We have the regrettable and sad duty to inform the world of Industrial Archaeology of Professor Dr. Michael Mende’s untimely death in July of this year. It is definitely no understatement to put it like that, since Michael Mende’s activities comprised wide parts of the globe.

Born in 1945 from war-fugitive parents in Northern Germany, he studied history of art after a full-time pedagogical training at Bremen University. In the early 1980’s he became Professor of Professional Instruction at the Brunswick University of the Performing Arts. He very soon started from this base to investigate scientifically the history of technology in a very profound sense as cultural history. In 1990, I had the privilege to be the editor of a book of his on the Industrial Archaeology of Niedersachsen, the Federal German state he spent all his life in. A great number of publications followed, the last of which “Historical Market Halls in Europe” appeared a few weeks after his death this September.

As a longstanding member of the VDI’s (Association of German Engineers) history group he was a regular guest at their annual meeting. In “Gesellschaft für Technikgeschichte”, founded in 1991, he also played a leading role. Internationally, he was a regular contributor to the “SHOT” meetings wherever they took place and since 1997 he served as National Representative for Germany in TICCIH. As head of the nationwide working group of the preservation of Industrial Monuments I can also speak in the name of all our members in the state offices for historic monuments, when I state our sense of loss in the face of the fact that he will no longer be a stimulating and knowledgeable participant of our semi-yearly meetings.

The shock from his sudden death from a heart attack at the age of only 63 is the more shattering as most of us can call him a friend as much as a colleague. It was in his nature to convey the enthusiasm he felt for the objects of his wide spanned professional interest to others. He was a human being that had conserved a youthful rapture for everything he got occupied with. It was a pleasure to travel with him to exhibitions or conferences, benefiting from his encyclopaedic memory that covered nearly everything from data of world history to song texts from the 1950’s.

He had a pronounced sense of humour that was able to see the grotesque or amusing side of things.

We all remember well his devotion to picture postcards which he collected in the thousands. There also was a characteristic use he made of them: he was the world’s last letter-writer. From everywhere he would send post-cards consuming the entire space with his typical tiny but meticulous handwriting. Another special trait of Michael’s were the hour-long telephone conversation one could hold with him, covering a wide spectrum of news and interesting items and insights – not always to the delight of his psychologist wife Marlies who would have to remind him that the evening meal was ready while he forgetfully exchanged views of a new book or conference contribution with his partner on the telephone.

It is because of all that and that a great number of friends, many of whom gathered at the sad occasion of his funeral in Hanover, still not have over-come the suddenness of his untimely death and find themselves again and again startled with the unfamiliar realization that he will not be with us any more. It is therefore that we stand in heartfelt mourning with Marlies, his wife of many years, trying to get used to a world that has no Michael Mende in it any more.
Aerial view of the rail station. Plans would see the sides ranges demolished and the roof rebuilt.

**Stuttgart main railway station**

Many of us have found an appeal amongst the incoming e-mails to help conserve the great Stuttgart **hauptbahnhof**. Designed by Paul Bonatz, work began on the station in 1914 but was not completed until 1927, the glass shed roof across the 17 platforms being abandoned in the process.

The city council plans to convert the terminal into a through station, rebuilding the sides and the shed. The campaign opposing the project, Stuttgart21, highlighted some of the modern techniques that are used to gather wide support for a conservation initiative through the internet (see www.hauptbahnhof-stuttgart.eu) and e-mail. 

Robert Meier, Ricardo Bofil and other international architects figure among its supporters.

**ICOMOS elections**

As reported inside, the elections at ICOMOS’ 16th General Assembly resulted in a victory for the US ICOMOS Gustavo Araoz. The new Secretary General is Benedicte Selfslagh. 

**TICCIH Ukraine**

A group of international archaeologists and historians have formed the new Ukrainian national TICCIH committee. Dr Yulian Gennadievich Tyutyunnik is the representative. They have already held their third conference on the ‘conservation of the industrial heritage, culture and landscape’ at the Universidad Pedagogica Estatal in the city of Krivoi Rog (institut@paradise.net.ua).

