



THE INTERNATIONAL
COMMITTEE FOR THE
CONSERVATION
OF THE INDUSTRIAL
HERITAGE

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TICCIH President Professor Patrick Martin captures Tampere conference organizer Kimmo Anttila for the industrial archaeologists. Read Helmut Albrecht's conference report inside.

Photo: Stuart Smith

number 50

4th quarter, 2010

Inside:
TICCIH meets
ICOHTEC in Finland

■ Technical monuments, in particular witnesses to early technological achievements, continue to lead a life unnoticed by the general public. A clear example of this lack of interest can be found in Döllach in the Möll Valley in the Hohe Tauern National Park – in part understandably because for decades the building has been standing unused, neglected and separated from the village. It served as the Döllach zinc smelting works for zinc reduction from 1796. Smelting operations were terminated as early as 1834. This major technical monument, known locally as the 'Kohlbarren', has been cleared for demolition by a ruling of the local government authority. After decades of not being maintained the building is in a perilous condition. The decline of the Tauern goldmines and the closure of the last state-owned gold operation, the famous Goldzecher mine, in 1794 as was seized by the state official Bergrat Dillinger as an opportunity to interest the mining authorities in Vienna in his project of a zinc smelting works. Dillinger had developed a method of obtaining zinc from blackjack (Sphalerite, the chief ore of zinc) by process of reduction in the reverberatory furnace. At the same time, it constituted a social and work-creation project to help the miners who had lost their jobs. Two works of the same type based on his method were put into operation, at Dellach in the Drau Valley and Döllach. Both are mentioned in contemporary literature. The Dellach works no longer exists.

TICCIH Austria and the 'Initiative Denkmalschutz' (<http://www.idms.at>) are attempting to preserve this complex of buildings, and point out that a demolition of the 'Kohlbarren' would lead to a huge identity deficit in the region. At the same time, discussions are being held with representatives of the Federal Office for Monument Preservation, the local government authority and the province of Carinthia with the aim of developing a gold and zinc mining museum project and preserving the works. The creation of a museum would be an important step towards improving the region's cultural infrastructure.

New archaeological digs and investigations at production centres around the world present a comprehensive image of the development of zinc extraction, one of the key technologies of human society. Mining and smelting centres using the oldest equipment reveal very different problems and possibilities. India, China, Great Britain and the Mediterranean countries are the regions where the various methods were developed. A questionnaire directed by TICCIH Austria to all international TICCIH representatives produced a variety of responses. The former Döllach zinc smelting works constitutes an important mosaic stone in the development of non-ferrous metal smelting technology. Two of the responses are examples: 'The Carinthian process was a unique and extremely important development, featuring in all the major publications on the history of zinc... [it] could have been directly based on the Indian process. ... more likely...a local invention based on the pre-existing technology for the smelting and distillation of mercury.' (Prof. Paul T. Craddock, Department of Scientific Research at the British Museum, London, 2010). 'It is the European version of the Indian method for zinc production. What speaks in favour of Döllach is the unique nature of this method.' (em. Prof. Dr.-Ing. Joachim Krüger, RWTH Aachen, 2010).

Experts from Australia, Belgium, Great Britain, Germany, Sweden, Slovenia and Spain are to be thanked for their valuable references about the history and existence of zinc production in their countries.

The former zinc smelting works at Döllach consists of stone masonry with wood beam ceilings and a three-part standing roof truss covered with shingles. The interior is broken down into four areas. The furnace complex with two double furnaces each feeding a chimney is located in the centre. The two surviving flues were the chimneys for the former reverberatory furnaces. The Goldmühle, which was once part of the complex, is now used as a residential building.

Archaeological investigations and additional research by the archaeologist Rudolf Franz Ertl demonstrated that zinc smelting was causally related to the building in Döllach. It is '... a building of importance for industrial archaeological research, the existence of which was doubted until recently.' (Ertl 1984)

In the upper part of the furnace heated to around 1200 °C, the distillation crucible coated with mineral, coal dust, ash lye, cooking salt and lime was inserted, with the opening facing down, in clay pipes protruding down from the hearth block into the lower substantially cooler furnace chamber. The crucible contents were heated without air and began to sweat zinc, the heavy vapour condensing in the clay pipes, and dripping into the lower part of the furnace where the distillate – zinc – was collected on an iron drip tray.

To sum up: The method developed by Dillinger, as the results of recent research show, is known worldwide and recognized as the Carinthian process. Although excavations have been able to prove the existence and the site of the zinc smelting works and the zinc reduction furnaces, and numerous finds were located, it has as yet not been possible to give the existing building a reasonable use, such as for the presentation of metallurgical technology. The Döllach zinc smelting works, despite their poor condition, are an industrial monument of national and international significance which should be conserved.

Opinion

Ute Georgeacopol
TICCIH Austria

Zinc smelting works in Döllach, Austria, facing demolition?

