



Opinion

Ways to escape constantly conflicting issues

Professor Michael Mende, TICCIH National Representative for Germany

After a hundred years of operation, the 'Overseas Harbour' in Bremen was finally filled in. To prevent any drift of the soil in the meantime, rye has been planted. While it was still growing, the last vessel with 15,000 tons of rye left the nearby grain elevator for Riga. Both facilities were among the structures once amazing thousands of tourists on their harbour cruise.

Near both sites, they could take a look at large shipyards, the cradle of ocean liners like the 'Bremen', today the icon of German navigation and advances in shipbuilding. Passing the giant grain elevator, only twenty years ago still the biggest in Europe, the visitor enters the basin of the Timber- and Factory Harbour, where oil and grain mills, coffee and cacao processing plants still document the efforts once made to conquer the global market by promising high quality products through equivalent architecture.

How the heyday seems to be over. Not only bulk carriers demand soundings which would imperil the jetty walls. The complete shift to the container requires vast spaces for storage and a direct access to the motorway. The old free-port of Bremen, however, was based on railway traffic and warehouses. In some respects, the city therefore seems to be endangered by the loss of its historic identity, and even worse, of its right to figure as a federal state of its own.

On the other hand, both sea and inland navigation still retain many future options. Most cities in Germany are situated on a waterway and if their ports are not to be converted into promenades or marinas, they might play a role in the logistical concepts recently arising with the shift to electronic commerce, in particular by the big firms of the automotive industries. Recently creating an electronic exchange to organise global component supply, they might soon need centres of embarkation, distribution, and even final assembly. As the domestic market continues to be the most important for even the big manufacturer, his plant has to be settled near to the prospective consumers.

Ships are cheap but rather slow carriers. Many goods, and in particular those of value and at an advanced stage in manufacture, demand a 'just in time' distribution. There should be no more vast buffer storage consuming a considerable part of the investment. So most automobile components are going by trucks which, however, are increasingly jamming the roads. Therefore a global controlling system based on the internet, combining shipping with accelerated rail transport facilities centred on seaports, is seen as an escape from the bottlenecks.

Such a combination could be a way out of the dilemma many harbour cities now face. In most cases, pleasure grounds, marinas and residential areas are proposed as an escape. However, more and more are threatened with failure because of over-capacities here which have meanwhile emerged. So, remembering their industrial origin might grant harbours the way to enter the new industrial age. In any case, it would allow them to preserve a considerable number of typical structures, acting furthermore as landmarks and securing the identity of the harbour city.

As there is constant change in the demand for spatial resources, the task to preserve the industrial heritage will never end. Every time there have to be new efforts to make inventories and to take decisions about what to preserve and how to interpret it by discovering the historical message and thus the cultural meaning.

TICCIH News

Art and Industry. Luis Badosa wants to promote the study and understanding of art and its relationship to industry and its heritage. He distinguishes the fields of space – architecture, sculpture and the environment – iconography – representation in the fine arts – production – industrial design and the applied arts – new expressions, forms and materials – installations, etcetera – and technology – new technologies in contemporary art. He is presenting 'The presence of art in the future indus-

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trial museum' at the London conference and wants to bring together anyone concerned with this interesting angle on industrial heritage. Luis Badosa, Euskal Herriko Unibertsitatea, Bilbao, Spain

Secretary Stuart Smith's work to make TICCIH into a registered Charitable Trust in England has almost finished, and the changed legal status should be finalised at a Board meeting proposed for the spring.

The first version of the TICCIH Directory of Members was issued in February. A revised edition, updated with those corrections that have been received since, will be sent out in April, but only the electronic version, as the costs of distributing a printed copy are so much higher. Members who have recently gained access to e-mail and wish to receive the updated Directory should request a copy and send their electronic addresses to which it should be directed.

The Associazione Italiano per Il Patrimonio Archeologico Industriale (AIIPAI) has been officially created the Italian Section of TICCIH. The National Representative Prof. Giovanni Luigi Fontana, of the University of Padova, is the President, Gregorio Rubino (Univerità Federico II; Napoli and Ivano Tognarini are Vice-Presidents, and Daniela Mazzotta the Secretary and Treasurer. This is the first truly national institution defending and representing the interests of industrial heritage in Italy, and has been welcomed by the TICCIH Board.

The new TICCIH representative in Mexico is Belem Oviedo Gamez, Director of the Archivo Historico y Museu de Minería in Puebla, Puebla, who is President of the Comité Mexicano para la Conservación del Patrimonio Industrial. It is intending to publish the first book on industrial heritage in the country, as well as the proceedings of the 1st Latino-American International Conference. It is considering founding a Documentation Centre. The Museu de Minería has been donated the site of the Mina de Acosta (c.XVIII-XX) by the Compañía Real del Monte y Pachuca, and restoration work is progressing to show the technological processes under Spanish, British, North American and Mexican workers. It will include six old mines and an 18th century hacienda.