**World heritage experts**

In July, TICCIH sent the names of various experts to ICOMOS to carry out site assessments and desk-based evaluations of industrial sites nominated for the World Heritage List.

The four nominations were for the Mercury and Silver Binomial on the Intercontinental Camino Real: Almadén (Spain), Idrija (Slovenia) and San Luis Potosí, Mexico; the watch-making landscape of the Swiss town of Chaux-de-Fonds / Le Locle; the ancient Shushar Hydraulic System of bridges, dams, canals, buildings and watermills in Iran; and the whole ensemble of the Saline Royale d’Arc-et-Senans in Saline-les-Bains in France – already partly inscribed, this is a belated extension to include the whole site. As a result technical missions (as ICOMOS calls them) have or will be carried out by Nikos Belavias, Jaime Migone and Axel Föhl, while Francesco Calzolario, Peter Claughton, John Morris and Pierre Lamard were all asked to write desk reviews of the importance of the sites.

At the beginning of October another request was received to assess the Gold Route in Paraty and its landscape in Brazil. When TICCIH gets these appeals from ICOMOS’ World Heritage Unit in Paris (usually sent to the President), the procedure is to forward them to members of the Board and National Representatives and to consult the database of members and their interests to find suitable people with appropriate knowledge and experience who are prepared to carry them out.

**TICCIH and the World Heritage List: a strategy for advising on industrial and technical cultural properties**

This short report was TICCIH’s response to the expert workshop on science and technology held in London in January (the papers and conclusions can be found at www.unesco.org.uk/Workshop_Papers.htm). After the meeting, Dr Stephen Hughes expressed concerns (TICCIH Bulletin #40, 2008) that TICCIH might be bypassed if it was not able to complete the series of influential ‘single industry contextual studies’, begun in 1996 to guide the selection of World Heritage properties. The report, a pdf of which can be downloaded from the TICCIH website, proposes a structure and a methodology for carrying out further studies. But it also points to the need to find some funding arrangement. One option, highlighted in July by the TICCIH Board, is for universities to take on such studies as a doctorate research programme.

Thanks to all the contributors.

Photographs are by the authors unless stated otherwise.

TICCIH Officers
President: Eusebi Casanet
Museu de la Ciència i de la Tècnica de Catalunya 
Ronda d’Espanya 270, E-08021 Terrassa, Spain

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Secretary: Stuart B. Smith OBE, ‘Chygarth’, 
5 Beacon Terrace Camborne, Cornwall TR14 7BU, UK, t: +44 01209 612142, e: stuartbsmith@chygarth.co.uk
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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 those of the author/s, and do not necessarily reflect those of TICCIH.

Editor: Articles and news of recent and future events should be sent to the Editor, James Douet, Museu de la Ciencia i de la Tècnica de Catalunya, Ronda d’Espanya, 270, 08221 Terrassa, Spain, ticcih@gencat.net.

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Infographical techniques for industrial engineering as an integral tool for industrial archaeology

Professor José Ignacio Rojas-Sola

The stimulating study of everything related to the industrial heritage, and especially to its conservation, cannot be done without the help of industrial archaeology. As we know, this draws on the material culture and on the memory of work to achieve its aims. Frequently, however, the recovery of the industrial heritage is only partial, in for example the restoration of industrial architecture, of archaeological, ethnographic, philological or historical aspects, while the technological side can sometimes be neglected so that an integral vision of the industrial or preindustrial environment is not realized.

The general deterioration and the abandoned condition of many historic sites make the study and analysis of the technologies used both in construction and implementation, as well in operation, especially important if we want to conserve this interesting heritage.

For this, the classic tools of design and analysis deserve as much application as the modern applications of Computer-Aided Design and Engineering (CAD-CAE). These will help us to investigate from the technological point of view, to make graphical reconstructions and subsequent computer animation of the object, thereby obtaining an understanding how the historical object worked and facilitating in this way a virtual visit.

Museums of science and technology often present magnificent exhibitions that recreate perfectly an industrial environment, with wonderful explanatory panels, preserving oral or written records or maybe historic photographs of the period, and even using simple computer animations that, nevertheless, from a didactic point of view do not achieve their full potential.