■ ICOMOS Guidelines

The draft ICOMOS-TICCIH text on the safeguard of structures, sites and areas of the industrial heritage has again been in circulation among the two organisations. President Patrick Martin is coordinating TICCIH's response. If anyone wants to read the draft, in French, English and Spanish versions, it can be downloaded from the *Documentation Centre* on the TICCIH web page

■ Waterworks museum prize

The Micheletti Prize is an annual accolade for the best industrial museum given by the European Museum Forum. TICCIH member *Museu Agbar de les Aigües* (www.museudelesaigues.com) in Barcelona took the 2010 award this summer. The museum interprets a 1909 pumping station and is opened – free – by a foundation of the Agbar utility company as part of its cultural projection programme. Inaugurated in 2004, the museum was praised for the quality of the industrial heritage conserved alongside working pumping plant, the strong emphasis on local cultural stimulus, the many workshops for primary and secondary level students, and the kaleidoscopic view of its material adopted by the exhibition.

■ Historic lighthouses

These particular structures merit their own international association, the IALA. It has recently updated its Lighthouse Conservation Manual which aims to help managers of historic navigation aids to conserve them and make them accessible to the public, a praiseworthy objective which the Manual goes a long way in promoting. Along with a tremendous amount of other information on lighthouses this can be downloaded from their webpage: www.iala-aism.org/



The post-conference visitors to the Verla board mill. The rest of the images and many more from Tampere are on the conference Facebook albums.

Photo Jan Kunnas

■ Publication of Tampere papers

The ICOHTEC journal *ICON* plans to publish a selection of (12-15) papers presented in the recent conference with TICCIH. Some of the sessions are planning to publish their papers in edited volumes, for example, the energy session is still in the planning stage. For more detailed information on *ICON*'s plans, contact its editor Mark Clark.

■ TICCIH inventory gains ground

The number of sites on TICCIH's online inventory of world industrial sites has been increased sharply thanks to US

Representative Peter Stott. Consulting with local members of the SIA, Peter is uploading historic places in America of international significance, starting with mine and extractive industries. The growing list has, at the time of press, fifteen mines including three historic oil wells. Each one has image and map information and details of where to find it, with a description and evaluation of what makes it important to an international audience.

■ Thanks to all the contributors. Photographs are by the authors unless stated otherwise.

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TICCIH is the world organisation for industrial archaeology, promoting conservation, research, recording and education in all aspects of industrial heritage. It holds a triennial conference and organises interim conferences on particular themes. Individual membership is £20, corporate membership £40, and student membership £10. Payment to TICCIH, Lloyds TSB Bank plc, 27 Fore Street, Redruth, Cornwall TR15 2BJ, UK; Account No: 1351659, Bank Sort Code: 30 97 00.

There is an on-line membership form on the web page.

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 four times a year and is sent to all members. If you have not received an issue, please contact the editor for a replacement. Back issues can be downloaded as a pdf file from the TICCIH web site.

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

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B-23.114-1998
ISSN: 1605-6647

Produced and printed by TBC Print Services in the United Kingdom

ICOHTEC, TICCIH & Worklab joint conference in Tampere, Finland 2010 – a critical review

Professor Helmuth Albrecht
(Freiberg/Germany)

Under the general topic 'Reusing the Industrial Past' a first joint conference of the International Committee for the History of Technology (ICOHTEC), TICCIH and Worklab was held from 10th to 15th of August 2010. More than 350 participants from all over the world joined this very well organized meeting which took place in the University of Tampere and in the Finlayson Area, a former textile factory in the city centre, now successfully reused for different purposes. The scientific program of the conference was accompanied by three excursions (Modern Technology, Industrial Heritage, Tour for museum professionals), one-day pre- and post-conference tours (National Automobile and Road Museum Mobilia in Kangasala, UNESCO World Heritage Site Verla Mill), and by a wonderful social program.

Tampere, founded in 1779 and today Finland's third biggest city with around 210 thousand inhabitants, is situated at both sides of the Tammerkoski rapids between the lake of Näsijärvi and the 18 meters deeper situated lake of Pyhäjärvi. These rapids formed the 19th and 20th century the energy basis for the development of a flowering textile, metal, shoe, leather and rubber, wood and paper industry, which led to the name of the city as the 'Nordic Manchester'. Since the 1970s most of these industries had been closed down and their factories converted into business, housing or leisure sites. Today the service sector is the most important economic sector of Tampere but the city is still a place of metal, electrical and paper industry as well as of several high-tech companies, and with its three universities and numerous schools an important place for higher education in Finland.

All this made Tampere to a good place for a meeting of experts in the field of the history of technology (ICOHTEC), the conservation of industrial heritage (TICCIH) and labour museums (WORKLAB). More than 200 papers in more than 40 different sessions and workshops in up to 11 parallel sessions devoted to a broad variety of topics were presented. [All these can be consulted on the program at www.tampere.fi/industrialpast2010/, and the conference page on Facebook has images and videos of the working and social events]. During the congress ICOHTEC and WORKLAB held their general assembly meetings and TICCIH organized a 'Workshop on Conservation Issues' as well as meetings for Transport, Local-Global, Hydropower and Electrochemical and Textiles sections.

Binding all this together was the aim of a plenary session with keynote lectures at the

first day of the congress. ICOHTEC's traditional 'Kranzberg Lecture' was given by Håkon Anderson from Norway about 'Reusing the Industrial Past – The Challenges of Interpretations', followed by TICCIH-President Patrick Martin with a lecture about 'Industrial Archaeology and Reuse of the Industrial Past'. Anna Storm from Sweden spoke about 'Towards a Competence of Change: Industrial Heritage in the Company Towns Avesta and Malmberget' and the historian and Vice-Rector of the University of Tampere Pertti Haapala closed this session with a lecture about 'Tampere in Global History'.