Report

The San Blas ironworks, in Sabero (León): the first coke blast furnace in Spain

Julio M. Vidal Encinas

In 1846, a year before the pioneering opening of the similar iron works of Mieres y Trubia, in Asturias, the first stone was laid of what was to be one of the first modern iron and steel works in Spain, the Fábrica de San Blas, in Sabero, in the province

of León. This was distinguished, primarily, by being the first that used coke as fuel in the blast furnaces that it came to have. Coke is a product derived from the calcining of fossil carbon, the point of which is to eliminate its volatile components, such as hydrogen, nitrogen, sulphur and oxygen, which raises considerably its energy and calorific value, as well as its compressive strength. Secondly, it was equipped with puddling furnaces, that served to improve considerably the quality of the cast iron, coming from the blast furnace, eliminating its carbon content, a process used in England since 1784. Finally, it included rolling mills, necessary to obtain the products of continuous production on a large scale, in an advanced level of manufacture – round and square section, strips, sheets and other types of rolled iron.

But it is not for this that Sabero is distinguished, but because the first steam engines – inseparable from this sort of installation – to be used as the source of mechanical energy, in an area much larger than the province of León, were used here. In effect they served, firstly, as bellows, to blow air into the base of the blast furnace and thereby help the oxygenation, which improved substantially the combustion of the coke for reducing the mineral iron. And secondly, to move the machinery – mills for cylinders and strip iron, hammer, shears – of the works. All these elements, succinctly described, were what distinguished, in the period, the so-called 'English ironworks', and represented a most advanced technical concept, fruit of the industrial revolution that, some time before, had become established in England. But why did all this occur in a small site at the entrance to the Montaña de León, with no tradition of iron-working, that, according to the account of P. Madoz, had hardly more than a hundred inhabitants, far from the capital and with it, what were then the most important means of communication?

There is no doubt that we must look for the answer to this question in the conditions that came together in the Valle de Sabero itself. Not for nothing were the two fundamental elements abundant: on the one hand, it was rich in coal, as the prospecting of an English mining company had shown in the 1820's, and on the other, it had iron ore in the country nearby. However, we think that the real reason for the establishment of the ironworks 'a la inglesa' in Sabero was the arrival of a singular person, Santiago Alonso Cordero – el Maragato Cordero, as he was known in political circles in the Spanish capital – at the company promoting the scheme of the mining activities in the valley, principally the Sociedad Palentina de Mina and, with the arrival of our main character, the Sociedad Palentino-Leonesa.

Santiago Alonso was for his whole life (1793-1865) a determined liberal, vital support for the liberal governments that were formed in our country in the middle of the 19th century. He participated also in the Carlist Wars [between supporters of absolute monarchy and democracy. Ed.], heading a group that defended the democratic and constitutional cause. This meant that he was persecuted, to the point that he had to go into exile in Europe, making a tour of various countries, Portugal, England and France. His stay in the latter two, especially Eng-

land, allowed him to get to know the effects of the industrial revolution, the application of which to the production of iron he was concerned to bring to his country. In this he was aided by Casiano de Prado, geologist and intimate friend of Alonso: both shared liberal progressive ideas.

The Ferrería de San Blas sums up, in our view, in a particularly noble way, the liberal idea of progress. The considerable value of the remains of this works is increased by the fact that the similar sites, of Mieres, Trubia, in Asturias, and others, have been destroyed by the superposition of more modern factories. And here is rooted the interest of merit of San Blas: in no part of Spain can an industrial complex of the first period of iron and steel be seen, something we hope will be valued properly when the site of the Municipal Mining Museum is decided.

The Ferrería de San Blas, that has been listed since 1994, constitutes not only the best example of the industrial architecture in the region but whose value extends beyond the province and even the country. The characteristics of construction of, for example, the Placa Cerrada, the forging and rolling hall, with the singularity of its brick diaphragm arches to support the high roof, are without comparison in the industrial architecture of the period, much poorer and more functional. Its affinity with the basilica plans of classical architecture and the Medieval manufacturing buildings – such as the dockyard sheds for shipbuilding – indicate the presence of an architect or engineer especially civilised and careful. At the same time, its semi-circular windows are also a clear reference to classical architecture, particularly to the Roman baths that the French architect J N L Durand made fashionable in the France of Louis XVI. Nothing similar exists in Spain. Neither the container nor its contents, this last an aspect which relates San Blas with the history of iron and steel metallurgy in a clear and notable way, in its final modern phase, compared with the pre-industrial forms of production so well represented in León, particularly at El Bierzo (Herrerías de Compludo, Tejedo de Ancares, la Portela en Vega de Valcarce, etc.)

