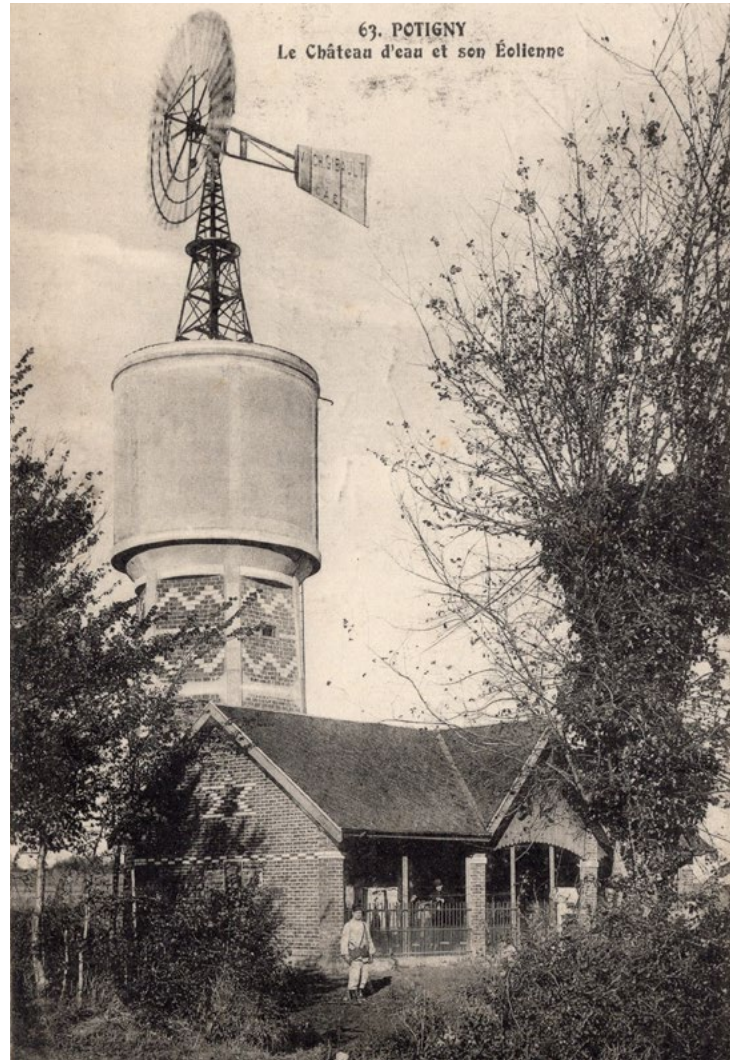
Corlay water tower at Côtes-d'Armor (photo by Eudes Ajot)

a steam engine and then an electric motor. The distribution pipe takes water from the bottom of the tank, which descends by natural gravity.

In a way, the water tower testifies to the technological developments and trends of its time. Above all, the water tower is useful. The choice of location is technical. Aesthetic problems that arise and sometimes arise today in these old buildings do not exist at the time: water towers too close to the houses or even in the middle of the village, harming the historic environment, etc.

Each water tower is unique, even if some seem, but only seem, similar to “champagne corks.” For many, water towers are only auxiliaries of our comfort and economy. As such, they are rarely entitled to special attention unless their author is famous. Sadly, there is no mention of water towers in the two volumes of a beautiful and rich work published in 1999 listing the heritage of the SNCF and the French railways.

Given their number and particularities, few water towers have had the privilege of benefiting from protection as Historic Monuments or Remarkable Heritage. Less than forty (water towers or reservoirs) are protected. They must be more remarkable than any other piece of heritage to get this protection.



Few wind turbines still exist on water towers. Imposing and fragile wind engines were the first technical means used, as in Potigny in Calvados, to fill the tanks. They were replaced with more reliable and robust electric motors as soon as possible (postcard, early twentieth century, private collection)

The oldest protection of a water tower is that of Houdan. It was classified as a Historic Monument in 1889. The process was most certainly influenced mainly by this reservoir being installed in one of the medieval towers of the city's fortifications.