Out of doubt the Tampere conference was a successful meeting in demonstrating and discussing the historical and material dimensions of the congress' main topic 'Reusing the Industrial Past'. The broad variety of sessions and papers offered a view into the intellectual and practical standard of today's research about the age of industry and the efforts to 'reuse' its history and material evidences. The conference also showed the multi-dimensional aspects of this topic and of the different research approaches to it. Papers were given not only by historians, industrial archaeologists or museum experts but also by architects, urban planners or sociologists. As a 'joint conference' it was the declared goal of the Tampere meeting to bring together researchers and experts of at least three different scientific communities – the historians of technology, the industrial heritage experts and the museum community. Moreover, one basic idea of the conference was also to mix them and to give them the opportunity to discuss the same topics from different points of view. Especially in this last aspect one would have to ask if Tampere was a success or not? To sum it up: From the authors' point of view it was not a success, but at best a first step into the right direction.

Despite the excursions, the coffee breaks and the social events it is the author's impression that three different conferences took place at the same time. Sessions orientated on history of technology were held and visited mainly by ICOHTEC members and the same happened with the industrial heritage and the museum sessions. A little non-representative survey of the author among ICOHTEC and TICCIH members under the participants showed that a large number of them had no idea of the organization or the goals of their counterpart. Some participants had not even recognized that this was a joint conference of both organizations. Not to speak about WORKLAB which was nearly completely unknown by all respondents. Therefore most of the sessions attended by the author were held and visited only or even mainly by members of one of the three communities. Only one session of the conference under the title 'Round table discussion: History of Technology versus History of Science: Possibilities and Challenges of the Interaction' was devoted to

an interdisciplinary discussion. Nothing about the interaction of history of technology with industrial heritage or industrial museums! The organizers answered the authors question about this problem during the roundtable discussion only evasively. No one had the idea that this may be of interest at a 'joint' conference of ICOHTEC, TICCIH and WORKLAB.

This is astonishing because three years ago at the ICOHTEC conference in Copenhagen, the author and two other speakers were invited to give keynote lectures about industrial heritage efforts in their countries with a special focus on the interrelation to history of technology. Although this plenary session in 2007 was not very well attended by ICOHTEC members its discussion opened up a rich field of common research interests and questions for both historians of technology as well as for industrial archaeologists and industrial heritage experts. One outcome of the discussion had been the idea of a joint conference of ICOHTEC and TICCIH which has now been in Tampere. Concerning the broad variety of topics presented and discussed in the papers and sessions at Tampere this first attempt to bring together the different communities of ICOHTEC and TICCIH the conference had been a step into the right direction. Concerning the interaction between both communities much work is still to be done. Maybe the most important finding of the Tampere joint conference is that we are on our way but that the goal is still in a far distance.

ICOHTEC – A scholarly forum and a global organiser

Timo Myllyntaus

Secretary General, ICOHTEC [www.icohtec.org]

In the turbulent year of 1968 ICOHTEC was founded to pursue primarily two tasks. The first task has been to promote research, teaching and publishing in the field of the history of technology and particularly to gain deeper understanding on the interaction of society and technology. The second task has been to encourage and increase international discussion on the history of technology, especially between countries with different kinds of political systems and divergent historical experiences. These are still relevant objectives even today, although 'iron curtains' or other barriers of the Cold War are no longer preventing the exchange of information between East and West. However, even globally historians of technology are such a small group that they have difficulties in keeping contacts with their scattered colleagues and pick up relevant data from the huge flow of information that is now buzzing round the world.

ICOHTEC spreads the word about the discipline, because the history of technology is

not very well known by the general public. ICOHTEC has various advantages in order to serve as a vanguard in informing the public and students of various disciplines what the historians of technology are actually doing and what they are aiming at.

From its very beginning, ICOHTEC has been based on institutionalised transnational interface. Already in the early years, it gained a position as a Scientific Section within the Division of the History of Science of the International Union of the History and Philosophy of Science and Technology (IUHPST / DHST). It is still important to interact with this UNESCO related network, which provides huge opportunities for contacts, information and activities. All of them have been necessary for developing ICOHTEC's transnational cooperation.

For decades the main activity of ICOHTEC has been organising its renowned symposia, which have taken place almost every year. They have been successful and able to attract new and loyal members. The attendance in these meetings has varied between 80 and 400 during the past three decades. All five continents are represented in our membership, while countries industrialised before 1939 constitute the overwhelming majority.

The 38th ICOHTEC Symposium will be held in Glasgow, UK, on 2-7 August 2011. The main theme of the meeting will be 'Consumer Choice and Technology'. The aim is to examine the interaction of technology and consumer behaviour in a historical perspective; especially to focus on factors steering consumption and how consumers by their choices have influenced in technological development in the past. A transition from agrarian society to consumer society was one of the epoch-making phases in human history that can be studied from various aspects and contexts.