Its value is being considerably increased, moreover, by the archaeological excavations that have been carried out in the ground of the forging and rolling hall. These works have provided important information to reconstruct the functional topography, the location of the machinery – the beam engine, the rolling and cylinder mills, sheers and hammer, puddling furnace, and thus to know the different areas of work. The buried infrastructure for the evacuation of water, gases and for conducting the steam from the machines has also become apparent. It is a truly surprising archaeological site that, like the blast furnaces themselves, is well capable of reconstruction – including the machinery - to show to eventual visitors: nothing like this is currently open in Spain, because nothing like it exists, which is its attraction. The singularity of San Blas, its value as a protected monument, demands the adoption of decisions after a deep and calm reflection.

In Spain, as far as we know, there have been no archaeological excavations of installations similar to Sabero. This compli-

cates the correct interpretation of the remains that have been uncovered, which ought to include an exhaustive documental, historical and technical study, though the ironworks a la inglesa have the advantage of following constructive patterns, of layout and working, which are very standardised. For this reason, one of the objectives that we are pursuing in these brief notes, suggested by Mr Stuart B Smith and kindly accepted by Sr James Douet of the TICCIH Bulletin, is to aim for an exchange of experiences with researchers and managers of cultural heritage of an industrial character who have had among their themes of research– and/or cultural assessment – similar industrial constructions.

– *Julio M. Vidal Encinas, Junta de Castilla y León, Servicio Territorial de Educación y Cultura de León*

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Worldwide

MEXICO

Eiffel in Mexico

Francisco Sanchez Lopez

The story goes that in 1868 the San Luciano mine was discovered and by 1872 the Eisman-Valle company started the mining works. In 1885, the French mining company El Boleo bought the copper mine and started with the construction of the factory and the urban planning of the town. By 1886, the first oven was finished and opened to melt copper for production.

The Santa Barbara Church was designed in 1884 by Gustave Eiffel, the metal panels and structure were made in 1887 in Africa as a pavilion for the Paris 'Universal Fair in 1889 (it was shown next to the tower). Both won an award.

In 1895, the pavilion was bought by Belgium and was exhibited at the Brussels International Fair, and was kept in the country until one of the French directors of the El Baleo bought it. He shipped it to Baja California Sur by a sail ship and it was built in the new-born town of Santa Rosalia, to honour the Santa Barbara Virgin.

The sailing ship travelled the Atlantic ocean to the Magellan straits at the tip of Argentina, crossed to the Pacific and sailed northbound to Mexico and the Gulf of California to the town of Santa Rosalia where the metal panels and structure were disembarked and built by Yaqui Indian slaves from Sonora after they were captured as prisoners of war against the Porfiro Diaz regime. This was in 1895-96 and it was finished in 1904-1907.

The old pavilion, now was a Catholic church, was made with

metal panel walls, curved pre-fabricated panels and a structure with a tower and iron belt. By 1954, the El Boleo mine closed down their copper production. In 1984 the Santa Rosalia downtown was declared a Historical Monument by the State Congress.

The architecture besides the church, the Government Palace, a hotel, market and many residences for the French directors and workers, follow a design done also by Eiffel; his original architecture was a French colonial style. The Mexican workers houses were made of wood following the French style. The equipment, machinery, railroad tracks, train and a lot other things were brought from France for this copper mine factory and now are being destroyed.

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ENGLAND

The social historian and museum expert Kenneth Hudson died on December 28, 1999. A prolific writer, he had a strong influence on industrial heritage firstly through his 1963 book *Industrial Archaeology*, and subsequently as President of the European Museum Forum. The book came out at a time when what historic industrial remains in Britain that had survived the war were being threatened by redevelopment, and his enthusiasm and encouragement helped stimulate the foundation of the subject. Though he later disparaged the name industrial archaeology, as he saw it had become restrictive for what had grown into a much wider field studying work in the industrial society, he did much to popularise and legitimise the subject.

Hudson had already written two books on literature when *Industrial Archaeology* was published. Two years later he became the founding editor of *The Journal of Industrial Archaeology*, aimed at what was then a booming interest in local history on the part of amateur, or non-professional historians.

Widespread participation was what he wanted to encourage, and he continued to value the involvement of volunteers above the work of academic historians. He carried this attitude into his museum work after he was invited by UNESCO, in 1971, to research 'forward-looking ideas in museums'. *Museums of the Eighties* was published in 1977, the same year that he launched the European Museum Forum and its annual Museum of the Year Award, supported by UNESCO. He wanted museums to be relaxed informal places, rather than solemn for the worship of objects, with chairs to sit down in, and he was passionate for the Scandinavian eco-museum concept, with its high level of public participation.