Unfortunately, these protections are often made when the building concerned is the last representative of a particular type. This is the case of the Lioran water tower (commune of Laveissière), built in 1867 to supply the locomotives of the lines that cross the Cantal. It was only protected in 1991 after it was restored in 1983 and is now the only building of its type, those of Murat, Saint-Jacques-des-Blats, and Vic-sur-Cère having disappeared.

The association “Les Châteaux d'eau de France” does not necessarily advocate for the maintenance of water towers at all costs. Let's not kid ourselves; some water towers still exist because demolition is expensive or because they are used to support radiotelephone antennas. Some of them are in such a state that demolition is the only



14. SAVIGNY-en-SEPTAINE (Cher). — La Gare



The steam locomotive passes by the water tower of the Savigny-en-Septaine station in the Cher; characteristic of those that have marked the railway lines. Its shape is cylindrical, the shaft being made of stone and the metal tank (postcard, early twentieth century, private collection)

way out, although the negligence that led to this situation is to be deplored. However, we must keep the memory of these disappearing buildings. This is one of the missions of our association. Another mission of our association is to create a public database with French water tower heritage. The site now offers around 13,000 water towers out of the existing 16,000 and has more than 13,000 visits for 2022 compared to 7,300 visits for 2021, an increase of 80%.

To expand the database, the association and its members contact companies and private individuals who hold archives and who are usually willing to help while making information that has previously remained confidential public. This gives rise to articles in the association's Gazette or the Newsletter. The Army was asked to allow us to consult the archives related to the water towers built either in times of war on the fronts or in barracks, etc. We were turned down, as our interlocutor considered that our research was due to a lack of awareness on the part of the civilian world, as water reservoirs are strategic sensitive points.

More problematic is the lack of response from the SNCF archives department (the French railway company), which we contacted to consider a partnership or a publication despite our reminders. The lack of response is shocking, not only from a public service but also because the railways have historically been the main and among the first beneficiaries of the installation of water towers.

France is not the only country working and interested in water towers. Germany, the Netherlands, England, etc., also group their inventories into associations and databases. Our associations regularly meet to visit each other's country water towers. Publication exchanges also take place. At a time when European consciousness is emerging, this cultural action is participating in it in its own way. Checks are not limited to the borders of our countries. We are currently working on collaborations with African countries where water towers are more recent.

The interest in water towers can make you smile. However, the water tower is a marker of our time and the past. It is anchored in a local history since it responded and still responds to a local demand. The attachment to terroir is no longer to be demonstrated, even if the fight for its interest is far from being won. In Neauphle-le-Château in the Yvelines, a citizen mobilization wanted to save the water tower from demolition decided by the Municipal Council. The water tower was nevertheless destroyed in 2019. Neglected, it remained in the inhabitants' memory, attached to a childhood memory and an unconscious and natural presence in the landscape that they were not ready to give up.

The articles in *La Gazette du château d'eau* delve deeper into specific topics and provide additional information.



Cragend pump (photo by author)

## UNITED KINGDOM

### ARMSTRONG'S SILO ILLUMINATES ITS CRAGSIDE HERITAGE IN NORTHUMBERLAND ENGLAND

*Lou Renwick*

New evidence has been found to date a listed building in Northumberland. The Cragend Farm Hydraulic Silo is a **Grade II\* listed building** formerly on the Cragside Estate.

Historic Houses organisation, mentors and supports Cragend Farm. As a result of their assistance, Cragend Farm has proved that financial support has a positive result that benefits the local community and enriches the local history of the area.

Heritage is one of Britain's Unique Selling Points (USP) and although there are no secrets to success, as a result of preparation, hard work, and learning from failure great things can be achieved within the sector. So, when they were told 'No,' it was like a red rag to a bull for The Renwick's who persevered when their National Lottery grant application was blocked because they are a private residence.

An emergency grant from Historic Houses in 2018 came to the rescue and has been integral in shining a light on new evidence about the building as part of the Cragside Estate in Northumberland. It enabled damaged floors in **the Grade II\* listed building** to be replaced and created an opportunity to open for historic building enthusiasts. It is now an opportunity to visit a Building at Risk site, a site that had previously been too dangerous to enter.

The interested visitors have offered many suggestions to the mystery of how The Cragend Hydraulic Silo may have been built and



Cragend pump (photo by author)

worked, as it was assumed there were no documents to give any details. Historic England archaeologists had estimated a date based on buildings at The Cragside Estate, Rothbury, the home of The Magician of the North, Lord Armstrong of Cragside.