For a long time, ICOHTEC has been based mainly on individual membership, although it has institutional members as well. Annual subscription is 40\$ or 30€ for individuals (20 \$ or 15€ for students) and 100\$ or 75€ for institutions. Subscription includes reduced fees for our annual conferences, the Newsletter on our website (12 volumes per annum) and the ICOHTEC's refereed journal ICON, which is published as a printed volume of about 200 pages once a year and contains mainly, but not exclusively, revised versions of papers given at ICOHTEC symposia.

Forty years ago ICOHTEC was established to build bridges between the East and West. Still it is important to encourage the historians of technology in Eastern Europe and Asia, and support their work, participation in international meetings and cooperation with Western colleagues. Yet, in this globalised world we need contacts also with other continents – Americas, Africa and Australia –

because we are interested in the history of technology of all continents.

ICOHTEC continues to be a forum for discussing the topics in the history of technology. In addition, it also hopes to devote special attention to the discussion of present-day problems of technology and their relationship to socio-economic, political, environmental, and cultural issues.

Railway matters in Tampere

Marie-Noelle Polino

AHICF – Association pour l'histoire des chemins de fer en France / French Railway Historical Society

The joint conference allowed history and technology and heritage concerns to meet and be brought face to face for the best. This showed very clearly during the three 'railway sessions', carefully organized and chaired by our colleague Guenter Dinzhobl (Austria), member of the staff of the Austrian Federal Railway infrastructure company and since 2010 TICCIH national representative of Austria. Guenter is a railway historian well known for his action in promoting the Semmering World Heritage site listing and now further life and development, and as an expert in World Heritage 'railway' matters. His opening paper was quite bold in its prospect –definition and typology of railway heritage versus the conference main themes, i.e. using, reusing and preserving– and quite humble in its conclusions, as he calls for a better understanding and cooperation between railway heritage's 'stakeholders' (railway companies, heritage railway, cities and investors, and museums) and still and ever more research, to make a sound and widely spread historical knowledge an asset for heritage projects, whatever their aim. This was a welcome frame for further discussion, which encompassed three sessions and several topics: methodology and action sheet for the TICCIH railway section (call for a global and coordinated inventory of railway heritage), case-study of prominent sites (Aguascalientes in Mexico), study, history and heritage value of less known, possibly endangered railway sites (railways towns in Spain), heritage in operation and heritage preservation (historical railway buildings at the Swiss Federal Railways), railway museums and their role in preservation and conservation (in Brazil and in the Czech Republic), and means to convey to the public the heritage value of railway sites (yesterday and today media compared: case of the Semmering WH railway site).

The question of World Heritage listing was stated or understated in several papers and the lecture given in the opening session on behalf of Michel Cotte, ICOMOS advisor for the World Heritage List who had sent the last news from the most recent WH committee held in

Brasilia some days before, was very appreciated by the attendees. Beyond railway and transport heritage, Cotte gives an overview of the concepts related with science, technology, and industry heritage in the world heritage corpus of reference texts and an analysis of the WH practices which should be very useful for applicants, together with a clear view of the loopholes in epistemology and research which could explain how sites related with this heritage are still so few in number on the WH list.

Discussions made clear what, in the current development and difficulties met by railway heritage around the world, was due to specific features and not only to well-known characters held by all industrial heritage; anyhow, it sounds that railway heritage is a particularly strong example for some of them as: the questions asked by the preservation of oversized equipments and sites; preservation of entire districts or industrial complexes in a general context of urban renovation; theoretical and practical conflicts between operational maintenance and authenticity of lines and vehicles. Finally, a key question (as shown by both papers dealing with Central and South-America) is how communities and public interests take over or not railway heritage concerns from declining professional groups or small preservation societies.

The whole meeting, including all along the week fruitful formal and informal discussions (the congress programme offered many happy and festive opportunities for those) showed how Dinzhobl was right in his assumptions about railway heritage professionals' common need for cooperation and expert knowledge.

This led to the decisions made by Jose Luis Garcia Rubalcava (general secretary for the Railway TICCIH section, Mexico), and members present, to enhance the section's presence on the web and to work into two directions: first, as the section holds as a primary objective the application to the railways of TICCIH's principles and goals, as exposed in the Nizhny Tagil Charter for the Industrial Heritage (2003), the section plans to work out, through discussion among its members, a relevant addition to Charter to include explicitly the railway heritage. This discussion among members should raise a fruitful debate about the nature and extension in time and space of railway heritage.

Second, the section being eager to make available online resources for any interested party, it was unanimously decided to launch a dedicated project: to build up, on a collaborative basis, an 'inventory of inventories', summing up the online resources for a better knowledge of railway heritage in each member country (more to come in a future edition of the TICCIH Bulletin).

Finally, the section plans a dedicated international railway heritage conference, to be held within the two years to come.

Germany

Coal, water and steam: winding engines in the German coalfields

Bernard Bay

In the coal fields of the Ruhr, Ibbenbüren and Saar in the west of Germany, steam winding engines are still visible and some of these are still working today. Until 1967, year of construction of the last steam winding engine in Germany, the German collieries were using steam machines as well as electric ones in the mines of North Rhine-Westphalia and Saar basins. In 2010, two working shafts are still equipped with these dinosaur-like but wonderful machines. The reason is quite simple: collieries produce primary energy and have too much of exhaust water; so they can produce large quantities of steam used in power stations or directly in steam machines to extract coal from deep mining.