GERMANY

Two recent events are worth noting. 'In the sign of the sheep' is an exhibition on the history of wool organised by the Factory-museum Nordwolle, part of the municipal museum Am Turbinhaus 10-12, D-27749 Delmenhorst, from 22 March till 14 May. The 4th Freiberg Colloquy on Industrial Archaeology is on 17

and 18 November, 2000, at the Mining Academy, dealing with the late 18th and early 19th century cotton mills around Chemnitz and Freiberg. Information from Prof. Dr. H Albrecht, TU Bergschichte, Nonnengasse 22, D-09596 Freiburg. Professor Michael Mende

Publications

'Industrial archaeology in Kenya,' *Newcomen Bulletin*, N° 175, December 1999, pp10-17

This is the fascinating contribution by P J English in the *Newcomen Bulletin*, published by the Newcomen Society, London. It includes a brief historical summary and, most worthy, a short but dense list of industrial/technical landmarks, offering a lot of information which might be even used for the purpose of a survey. Since TICCIH has recently expressed its will to get into closer contact with any African country having experienced industrialisation since the bygone colonial times, and until recent developments in the times of independence, we should be grateful to the Editor of the *Bulletin* if he could help us corresponding with the author.

— *Louis Bergeron (Contact Dr Maria Teresa Maiullari Pontois, TICCIH Membership Secretary, fax +33 145 722044)*

Events

NAMHO 2000

14-18 July, 2000

First international conference of the National Association of Mining History Organisations, in Cornwall, Great Britain. Organised by the Carn Brea Mining Society and Camborne School of Mines, who would like to receive proposals for papers from other countries. Contact Maureen Holmes, Carn Brea Mining Society, Rivergarth, Bar Mea-dows, Malpas, Truro TR1 1SS, NAMHO@csm.ac.uk

Heritage Forum International,

20-22 June 2000, London

Congress and heritage trade fair, has the themes Heritage Master Plans, Heritage in Danger and Heritage and Tourism. TICCIH would be interested in the possibility of sharing a stand in the exhibition section. Information from SJS Business Services Ltd, Company House, 37 Church Lane, Lowton Warrington, Cheshire WA3 2AS, UK www.heritage-forum.com

TICCIH 2000: The Millennium Congress

30 August – 3 September 2000

3-7 September post-conference tours

First announcement and Call for papers

The next full TICCIH conference will be in London, Great Britain, and promises to be a major event and an important opportunity to consider the state of industrial heritage at the opening of the new century. The academic programme is being managed by Dr Barrie Trinder. Plenary sessions will be held on 'The Industrial Revolution of the Eighteenth Century' and 'Mass production and consumerism 1850-2000'. Two sessions will be for professional workshops each with eight groups discussing a wide spectrum of themes relating to methodology and management, and to various other topics. Abstracts are invited for papers based on research or archaeological evidence, outstanding conservation initiatives, or international archaeological collaboration. They should be submitted to TICCIH2000 Congress Administrator, 42 Devonshire Road, Cambridge CB1 2BL, UK, tel +44 (0)1223 323437, fax +44 (0)1223 430396, no later than 21 October 1999.

From 3 September there is a choice of regional tours, with the presentation of further papers, to Cornwall: non-ferrous mining and the Cornish experience; Wales: the presentation and interpretation of coal-mining sites; and to Scotland: the sustainable development of industrial sites. The Congress ends in Manchester on 7 September, for a final meeting and reception as guests of the British Association for Industrial Archaeology (AIA), whose annual conference is there from 8-14 September. The Association has invited TICCIH delegates to remain for this event.

Languages: English and French. Registration will be around £275 for the London Congress, including meals, study tours, a copy of the History of Technology in Europe and the Congress Transactions, and £150 for each of the tours. Accommodation costs are not included, and will range upwards from £30. For more information, contact Rosy Hay-ward, TICCIH2000 Congress Co-ordinator, The Science Museum, London SW7 2DD, UK, tel: +44 1223 323437, fax: +44 1223 460396; ticcih2000@nmsi.ac.uk

Cette annonce aussi disponible en français.

Archaeometallurgy in Central Europe

12 and 13 September, 2000, Herl'any, Slovakia. Call for papers

Research results related to the beginnings of metals production and working, in E Europe and elsewhere. German and English. Registration \$150. Proposals for papers by 15 February, 2000. Prof. Ing. L'ubomír Mihok, Hutnícka fakulta, Technická univerzita, Letná 9, 042 00 Kosice, Slovakia, tel +421 95 602 3151, fax +421 95 6022752, pribul@tuke.sk