Past employee and curator of Armstrong Vickers in Newcastle-upon-Tyne Peter McKenzie came on one of the Historic Houses 'Invitation to View' tours at Cragend Farm in 2020. Intrigued, he suggested that the Renwick's search The Tyne and Wear Archives at The Discovery Museum in Newcastle, where the main collection of technical drawings from this world-famous company is now housed.

Where to start? The T&W Archivist required specific details to select from the thousands of documents housed there.

The electric lightbulb moment (excuse the Armstrong pun) came in a flash! Closer inspection of the machinery was made possible due to these HH repairs, and the Giant Hydraulic jig standing over 4m tall was researched for archaeological purposes, when, stenciled on





Cragend Farm Hydraulic Silo (photo by Cragend Farm)



Both the building and documentary evidence can be viewed at Cragend Farm (photo by Cragend Farm)

the side of it was No 1306, an early model of Armstrong patented water powered hydraulic lifting machinery.

Unlike many of the machines on the Cragside Estate that have since been renovated and repainted, the Cragend Hydraulic machinery is as it was in Victorian times.

Lou Renwick searched for this specific number through many rolls of greased linen technical drawings from over 140 years ago. Eureka! There it was. The large A0 drawing has a date and demonstrates how Armstrong devised this magnificent building to assist his farm workers and feed his cattle silage made from water power.

The date of 1884 on this document means that it is considerably older than Historic England listed and is now being amended. It sheds light on how this building worked and was powered. This unique building is a testament to our great British heritage and is worth a visit. Both the building and documentary evidence can be viewed at Cragend Farm, along with centuries of historic interest.

Other searches have also been done because these tours and newspaper articles can confirm the royal visits to see this fantastic new building in 1887 and 1888 and also provide more details on how the men worked the machines within it. A farm archaeologist from Beamish has identified many of the workings of the building and how day-to-day life would have been for the workers here because of this information. Cragend Farm won a National Award, The Custodian Prize 2023, for the work on looking after the site and its collection of artefacts.

All thanks to the inspired vision of Historic Houses to help preserve a listed building, which in turn has ignited a passion in its owners to present this site for tours with ample research for an earnest historian to explore, and which covers not just the Victorian age but goes back to the days of Edward III.

Tour visitors can have access to the research papers as well as a physical tour of the building. [Book a tour through Historic Houses website](#) or [direct from Cragend Farm website](#) to find out more. Booking by appointment: 01669621533. Accommodation is also available.





The patina has completely worn off because the Beaufort statue was set on fire (photo by Stéphane Larose – Commune d'Ixelles)



Beaufort's left arm has been dismantled from the statue (photo by Stéphane Larose – Commune d'Ixelles)

## BELGIUM

### TOPPLED STATUE FROM JOHN COCKERILL MONUMENT

*Robin Debo (ETWIE) & Bart Vanacker*

During the gathering of thousands of farmers in the heart of the European district in the Belgian capital, Brussels, the monument in honor of John Cockerill was toppled. The statue of mechanic Beaufort was heavily destroyed and burned during the protests.

John Cockerill was born in Haslingden (England) in 1790 but moved to present-day Belgium with his father William Cockerill and the rest of his family. In Liege and Seraing, John Cockerill lit the fuse of the Industrial Revolution. He erected blast furnaces and built steam

engines, locomotives and monuments such as the cast iron statue of a lion on top of the Lion's Mound in Waterloo. From 1815 onwards, he helped the Prussian state with the mechanization of the textile industry in Berlin. John Cockerill died in 1840 in Warsaw. Only in 1867 his body was returned to Seraing in Belgium.

From then on, hero worship for John Cockerill came on full blast. In his hometown, Seraing, a statue in honor of him was unveiled in 1871. The statue shows a pensive Cockerill with an anvil and gear behind him. Designer Armand Cattier parked four cast iron workers at the foot of its pedestal. Cockerill's coat of arms with the five roosters and his motto, 'Courage to the Last,' are also included.