Realising computer animations through infographical technologies needs a profound understanding of the computer techniques themselves but also the technical knowledge the engineers bring from their training. The detailed study of the engineering object in question grants us information and understanding that can not only complement static explanatory panels, but can also create computer animations that work at the real speed of the process, as it is known in the PAL system, one second of video coincides with 25 frames (static images that join to provide the sensation of movement).

Solutions using virtual reality can be obtained as well, though they need other more complex implements which provide sensitive solutions quite different to those from computer animations.

The Research Group that I direct, ENGINEERING GRAPHICS AND INDUSTRIAL ARCHAEOLOGY of the Andalusian Plan for Research, Development and Innovation and which operates within in the Directory of Research Groups of the autonomous government of Andalusia, presents one line of research that is devoted squarely to this subject: Industrial Archaeology and History of the Technology: Recovery of the industrial heritage through computer-aided design and engineering technologies.

We have been working for more than ten years on subjects related to the protoindustrialization, in most cases on the industrial agrarian heritage such as olive oil mills and presses, watermills, windmills or fulling mills, the results of many of which have been published.

At present we are involved in a project for the Spanish National I+D Plan devoted to the historical-technological study of the windmills of La Mancha, Spain (those memorably documented by Cervantes). In order to realize, for example, an animation that will accurately show the working of these mills, we need to know the true speed of the axle and of the gears between the wheels, based on the relation of frames in system PAL. This is only one instance to show why it is important to study the industrial heritage from the engineering perspective, enabling us to provide the necessary information for visitors to an interpretation center or museum.

Our line of research has a double purpose: to produce historical - technological and graphical information, as well as interpreting and explaining the reality of the activity or period. For this, engineering has to take on the study of its own development as a discipline, and doing it from the technical as well as the historical point of view.

Studying the physical remains and the old technical drawings related to our industrial heritage make possible the following:

- To reconstruct former industrial processes.
- To define technological situations of our past.
- To offer a panorama of the styles and constructional technologies used in industrial buildings and machinery design.
- To obtain models of the morphologies who might be suitable for computer animation and of describing of them in virtual form.
- To study the design codes, functional parameters and possible optimizations of the machinery that will help us to identify the ‘technological baggage’ of the rural areas of our country.

To finish this brief contribution, I want to make clear our intention of constituting a multidisciplinary team to apply for funding for an Innovation and Development Project under the 7th Framework programme of the European Union, and to request for help to recover and study the heritage associated with the culture of olive cultivation and of olive oil production, principally among countries of the Mediterranean basin.

The ‘Sardinero’ windmill in Campo de Criptana (Ciudad Real, La Mancha, Spain)
Quebec, Canada was chosen as the location for the 16th annual symposium of the ICOMOS to coincide with the 400th Anniversary of the city’s founding and the establishment of the first permanent French settlement in North America. Inscribed on the World Heritage List in 1985, Quebec was also an ideal choice as it provides a powerful demonstration of the key role of heritage in fuelling a cultural and economic revitalization of a community that had been in decline.

The theme of this symposium was “Finding the Spirit of Place: Between the Tangible and the Intangible.” With five concurrent sessions taking place over two days, I was overwhelmed by the diversity of the presentations in terms of geography, typology and philosophical or theoretical outlook. I heard that “spirit of place” was the genius of a monument’s creator embodied in the physical place, or that it emanated from the community who claimed ownership of a heritage place and expressed in its living traditions, practices and usages. From a North American aboriginal perspective the spirit of a place was an entity that existed apart from the physical form – a viewpoint which sets up a direct challenge to European approaches that see the preservation of the physical evidence as the starting point for preserving the “spirit of place.” By the end of the conference, I did not feel any closer to a clear, precise definition but I am not sure that one was needed. What was important about this symposium was the reaffirmation, paper after paper, that value and meaning in heritage cannot be limited to the physical properties of place. Value lies in the power of a place to evoke a sense of the past, to transmit the memories of place and to sustain a meaningful link between past and present within a community.