The majority of the abandoned machines are nowadays classified in the industrial heritage as ancient memorial. Unfortunately, everybody knows that classifying an object as a monument doesn't mean long term conservation and rehabilitation. As a matter of fact, some of these machines are now abandoned and in a bad shape but a majority of them have been restored by regional or local authorities or by ancient coal miners and volunteers, which is remarkable.

Here are some of these sites:

Zeche Hannover. The winding tower of the Hanover Colliery is a Malakoff tower type. It looks like a medieval fortress rising in the sky in the north of the city of Bochum in the center of the Ruhr coal field. The steam winding engine was built in 1893 by Maschinenbau AG « UNION ». It is the oldest of its type still standing in its original place. The machine has been restored and brought back to life. In this colliery, the engineer Friedrich Koepe finalized the pulley system using only one cable for two cages called since that time Koepe pulley in the mines worldwide. The site of Hanover colliery is now part of the Westfälisches

Industriemuseum . Visit from April to October on Saturdays and Sundays. Info : www.route-industriekultur.de/

Zeche Recklinghausen II. In Recklinghausen-Hochlarmark stands Recklinghausen II colliery, abandoned in 1981. Under pressure of the ancient coal miners, the local authorities acquired the site in 1988. One of the mine frames is still standing and the steam winding engine was restored in 2001 by volunteers. This was the last one to be built in 1967 by Eisenhütte Prinz Rudolph-Dülmen. The 20 meters long machine activates a pulley of 8 meters in diameter with a maximal power of 8100 HP! Visit by appointment. Info: www.route-industriekultur.de/themenroute/tr16/zeche-recklinghausen-ii.html. Under the coal tip stands the training colliery of Ruhrkohle AG. It looks like a real coal mine and visits are possible. Info on the site of RAG: www.rag.de.

Zeche Consolidation III. In Gelsenkirchen-Bismarck, the 53 meters high tower above shaft 9 at the Consolidation colliery was built in 1922 and is now listed as a protected historical monument with its two engine houses and steam winding engines. The engines were built in 1938 by Gutehoffnungshütte-Oberhausen Sterkrade. Conducted tours are organized each 2nd and 4th Sundays of the month at 2 pm (5€/person). Info : www.industriedenkmalstiftung.de/docs/325682814832_de.php .

Anthraxitbergwerk Ibbenbüren. Located 100 km north of the Ruhr in Münsterland, Ibbenbüren anthracite coal field is still active today. Von Oeynhausen shaft 1 of the Ibbenbüren colliery is powered by a steam winding engine made by Maschinenfabrik Buckau-Magdeburg in 1913, nearly one hundred years ago and still working without problem. The 800 HP machine activate a 6.5 meters in diameter drum pulley under a steam pressure of 15 bars. They are two 2-floor cages for 20 miners or 6,675 kg of material going up and down at 6 m/s from ground zero to -415 m. There is a small museum on the site. Info : www.dsk-anthraxit-ibbenbueren.de.

Bergwerk Ensdorf – Duhamel. In Saarland, near the city of Saarlouis stands Ensdorf-Duhamel colliery, the last active colliery in the Saar coal fields. The winding shaft is equipped with two steam winding engines. The east compartment is still active and powered by a two cylinder steam engine made by Zweibrücker Dinglerwerken AG in 1918. The 3000 HP machine activates a 6.3 meters in diameter Koepe pulley under a steam pressure of 16 bars / temp 300°C. The second engine is listed as protected historical monument. The Saar coal miners usually call these engines *Ensdorfer Dampf-Gigant* (Ensdorf steam giants). Info: www.saarlandbilder.net/orte/ensdorf/ensdorf_duhamel.htm.

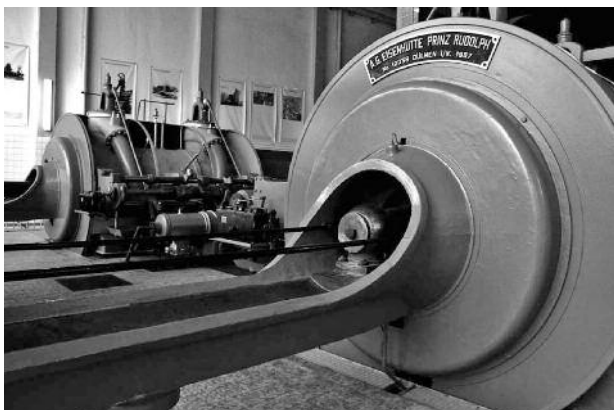
There are many other steam winding engines awaiting rehabilitation in German western coal fields : Auguste Victoria 1-2 in Marl, Fürst Leopold in Dorsten, Gneisenau 4 in Dortmund, Schlägel und Eisen 3 in Herten, Bergmanglück in Gelsenkirchen, in Ruhr; Gustav II in Velsen, in Saar. Steam machines are part of our industrial heritage and the industrial revolution has shaped our present as well as the Middle Ages or the Renaissance with their architectures and innovations. Let us try to protect at best the tangible witnesses of this heritage which is a part of us.