You will come across a second John Cockerill Monument on the Luxembourg Square in Ixelles. In 1872, a year after Cockerill's statue was unveiled in Seraing, Willem Rau, a loyal collaborator of Cockerill, took the initiative to donate a statue to Brussels. Rau wanted



to erect a monument in honor of John Cockerill in front of his house on Avenue Louise. However, Brussels expelled him because Cockerill was not a Brussels resident. Ixelles was interested. Rau presented the municipality with a replica of the statue that sculptor Armand Cattier had made to place in Seraing. That is how Cockerill's statue ended up on the Luxembourg Square in Ixelles.

The figures at the base of Cockerill's statue – a blacksmith, a mechanic, a puddler and a miner – represent the thousands of workers who laid the foundations of the European coal and steel industries, the industrial run-up of the European cooperation that took shape from the mid-twentieth century in the ECSC, the European Coal and Steel Community, and became the European Union.

Cockerill's statue remained undamaged for over a century and a half, a minor miracle. Three years after erecting the monument, a Belgian politician asked the Ixelles municipal council to take it down. Given Cockerill's Orangist past, the tribute was misplaced and an act of anti-patriotism. However, the statue remained standing. Cockerill was also unaffected by two world wars and hundreds, perhaps thousands, of demonstrations against the European Union that took place here.

That was until February 1, 2024. That day, the Cockerill monument was in the wrong place at the wrong time. The farmers were not necessarily targeting the figure of John Cockerill himself or, even worse, any of his workers. One of the frustrations expressed by farmers is the seemingly harsh focus on reducing their emissions while not targeting the emissions of significant industries equally hard. This might be why the statue of Cockerill, referring to industrialists and the steel industries in particular, was targeted. If so, history puts a curious twist on that story, as the steel industry was quite possibly the biggest benefactor the farmers have known so far. Why? Nitrogen and Phosphate Fertilizers.

### Scories Thomas

Belgian blast furnaces had a pretty lucrative by-product: thomasslakkenmeel (Dutch), scories Thomas (French), Thomasmehl (German) and – breaking the naming conventions a bit – basic slag (English). The 'basic' is a chemical reference. The blast furnaces processed minette-ores into steel. This type of iron ore from Luxembourg and Lorraine was particularly rich in phosphate. Thanks to the Gilchrist-Thomas Converters, it was possible to process this unattractive ore into steel of good quality. The slag byproduct had a high phosphate and lime content, which made for a cheap and appealing fertilizer. So most blast furnaces had installations to grind up the slag into a fine black powder, bag it up and send it off as fertilizers. In 1910, Belgium produced about 521 500 tonnes of 'scories thomas' from just seven blast furnaces. Belgium even imported slag from French and German blast furnaces to grind up into fertilizers and then export it. Belgian farmers used much of this cheap, readily available and slow-absorbing fertilizer, but over 330.000 tonnes were shipped back to Germany for use by German farmers. French farmers also had quite an appetite for the black powder.

### Cokes to ammonia

Blast furnaces required large amounts of good quality cokes. So, to satisfy demand, Belgium had many coking plants in operation. During



Belgian blast furnaces had a pretty lucrative by-product: scories Thomas (French).

the First World War, Germany (Haber-Bosch process) succeeded in fixating nitrogen from the air into ammonia, a critical resource for explosives (in wartime) and fertilizers (in peacetime). Aside from ample heat and pressure (and a suitable reactor vessel and catalyst), a large amount of hydrogen gas was required to synthesize airborne nitrogen into ammonia. The largest producers of hydrogen gas were coking plants. So, next to most coking factories, an installation was built to synthesize ammonia and process it into nitrogen fertilizers.

Many of the early adopters and investors expanding into ammonia production were industrialists from the steel world. Ougrée-Marihay was the first in Belgium to explore this synergy between steel and nitrogen fertilizers with their neighboring Société Belge de l'Azote. Coppée heavily invested in expanding his coking plant in Willebroek with a factory focused on producing ammonium phosphate and later ammonium nitrate fertilizers: A.S.E.D. This plant was a reference model replicated worldwide, from Ukraine to Japan. Boël added SAFEA (S.A. Fabrication d'Engrais Azoté) to his steel empire in La Louvière.