The symposium also provided an opportunity for TICCIH to reinforce its relationship with ICOMOS. Over the past year, both organizations have been working together to produce commonly accepted guidelines for the Conservation of Industrial Heritage based on the Nizhny Tagil Charter for Industrial Heritage signed in 2003. The new draft guidelines where tabled as part of the Report of the Secretary General (a copy can be found in the Documentation Centre of the TICCIH website) and Irina Iamandescu (Romania) spoke at the General Assembly expressing TICCIH’s interest in finalizing the common guidelines and its continuing commitment to work cooperatively with ICOMOS. Patrick Martin (USA) and Jan af Geijerstam (Sweden) were also very active throughout the symposium meeting with ICOMOS representatives and building awareness of TICCIH objectives.

On a final note, the symposium also marked the end of an era for ICOMOS. Michael Petzet from Germany who had served as President since 1999 was stepping down. There were two North Americans candidates for the presidency – Dinu Bimbaru from Canada who had been serving as Secretary General and Gustavo Araoz from the United States who had been the Executive Director of ICOMOS US and member of the Board of the Directors. From TICCIH’s perspective, while Bumbaru has been instrumental in preparing the draft guidelines and participated in the workshop in Terrassa, Spain last year, both candidates had been part of the review process. Gustavo Araoz won the fairly close vote, Benedicte Selfslagh (Belgium) is the new Secretary General and Jadran Antolovic (Croatia) the Treasurer. What this will mean for the future direction of ICOMOS remains to be seen, but it is assumed that the current discussions on the guidelines and future cooperative efforts will continue under the new administration.

Finding the Spirit of Place
ICOMOS 2008 Symposium and General Assembly, Quebec, Canada

Janet Wright,
Canadian National Representative

Part of the ICOMOS group visiting the Chateau Frontenac, Quebec.
The restoration project of the Grande Forge de Buffon, Burgundy, France won a prize in this year's Europa Nostra awards (see Mark Watson's account of the conference). This unique ensemble of an 18th century industrial complex includes a metallurgical factory with a foundry, a refinery and a mill, accommodation and facilities for its masters and workers as well as a chapel and an orangerie. The water-powered forge was built between 1768 and 1772 with three parallel workshops aligned with the canal containing the blast furnace, finery forge and foundry. Production stopped in 1923. It was listed as a monument historique as early as 1943. The site was opened for visitors in 1978 and the restoration began of the various industrial and residential parts of the complex, including reinstalling parts of the then missing machinery.

Cockatoo Island, Sydney
Dr Iain Stuart, JCIS Consultants

Cockatoo Island is a sandstone outlier in the bed of the old Parramatta River now submerged by Sydney harbour. It is one of a number of islands in the harbour used for industrial purposes. It was convenient for use as a graving dock as it is surrounded by deep water and the sandstone was easily quarried by convict labour to form the dock. The combination of docks and convicts continued until the 1890’s when Cockatoo Island eventually became a large dockyard with extensive ship repair and construction facilities. Many of Australia’s naval and merchant ships were constructed here and the two graving docks could service ships up to the size of a battle cruiser or light aircraft carrier. Precipitously closed in the 1990’s, Cockatoo Island suffered from the demolition and sale of much of the infrastructure and remediation of site contamination. It is administered by the Sydney Harbour Federation Trust.

This section is partly based on the reports presented at the TICCIH National Representatives’ meeting in Stockholm in July
and the United States spent twelve days on Cockatoo Island dreaming up new, experimental and creative possibilities to revitalise this site. The report on this dreaming is presented in Urban Islands Vol 1: Cuttings (Joanne Jakovich (ed), Sydney University Press, 2008). The book contains a wide variety of theoretically informed papers. The word papers in its academic sense is not correct here – they are impressions, comments, reports of performances, design images. They swirl and intertwine with the imagined history of the Island (some architects cannot tell a slip from a dry dock) and while they provide a welcome relief from the standard management recommendations in a conservation management plan I do wonder what to make of them. I would recommend this work for all who are interested in post-modern architectural approaches to industrial heritage rather than the standard museum/adaptive reuse approach. As they keep running Urban Island’s there is presumably the opportunity to participate as well.