Italy

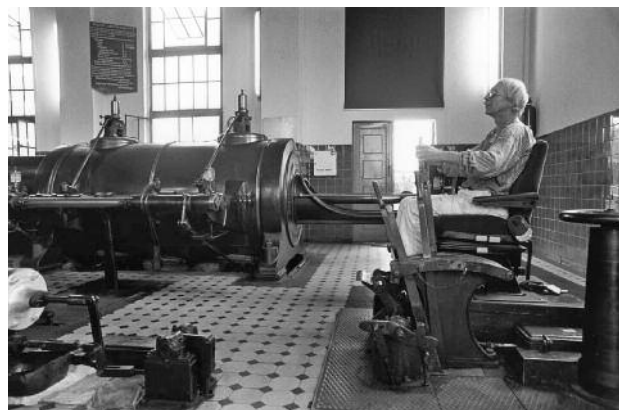
Rehabilitation of the Italian aeronautical research centre Guidonia

Dr. Edoardo Currà

A few years ago, the 'Aeronautica Italiana' and the University of Rome 'Sapienza' signed an agreement for the transfer of some significant pavilions in the 'Centro Studi ed Esperienze' in Guidonia, near Rome, from to private ownership and their use by the departments and the courses of Aeronautic and Aerospace Engineering of Rome. The Institutions involved cooperated to find new compatible uses for this complex of industrial heritage. Prof.



Zeche Consolidation III



Bergwerk Ensdorf – Duhamel

Franco Storelli, with the research group of the Engineering Faculty of 'Sapienza' University, conducted the preliminary studies to restore the complex. The work points out the peculiar characteristic of the site and its historical values, confirming the compatibility of the new uses and the necessity of a restoring project with the valorization of the scientific buildings. Unfortunately the purposes of the agreement between 'Aeronautica Militare' and 'Sapienza' University weren't honored by other Institutions involved, particularly the Municipality of Guidonia-Montecelio which didn't adapt the town plan to the initiative, and in recent years the pressure of building speculation was constant. Frequently it's possible to read or to hear in the local media new possibilities of the conversion of the site in a residential and shopping area and the demolition of the old pavilions. It appears as a strategy to cultivate the public opinion in the sense of particular interests. So this communication to the members of TICCIH aims to build a scientific interest around the case of Guidonia and save its identity, based on the values of technology, science and history. In this sense we'll apply ourselves in providing for constant updates.

The area and its buildings are intimately with the birth of the Italian Aeronautics and most of the scientists involved went, at the end of the World War II, to N.A.S.A. to prosecute their studies in aeronautical and space flying. Pioneer researches in fluid dynamics were conducted by many outstanding scientists. General prof. Gaetano Arturo Crocco was a leader in the studies of flight dynamics, and his son, prof. Luigi Crocco, after the experience of Guidonia, joined Princeton's fledgling Mechanical & Aerospace Engineering Department as the first Goddard Professor of Jet Propulsion in 1949. He made seminal and classic contributions to various branches of aerodynamics including rocket flight. Lastly Antonino Ferri conducted 'Investigations and Experiments in the Guidonia Supersonic Wind Tunnel' and after the war, in 1944, he was brought to the National Advisory Committee

for Aeronautics in Langley, US (NACA) where he continued as a major figure in his field.

The story of the Centre started in 1916 when the military airport of Montecelio was established near Rome. The first experimental centre was set up in 1928 and the definitive master plan agreed in 1931. The designers of the buildings were the architects Jammarino and Traverso, otherwise not very noted, while the head-engineer was the gen. Crocco himself.

The layout of the Centre runs parallel to the Airport. The principal building are dedicated to radio transmission, chemistry, physics, hydrodynamics and aerodynamics. The three pavilions of this last area are the wind gallery (five horizontal and one vertical) and the stratospheric gallery and ultrasonic gallery. All the galleries are built with reinforced concrete and prove a high level of precision in the construction and quality of the concrete mix. The hall of the horizontal galleries is an archeological site full of 'silent giants'. And the size is a characteristic of the hydrodynamics pool is more than 500 m long.

In 1935, the day of the inauguration ceremony of the Centre, the new town of Guidonia was founded. Guidonia is a 'unicum' in the context of the Italian new towns. There it is difficult to find the dictates of ruralism or rhetoric formalism. All the buildings, particularly the ones of the municipal place, display a remarkable expressive truthfulness. The models of the architects, Giuseppe Nicolosi, Gino Cancellotti and Giorgio Calza Bini, protagonists of the Italian Rationalism, are the spaces and the constructions of the Communes of Italian Middle Ages but their historicism doesn't diminish the originality and the severity of the complex.

The original town planning shows the Centre and the New Town as two coherent subsystems. First the town was designed considering the existent structures of the centre and its scheme is based on the axis that links the military and the municipal areas. Further the identity of the town is based on poetry and myth of the flight. All its inhabitants

were military or workers of the Airport. So Guidonia and the Centre can be considered a unique site, and the diversity of its cultural identity in Latium has to be preserved.

The results of the researches and of the congress 'Archeologia del Novecento' are published in 'Ingegneria a Guidonia', E. Currà, C. Paolini, Roma 2005 and in 'Archeologia del Novecento' E. Currà, C. Paolini, Roma 2007.

Germany

Copyright law: Architect's right of integrity railroaded?