Access to cheap and plentiful fertilizers propelled the output of the Belgian farmers to never-before-achieved numbers. Up to the 1950s, they quickly used the most fertilizers per hectare in Europe and, by doing so, managed to produce the highest yields of wheat, rye, barley, oats, potatoes and sugarbeets per hectare in Europe and the world. Not long after that, the Dutch caught up and surpassed this. So steel & cokes, fertilizers & farmers are more connected than you'd think.

### Restoration works

Once the farmers left the Luxembourg Square in Ixelles, the bronze statue of mechanic Beaufort was taken to safety and is now stored in a

warehouse. The restoration department of Denys, a contractor working for the Brussels-Capital Region, had submitted a renovation file and an estimate of the work to be carried out. The patina has completely worn off. Some parts have been dismantled. The dislocated parts will need to be repaired, the bronze cleaned (using a very low-pressure mild abrasive or mechanical cleaner), and the hot patina redone (usu-

ally following the protocol of applying a copper nitrate solution to the bronze heated with a torch, followed by rinsing with a benzotriazole solution). A microcrystalline wax must also be used to recreate a protective layer. As the law requires, the municipality must issue a public tender before the statue can be restored. However, it hopes to start the renovation work as soon as possible.



The Remains of The English Khawaja Carver's Ginning Mill Inaugurated In 1896 In the City of Al-Mahallah Al-Kubrah (photo by Mostafa Aboshamia)

## EGYPT

### THE REMAINS OF CARVER'S GINNING MILL STAND WITNESS TO THE HISTORY OF COTTON IN AL-MAHALLAH AL-HUBRAH

*Mostafa Abo Shamia, journalist Al-Ahram Establishment*

On the Street of 23rd of July at the city of Al-Mahallah Al-Kubrah in Egypt, the remains of the English Khawaja Admon William Carver's ginning mill stand witness to the industrial and commercial renaissance

that took place in the city at the second half of the 19th century where Al-Mahallah was one of the most famous cities in the industry of production of long-staple cotton that the governor of Egypt at the time Muhammad Ali Pasha started growing under his command.

Long-staple cotton, also known as Sea Island Cotton, dates back to 1820. Muhammed Ali Pasha commissioned the French engineer Louis Alexis Jumel to cultivate long-staple cotton instead of the short-staple cotton cultivated for ages. The Liverpool textile mills admired this type of cotton because of its long staple, softness, elasticity, and attractive luster, which qualified it for use in manufacturing high-quality textiles.

Cotton markets where farmers gathered and sold raw cotton were famous in Al-Mahalla and spurred foreigners to establish numerous





Part of the administrative and residential building of Carver's ginning mill in Al-Mahalla Al-Kubrah (photo by Mostafa Aboshamia)

industrial facilities in the cotton ginning and oil pressing industry, including Carver's ginning mill, which dates back over 150 years. Seeds and debris were removed from the cotton in the ginning mill. Today, only a few parts of its structure and wards remain.

Historical documents suggest that Khawaja Carver, whose prominent family controlled the cotton trade in the stock market of Al-Basal Port in Alexandria, bought this ginning mill from one "Mar-sa Butler" who was an English citizen in 1896. In the same year, Carver also purchased a plot of land adjacent to the railway line, expanding the total area of the ginning mill factory to two acres. This indicates that the establishment of this ginning mill predates this date, with construction likely dating back to 1863. In 1889, the Khawaja Carver Company relinquished factory land on the north side, measuring five meters in width and 55 meters in length, to construct a public road.

Subsequently, in 1902, the company relinquished half of the ward responsible for separating good cotton seeds from bad ones to the

Syrian-born brothers Habib and Salim Boulad. When the Egyptian Cotton Weavers Company Limited was established in 1905, an English company headquartered in Alexandria, Carver's ginning mill became part of the company's ginning mills in Al-Mahalla. It included two ginning warehouses in their entirety, a total of 48 cotton roller ginning machines, along with a cotton press and notable storage buildings for the stocking of raw cotton equipped with floor-installed vacuum cleaners that suck the cotton and distribute it to the wheels inside each ward, a seed purification chamber, a blacksmith and carpentry workshop and a particular mill for the purification of impurities in the cotton. Workers were housed in small units next to the factory.