(Disclaimer – Dr Stuart worked as part of the team preparing the Conservation Management Plan for Cockatoo Island)

Securing the future of Europe’s Engineering Heritage

Europa Nostra Forum, NewcastleGateshead, UK, 2008

Mark Watson
Historic Scotland

Engineering, the harnessing of the forces of nature for the benefit of man, was the big subject addressed by a Europa Nostra forum in the twin English cities of Newcastle and Gateshead, linked by a series of striking 19th and 20th century bridges. There also was opportunity to see the Stephenson Engineering Works, and an outstanding travelling exhibition prepared by the Technical Universities of Gdansk and Kaiserslautern on Tczew bridge in Poland, a wrought iron lattice railway bridge (1846-57) that had an eventful war. It showed how an international approach adds value to the understanding of an engineered object.

Sir Neil Cossons began by reminding us that “to engineer is human”. Then Arthur Spiegler described the achievement of the Vienna waterworks in bringing water from the Alps in 1873 followed in 1910, when the Viennese population peaked at two million, by a second longer pipeline of 270 km and 26 aqueducts. Rather than singling out individual features for monument protection he argues the whole ensemble needs consideration.

Workshops touched maritime and railway heritage under the themes “valuing, understanding, caring and enjoying”. Eusebi Casanellas spoke of industrial heritage in its historic and social context. To Axel Fohl, technology did not respect international borders, so neither did his books. Looking at past Europa Nostra winners, 13 out of 145 awards were industrial: a reasonable balance. A future task is to fill the gaps in the history of architecture by history from below. Iron and reinforced concrete need research, for example.

Ian Ayris explained how a heritage audit in England helps to identify such gaps. Of 610 sites, 11% are extractive, 57% are in manufacturing (divided between organic and inorganic, so 250 wind and water mills are represented, but few shipyards), 8% represent power and 24% represent transport (mostly railways). Half of these sites rely on volunteers to survive.

Andrew Backhouse sees “Industrial Powerhouse” as the brand for ERIH in the north-west of England, where 17 sites together attract 2.5 million visitors. The Ruhr projects a coherent image but some UK tourist organisations do not welcome the industrial heritage brand. ERIH delivers cross marketing and shares good practice, so where next, he asked, at the end of this EC-funded phase?

The architects behind the Europa Nostra Award winners Camden Roundhouse, London (2007) and the Van Nelle Factory, Rotterdam (2008) described their interventions. John McAslan Architects sought to reignite the original ethos of the railway roundhouse by a girdle outside and by service and circulation routes in the undercroft. Wessel de Jonge said that the new function at Van Nelle should follow its form. The famous façade is now treated as a ventilation inlet behind a secondary glazed corridor that created a climatised working environment for the 115 companies the factory now holds. The development was part funded by tax credits for investment in a listed building.

Europa Nostra then debated its draft declaration on engineering heritage. Medals were also won by Tour et Taxis, Belgium, and the Grand Forge de Buffon, France. The full list of Award Winners is at http://www.europanostra.org/awards/2008/aureates_country.html
Towards the Inscription of ‘The Tomioka Silk Mill and Related Industrial Heritage’ on the World Heritage List


Dr Miles Oglethorpe
UK TICCIH representative

The latest in a series of events supporting the nomination of the Tomioka Silk Mill and associated silk-related industrial heritage was organised by the Gunma Prefectural Government. Keynote lectures were delivered by Dr George Agungu from the UNESCO World Heritage Committee, Dr Christopher Charlton and Dr Miles Oglethorpe. There followed a panel discussion co-ordinated by Dr Keichi Schimizu of the National Science Museum in Tokyo and also involving Professor Hidetoshi Saito of Tsukuba University and Professor Yukuaki Ishihara of Maebashi Kyoai Gakuen College.

There are nine candidate sites on the Japanese tentative list of world heritage properties have been managed. His recent article in TICCIH’s journal, Patrimoine de l’industrie (No. 16, pp. 91-94), describes it in detail.

In addition to the mill itself, the major aim is to include other elements of the cultural landscape of which it is a part. These include silkworm farmers’ houses in the sericulture landscape of Akaia region, the Usune Grand Mulberry Tree (thought to be the oldest in the world), the archaeological remains of early silkworm egg storage facilities, the Takayama Sericulturists’ School, the beautifully preserved Tomisawa’s (silkworm farmer’s) House, the old Kanra-Sha Obata storage building, and two associated railways at Usui Pass and Old Kozuke. The urban landscape of silk weaving mills in Kyū is also of great interest.