Thorsten Lauterbach
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The Stuttgart Regional Court in Germany, balancing the right of integrity under copyright attributed to the architect of a work of architecture and the right to property held by the owner of the building, recently found against the grandson of Paul Bonatz, the architect of the Stuttgart terminus station, and in favour of Deutsche Bahn AG who seek to demolish part of that station during the construction of a new through station.

TICCIH readers (see, for example, TICCH No 42, page 2) will be aware of 'Stuttgart 21', short-hand for the long-standing project to turn the current Stuttgart terminus into an underground through-station. Peter Dübbers, the heir of Paul Bonatz, has led a large group of opponents against this project, as he is of the opinion that it threatens to mutilate the widely admired original work of architecture by 'amputating' large parts of the terminus building, namely the side ranges and the shed. The court was invited to balance the legitimate interests of the parties to the dispute. The court recognised that Mr Dübbers can lawfully point to the fact that copyright in the building has not yet expired. While that includes the rights of ownership held by Deutsche Bahn AG, it also extends to so-called moral, or authors' rights which are inalienable under



Actual view of the horizontal wind galleries.

Author's photo.



The airport and research centre, 1934.

© Aeronautica Militare

German copyright law. But where should the judicial hammer fall when weighing up the property rights of Deutsche Bahn, representing the interest to modernise the station, in the light of Dübbers' moral rights to preserve the station in its current form, none of which can claim absolute status?

The court eventually gave judgment in favour of Deutsche Bahn after a 47-page balancing act. Overall, taking all circumstances into account, the demolition of parts of the building was to be granted because the interests of the owner of the building trump authors' rights. The court agreed that the demolition constitutes significant interference with an original work of architecture which attracts copyright protection which will lead to drastic changes in the building's appearance. However, these modifications had to be viewed in the light of the period of copyright protection running out in 2026: Bonatz, the 'author' of the work passed away in 1956, and German copyright law provides for a 'life of the author plus 70 years' period of legal protection. In addition, the project did not foresee the demolition of the main station building, but 'merely' the side wings and the shed part of it, as well as certain internal parts, for example the large staircase leading from the underground to the passenger hall: in the court's opinion, the most significant parts of the building, in an architectural sense, would remain untouched. The court emphasised that Bonatz himself agreed that a railway station fulfils a public function first and foremost, and he had taken that view into consideration himself when planning the terminus building all those years ago. Indeed, Bonatz himself had agreed to subsequent, albeit less drastic, changes to the building in the light of its purpose in the past. Since the project includes a through-station, certain parts of the current building clearly lose their function they fulfilled as a terminus. Hence, the owner's desire to modernise them with regard to the strong public interest to link Stuttgart station to the European high-speed rail network – with all the consequences in terms of funding of the project, city planning and changes to infrastructure – must be recognized to the detriment of the author's right of integrity of the original work, so the court.

So, while authors' rights which enjoy a position of strength in civilian jurisdictions have featured prominently in many recent disputes between architects and owners of works of architecture, once these rights are nearing their sell-by date, or period of protection, their legal significance is diminished vis-à-vis traditional property rights. Mr Dübbers, however, has not been deterred by this first instance defeat for long: at the end of June he indicated his intention to appeal the judgment, expecting a hopefully favourable judgment to be handed down by the end of the year and a staying of any imminent plans to start the demolition in the meantime.

USA

New industrial site museums

Bode J. Morin

Carrie Furnaces (Pittsburgh, Pennsylvania), once part of Andrew Carnegie's industrial empire, supplied molten steel to the Homestead works near Pittsburgh. The first of its eight furnaces went into blast in 1881 and the Number 6 and 7 Furnaces began operations in 1907. In 1892, furnace workers took part in the Battle of Homestead, a critical labor strike led by the Amalgamated Association of Iron and Steel Workers union that ultimately required Pinkerton guards and the Pennsylvania state militia to break. By the time the company ended the bloody strike, at least 35 men had died.

In 1901, the furnaces and steel mill were incorporated into U.S. Steel and remained a large, innovative, and important American steel producer for nearly a century. The steel mill and furnace shut down in 1978 and like many abandoned industrial sites, sat dormant and decaying for decades. By 2008, however, all but a few smoke stacks and heavy pieces of equipment from the Homestead steel mill were demolished and the site converted into a 'lifestyle' center with shopping, restaurants, and entertainment venues. Six of the eight Carrie blast furnaces suffered a similar demise, but two of them, the Number 6 and Number 7 furnaces were saved and declared U.S. National Historic Landmark in 2006 a designation befitting sites of significant contributions to U.S. history.

Though saved, the remaining Carrie Furnaces are still a long way from being fully conserved, but remain an important landmark for the city of Homestead. Now managed by the Rivers of Steel National Heritage Area, the furnaces are open for 'hard-hat' tours that engage former workers and offer a glimpse into the once steel-heavy landscape as plans for a more formal museum setting develop. www.riversofsteel.com