The Khawaja Carver name was bestowed upon one of the city's streets, where he resided with his family in a large house on Moheb Street in Al-Mahalla. In 1950, the Greek Khawaja "Constantin Pateridis" was appointed director of the ginning mill, which measured 37,632 square meters at the time, with an active 104 spinning wheels. Despite this, he continued to refer to the company as Carv-



The first ginning ward of the "Alexandria Commercial Company" in the city of Al-Mahalla (photo by Omnia Salem)

er's ginning mill. Later, it was managed by the Greek Khawaja "Pandeli Georgoblo." The company became known as "Pandeli Cotton Company." A railway line ran inside the warehouses to transport cotton to the port of Alexandria and from there to factories in Manchester and Lancashire in England.

In 1963, the company's name was changed to "Delta For Cotton Ginning" after the July Revolution. The Egyptian government nationalized the mill, making it affiliated with state companies. Many other cotton ginning mills that belonged to foreigners also came under state ownership, such as the English Khawaja's ginning mill, "Bill Selvaggio," located next to the railway line, established in 1863 and later known as "The ginning mill of Bill and his Partners Limited," better known popularly as "The Englishmen Ginning Mill."

In 1948, a few businessmen in Al-Mahalla purchased a part of the ginning mill land to establish a company (New Mahalla for Cinema and Entertainment). At the time, the ginning mill witnessed a human tragedy that remained the main memory everyone talked about on

the streets for a long time. After the nationalization of the ginning mill and the seizing of his money by the bank, English manager Cole jumped to his death from the roof of his house. His dog witnessed the tragedy and followed his example.

The Jewish Khawaja's ginning mill, "Shimon Ayyub," established before 1915 on Queen Farida Street in what is now known as the "Seven Daughters" area, was also sold to the Egyptian English Trading Company in 1917. Its ownership later transferred to the "Alexandria Trading Company," a firm founded in Alexandria by Greek citizens with branches in several cities, including Al-Mahalla Al-Kubrah, where they owned three ginning mills, including a ginning mill located on Mohammed Bek Al-Menshaw Street, now (Nasser Street). It featured 52 cotton ginning roller machines alongside housing units for the workers. It was later demolished to make way for a new road, and the administrative building was repurposed as a school in the early sixties. At the same time, the primary ginning mill was nationalized and named the "Nile Cotton Ginning Company." Only a few months ago, it was demolished to make way for



residential towers, even though it continued to operate till the last moment. It contained three warehouses:

- Warehouse A, with 46 wheels, stopped working in 2014 due to some technical issues and the shortage of cotton supply,
- Warehouse B was the largest, with 66 wheels and the latest steam press at the time, and
- Warehouse C with 34 wheels. All equipment from this mill was sold to scrap merchants.

Another mill belonged to the Greek citizen Kourima Wabanaki, located on Fouad Al-Awwal Street, now (23rd of July Street). This mill was nationalized under the name "Port Said Cotton Company."

The economist Talaat Harb Pasha established the first national ginning mill in the city in 1924 under the name "Mist for the ginning of cotton" company. The Prime Minister of Belgium, Georges Theunis, attended the inaugural ceremony. It remains the only mill still in operation to this day. This mill marked the beginning of the establishment of the largest yarn and weaving company in the Middle East, "Egypt's Spinning and Weaving Company," founded in 1927. King Fuad I of Egypt personally inaugurated it in 1931.

Residents of the city fear that the current mill will have the same fate as the other mills that disappeared one after another, which has left them in so much sadness and anger, especially as these mills serve as a reminder of their glory and the history of their ancestors.

#### RESOURCES:

"Urban Development of Al-Mahalla City from the Mamluk Era until the End of the Muhammad Ali's Ruling Era" (Master's Thesis by researcher Omnia Salem).

"Industry in Egypt" by Dr. Hussein Ali El-Rafai, 1935.

"Al-Mahalla: City of Minarets and Chimneys" by Professor Mohamed Anwar Houtar.



A recruitment banner for TICCIH. On the left is a red circular logo with a white globe icon. In the center, the text "Recruit a new TICCIH MEMBER TODAY!" is written in a mix of red and black fonts. On the right is a black and white photograph of an industrial facility with tall chimneys, tilted at an angle. At the bottom center, a red-bordered box contains the website address "www.ticcih.org/membership" with a mouse cursor pointing at it.