The nomination of Tomioka is most welcome, and if successful, it will be the first industrial World Heritage Site in Japan. For a country with such a prominent industrial history, international recognition of its industrial heritage is long overdue. TICCIH has a strong presence in Japan, and its Japanese membership co-organised a hugely successful conference on industrial heritage and tourism in Nagoya in 2006. However, the extent and importance of Japan’s industrial achievements and the associated built heritage is still often overlooked, as is demonstrated by the recent loss of the Yosami Radio Station. The hope is therefore that Tomioka can help to ignite and sustain a greater interest in and respect for industrial heritage in Japan, and that in the future, aided by the work of Japanese colleagues and of TICCIH Secretary, Stuart Smith, there will be other industrial candidates included within the tentative list.

Sustaining Heritage: Giving the Past a Future
Tony Gilmour
Sydney University Press
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AUS$ 34.95 plus postage
Available from www.sup.usyd.edu.au

Despite sustainability being the trendy word of this generation, if we are to keep the past for the future we need to work out how to do it. Tony Gilmour has presented an interesting discussion on one side of the issue of sustainable heritage by looking at heritage economics. His broad argument is that commercialisation has been a continual part of heritage and should be dealt with seriously as a partner for heritage conservation rather than being seen as the enemy. Gilmour looks at three broad areas: an understanding about how heritage conservation is financed; the debate about whether the past has been too commercialised; and how effectively heritage properties have been managed. His conclusion is that despite cries of alarm from some commentators about the lack of authentic heritage in many commercialised projects, commercialisation has been and always will be part of heritage conservation due to the lack of resources. His main case study is that of the Museum of Contemporary Art housed in the former Maritime Service Board building at Circular Quay in Sydney. This is a useful study for Gilmour’s purposes as it was changing assessments of heritage values, varying proposals to improve the precinct by development and changing funding models as the project developed. This study allows the reader to see the varying issues raised by Gilmour in play and how they were all balanced, although one might suggest that the fundamental problem was the concept that people would pay to see contemporary art. Tony Gilmour has written an interesting and thought provoking book which provides much of interest for all heritage practitioners (including TICCIH members) to dwell upon.

Dr Iain Stuart
JCIS Consultants
During the 19th century, a few towns developed into specialised weavers of ribbons and tape, with complex networks of domestic workshops and factory-based production. One of these is the Spanish city of Manresa, where production just about continues but the heritage of ribbon-making is still visible everywhere. The local Technical Museum, one of the ‘franchise’ museums in the national Catalan Museu de la Ciència i de la Tècnica, inaugurated a new permanent exhibition in September based on its important collection of ribbon weaving and finishing machinery.

The exhibition is structured through a chronological tour of the different areas of ribbon production. From the town’s 18th century silk-weaving tradition up until the ribbons of the 21st century, the exhibition designer has taken a scenographic approach that tries to bring the visitor into the different workspaces where the narrow fabrics were woven. So the passementerie workshop is the basement of an 18th century house, with the reproduction of an ancient workshop from a drawing of Diderot on the wall. The attic workshops that were typical of the town until relatively recently, and the weaving shop of the factory, combine recreations of the workspace with conventional exhibition materials: mural images give us false perspectives; wooden floors of the older productive spaces, concrete for the more modern factory spaces; lighting (lanterns for the workshops, fluorescent tubes for the factory); façades reproduced with textured printing; a big factory entrance, full-scale figures standing in front of back-lit panels and stage props complete the different resources that suggest the industrial processes and their setting.

The museum itself is under the monumental vault of the town’s old water reservoir, built in 1865. Three identical brick vaults enclose a space of 24,000m and held 12,000 m3 of water. It was fed by the Sèquia, a 14th century canal which has supplied the town with its water for six centuries. The other section of the permanent exhibition explains this great work of medieval engineering, which transformed the agricultural production of the area as well the urban living conditions in the town. Manresa’s water comes from the Sèquia to this day.