The Boston Water Board (Boston, Massachusetts) commissioned the Chestnut Hill pumping station in 1887 at a time of increasing population, high water demand, and a growing understanding about the transmission of waterborne diseases. By 1895, the original pumping engines required additional throughput and engineers added a unique and rare Leavitt Engine designed by Erasmus D. Leavitt which is now the oldest extant piece of equipment in the building and a listed U.S. National Mechanical Engineering Landmark. By 1897, the pumping station again needed to be expanded to meet growing demand and the Board commissioned a second new pump, a triple expansion Allis Chalmers. The last of the three standing steam pumps, a double expansion Worthington-Snow, was installed in 1919. The entire

pumping station was taken off line in 1976. The ornate Richardsonian Romanesque pumping house and its three steam pumps were listed on the U.S. National Register of Historic Places in 1990 and have recently been saved as part of the Metropolitan Water Works Museum. The new entity plans conservation efforts, exhibits, school tours, and events, with funding for the museum coming from a unique source: on-site residents. Sitting in a desirable location on the Chestnut Hill reservoir, Boston developers turned some of the site's historic buildings and some new construction into high-end condominiums. A portion of each sale and a portion of each monthly maintenance fee go directly to the museum board. The museum hopes to open to the public in March, 2011. www.waterworksmuseum.org



Number 6 and Number 7 Carrie Furnaces, around 1989.

Photo: Martin Stupich, Historic American Engineering Record, U.S. National Park Service, memory.loc.gov



The Chestnut Hill Pumping Station, around 1983.

Photo: Jet Lowe, Historic American Engineering Record, U.S. National Park Service, memory.loc.gov

conference report

Patrimoines de la mobilité / Mobility Heritage

Marie-Noëlle Polino

A one-day conference was organized in Paris in July as a part of the TPTI (technology, heritage, territories of industry) Erasmus Mundus Master program. 'Erasmus Mundus' is a high-rated educational program offered by the European Commission. It helps financing upper education and cooperation between European universities and non-European countries by grants and scholarships offered to academics and students. The TPTI Erasmus Mundus Master, a common degree delivered in French by a consortium of three universities in France (Paris 1 – Panthéon-Sorbonne), Portugal (Evora) and Italy (Padua), is dedicated to industrial heritage management methodology, practice, research and teaching

and technology history. Students come from some 20 countries, the rule being not to admit more than 2 students from the same country in each class, and follow courses and go for training sessions in three countries during some for semesters.

The theme chosen was 'mobility heritage', a pet topic of the now yearly congresses of the Transport traffic and mobility Association which nevertheless still needs much explaining.

The conference program was organized in several loose main headings – Landscapes, infrastructures, networks, planning; Artifacts and architecture; Energy; Environment; Museums -under which all transport modes were present and the notion of heritage was thoroughly discussed.

If mobility heritage is intended as transport heritage and everything beyond which could in anyway contribute to moving human beings

and goods in space and time, this one-day conference was surely an achievement in setting limits to its somewhat labyrinthine structure. In a more matter-of-facts way, it demonstrated the interest of confronting views coming from different parts of the world. If, for instance, Western Europe sets forth its railway heritage as an example of continuous technological achievement and heritage preservation, African countries see in railway cross-countries lines a landscape mark of imperialist times and a disused facility which should be removed, while South-American nation are doubtful about scattered heirlooms of which is no more a transport system when the demand for increased mobility is screaming. A global and comparative approach of the different themes initiated by this conference is now on the agenda. [The full conference report can be read on www.ticcih.org].

TICCIH Conferences

Details of the conferences are on www.ticcih.org/TICCIH/news.htm

India

Bhopal 2011: Requiem & Revitalization. Call For Papers

Bhopal, 23 January – 4 February, 2011

■ Regeneration, Rehabilitation and Remembrance at the site of Bhopal Gas Tragedy: Students' Workshop, Symposium Initiative, exhibition and post conference tours. Modern Asian Architecture Network, India and TICCIH, India. Info: www.bhopal2011.in and www.m-aan.org.

World Conferences

China

Chinese Industrial Architectural Heritage

Tsinghua University, Beijing, 5 – 7 November, 2010

■ First Conference and Founding of Industrial Architecture Heritage Committee of The Architectural Society of China. Info: GYCHY2010@163.com

Belgium

The social status of coalminers throughout the world

Centre Historique Minier, Lewarde, 30 November – 2 December, 2010

■ International seminar organised by the Mining History Centre in the Nord-Pas-de-Calais (France), the Deutsches Bergbau-Museum,

Bochum Germany), the National Coal Mining Museum for England in Wakefield (England) and the Bois du Cazier, Marcinelle (Belgium). Info: www.heros-ou-martyrs.com

China

II UNESCO-ICCROM Asian Academy for Heritage Management, Urban Heritage and Tourism: Challenges and Opportunities

Macao, 1-3 December, 2010

■ Managing change in historic urban areas, adaptive re-use of heritage resources, interpretation and tourism.

Info: www.ift.edu.mo/news/aaahm2009/conferences.htm, aaahm2009@ift.edu.mo

Germany

'Work – Bodies – Efficiency: new perspectives in historical workplace studies' CfP: 18 October, 2010

Ruhr-University Bochum, 24 – 25 February 2011.

■ Workshop investigating the deep transformation of workplace configurations. In German and English. Info: lars.bluma@rub.de; <http://homepage.ruhr-uni-bochum.de/Lars.Bluma>

France

Industrial Heritage: New urban policies and the significance of re-use. CfP: 15 January, 2011

Université de technologie de Belfort-Montbéliard, Belfort, 21 – 24 September 2011

■ International seminar organised by the Université with CILAC and the Direction générale des patrimoines. Info: marina.gasnier@utbm.fr