## THE WILLINGTON WAGGONWAY, A RIVAL TO THE STOCKTON AND DARLINGTON

Turnbull, L., 156 pp. Published by NEIMME, 156 pp., available priced at £15 plus postage from:

[jennifer.hillyard@thecommonroom.org.uk](mailto:jennifer.hillyard@thecommonroom.org.uk)

*Reviewed by Rick Smith*

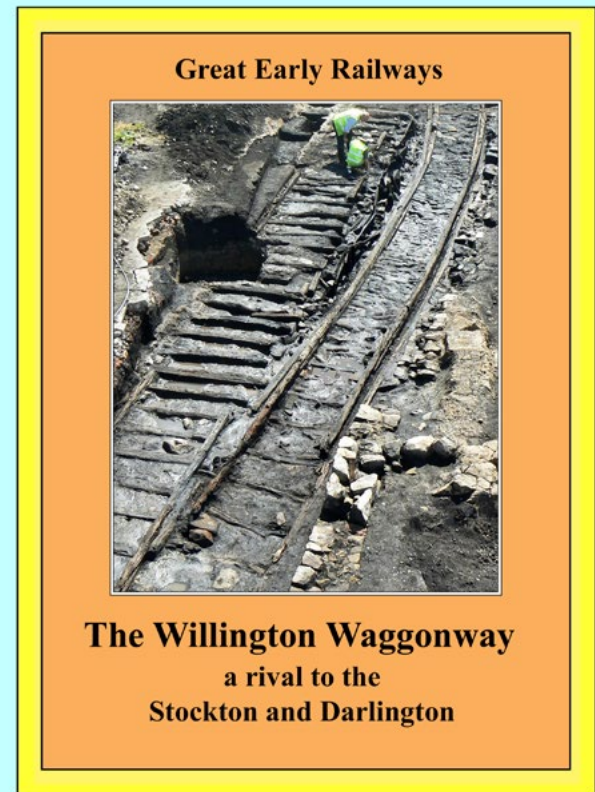
Les' reputation as one of the North's leading industrial historians is further bolstered by his latest, very readable addition to NEIMME's Early Railway Collection. Firmly grounded on archaeological evidence from digs in the Northeast, Les recounts over two centuries of early railway developments in the Great Northern Coalfield (GNC) leading up to the Stockton & Darlington. The discovery in 2013 of a superbly well-preserved section of the Willington Waggonway at the Neptune Yard, Walker, and its subsequent excavation, is described in a chapter by Alan Williams. The photographs and sketches of this work are outstanding. A second collaborator, Richard Carlton, adds well-illustrated details of many of the 40 or so other discoveries of wagonway remains in the GNC.

From these cornerstones and his usual meticulous research in the NEIMME archives at Neville Hall, County and Alnwick Castle archives, Les charts early rail transport history and, with almost equal enthusiasm, early steam pumping engines and their roles in opening up the Tyne Basin. Of the 115 well-printed text figures and photos, the earliest shows that wagonways had already become well established by 1620 on Tyneside, where there were at least five railways, from pits at Benwell, Elswick, Heaton, Jesmond and Whickham.

Then, starting with brief biographies of 18th-century engineers, Les discusses the adoption and spread of the technology and its evolution into the world's first railway network that served the Great Northern Coalfield – at that time, the world's largest. And where the standard gauge, still used globally, originated – based, it might appear, on the width of the hindquarters of a Tyneside horse! Much of the story is based on contemporary records of the construction of the Willington Way and the operation of the Bigges Main Way until the exhaustion of their collieries in the mid-19th century.

By the early 19th century, the original wooden rails had been replaced by iron, and stationary engines and locomotives were displacing horses. Waggon movements averaging 500 daily on the Willington Way required a high degree of sophisticated organisation and engineering. These were not mere 'primitive wooden waggonways' but engineering and organisational masterpieces. Some also transported small proportions of materials such as ironstone, limestone, and pyrites destined for local chemical and iron works. Others occasionally carried return loads of bricks, timber, manure and lime for the mines and nearby farmers. Early 19th century, tourists were even encouraged to use the East Kenton Way – surely a 'first.'

The detail that Les has either uncovered from the archives or has been able to deduce covers construction, operating and maintenance costs,



working practices, workforce wages and productivity, profits, traffic, staithe, and social life – including less than complimentary descriptions by a local gentlewoman and her agent, of colliers ("little better than savages") and their womenfolk ("strangers to cleanliness, frugality or economy"). Of course, some colliers did emerge from "barbarity" to become great engineers and played important roles in the story of railways and coal mining. This leads us to Robert Stephenson, born in 1803, coincidentally at Willington Quay, where his father George worked on the riverside. While acknowledging the man's undoubted genius, Les contrasts the 220-year pre-history of colliery railways with their great network of bridges, cuttings, points, and stationary and moving steam engines – many shifting more than 300,000 tons of traffic annually from the world's largest sea-sale collieries - with the creation in 1825 of Stephenson's horse-drawn S&D Railway and its carriage in its first year of just 42,000 tons from the land-sale collieries of the then relatively remote South Durham collieries. He concedes that its length is more significant than most colliery railways, and of course, it eventually developed far beyond the coalfields, but in almost all other respects, it was just another waggonway when opened and was far less sophisticated than its predecessors further north. The bulk of its traffic – over 90% – was coal. Passenger traffic provided only 1% of the profit in 1833 and had already taken place officially and unofficially on other railways; with fatal consequences for one young woman decapitated as she jumped off a waggon at Bigges Main.



One senses Les' delight in relating that while headline news to the editor of the Durham Advertiser, the Newcastle Courant "simply wedged the account of its opening between the appointment of Mr Porter as surgeon to the DLI and the announcement that Robert Bailey had been fined for keeping a disorderly public house in North Shields!" There is an element of tribalism here, but Les traces the elevation of the S&D to its current mythological status as the principal forerunner of the modern railway system, to a jubilee memorial book that the Northeastern Railway Company commissioned in 1875 from a young newspaper editor, J. S. Jeans. Fake news (!) by an editor who Les describes elsewhere as "less than a paragon of

objectivity" and who also glowingly described Darlington, where he worked, as "the birthplace of the railway system." Les has written this book to correct that false narrative and "to restore the mining engineers of the GNC to their rightful place in history as the men who provided a proven transport system that enabled the Victorian Railway Revolution to happen." These talented individuals left an indelible mark on civilisations worldwide.

This is a fascinating, scholarly, at times amusing, and certainly well-argued book. It is supported by abundant research and was published mischievously just in time to coincide with the S&D's bicentenary.

## CONFERENCE NEWS



The Industriemuseum in Ghent during the Light Festival in 2024 (photo by Martin Corlazzoli)

## BELGIUM

### BIG STUFF 2025: AT THE MUSEUM OF INDUSTRY IN GHENT, BELGIUM

The **Museum of Industry** in Ghent, Belgium, will be hosting the next triennial Big Stuff conference in September/October 2025 (final date coming soon!). Join heritage technology enthusiasts of all kinds to share your knowledge and passion for conserving and interpreting technical, industrial and scientific equipment.

Focusing on physical conservation and keeping machinery operational, the conference will highlight 'practical skills' and the

transfer of immaterial knowledge. We want to bring everyone together: private and museum owners, volunteers and academics, people looking after all types and sizes of machinery. Sharing your challenges and solutions is vital, so start planning your presentation now!

Ghent is a gorgeous historical city with a deep industrial past (and present) and is an excellent gateway for exploring Belgium's heritage. See you there! For more information, contact [bigstuff2025@industriemuseum.be](mailto:bigstuff2025@industriemuseum.be).

## LINKS TO ONLINE EVENTS CALENDARS:

- [TICCIH Conference Calender](#)
- [ICOMOS Conference Calender](#)
- [UNESCO Events](#)

To add events to the TICCIH Calender please send details and a link to [ticcih@mtu.edu](mailto:ticcih@mtu.edu)



# TICCIH

THE INTERNATIONAL COMMITTEE FOR THE  
CONSERVATION OF THE INDUSTRIAL HERITAGE

---

## BULLETIN

NUMBER **I04B** · 2nd Quarter 2024  
ISSN 1605-6647