TICCIH
THE INTERNATIONAL COMMITTEE FOR THE CONSERVATION OF THE INDUSTRIAL HERITAGE

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# Opinion

## The Viennese "Gasometer-City": A container for gas becomes a container for people

*Angelika Baumann, TICCIH Committee Austria*

The gasworks in Wien-Simmering were built in 1896-1899 following an international competition won by the Berlin engineer, Schimming. Theodor Hermann worked out the details of the project which had been further modified by various experts. The construction was overseen by Franz Kapaun.

Originally the gas was produced on site in 60 furnaces and subsequently stored within the stone buildings in four, telescopic steel containers, each with a capacity of 90,000 m3. Following the conversion to natural gas, the gasholders were closed down in 1985/1986.

The high quality of the building materials, combined with the meticulous construction and proper maintenance up to the time of its shut-down, assured a good substance of the building.

A competition, carried out among Austrian architectural students in 1986-1987, brought a spate of suggestions for a new usage which would leave the exterior appearance intact and retain the character of the interior.

The project, carried out from 1996 to 2001, contains parking areas on the lower floors, a shopping mall on the same level as the former entrance, office and residential space on the upper floors, as well as an event hall in container B with a capacity for 3,000 people. Several construction firms and four planning teams: AJN-Jean Nouvel (Paris), Coop Himmelb(l)au, Manfred Wehdorn and Wilhelm Holzbauer took part in the realisation of the project.

Critique: Considerations regarding the evaluation of the project from the historical preservation point of view

The area surrounding the former Gaswerk (Municipal Gasworks) Simmering is of an industrial-commercial character. The functional aspect of the final project is limited, however, to the commercial-residential sector. The challenge of establishing a technical-commercial or industrial function was not addressed. Neither the already available infrastructure (i.e. railway and highway connexions), nor the historical preservation and industrial historical aspects were considered. Looked at from the functional aspect, the final project could have stood anywhere you please in any urban setting. There is no positive dialogue visible between old and new. This is most apparent in the positioning and scale of the 'shield' in relationship to the former regulating building.

The importance of the Gasometer in terms of historical preservation is essentially based on the following criteria:

1. The cylindrical interior, which was unique in regard to its size and impression of space, and

2. The technical equipment (bell-jar construction) which was also unique and, up to 1985, still fully functional.

The final project used the building-within-a-building principle. The implanted free-standing construction which destroyed the impression of space, makes it impossible to experience the full size of any of the four gasometers.

None of the technical equipment - not even in part - was retained, thereby making the former on site function unrecognisable.

In this way, the two essential criteria for historical importance were destroyed.

What remains is the outer shell which consequently gives the effect of mere stage scenery. In addition, the exterior is unsuitable for residential and office purposes. A prime example are the apertures which were created to provide sufficient light, without first taking into consideration the architectural language of the facade.

The stage scenery effect is intensified by the crossbars of the old windows which merely hang in the air without glass. No consideration of the formation of the original brick construction (i.e. floor divisions, windows) was taken. All this strength-

ens the impression of merely an implant that is in no way connected with the core of the building.

The crowning disaster in handling one of the most important European industrial monuments is best exemplified by the roof. The original construction of the Schwedler-Kuppel was perverted. The lantern has no function whatsoever. It merely copies the original contour, and by doing so plumbs the depths of kitsch.

In conclusion, it can be said that the change of usage in this case did not lead to the preservation of an historical monument, but rather to its irreversible destruction.

The mendacious handling of this artifact - which is truly no longer an artifact - has not served historical preservation in the least.

# TICCIH News

## Change of internet address

The TICCIH web page, after some weeks in oblivion, has now returned to cyberspace with the slightly amended address http://mnactec.com/TICCIH. Please update your browsers, and any other sites that had links to the TICCIH page, with the new formula.

# Report

## Restoring Historic Machinery

I would like to develop some principles for the restoration of historic machinery, based on my own experience as a consultant engineer for historic machinery.

**1 - General methodology**

The first and most important question to ask is why and with what purpose we want to restore a machine. Is it only for exhibiting, is it for making occasional demonstrations or is it to be used it as it was in the past? A discussion with the conservation department of the museum is always necessary to clarify this purpose. The choice determines the kind of intervention to be made.

Then the restorer drafts a restoration proposition, in which the consequences of the restoration choice for the machine are clearly explained.

Finally the restoration may be realised. The restoration report is indispensable and the language must be sufficiently “general” so that it can be read and understood 100 or 150 years later: the meaning of over-specialised words can change over time.

**2 - Restoration choices**

Each machine is a special case. I will explain here the different answers and their consequences to the main question: why and with which purpose do we want to restore a historic machine?

a) Only for exhibiting.

The machine stays as a Museum object, like a painting; the machine itself is the most important thing. It is essential here to respect the original materials. It is also a facility when the machine needs several different power sources (electricity, gas, steam, hydraulic, pneumatic, etc.), and when it’s difficult to run.

For: no change to the machine. If some parts are lost, it’s possible to complete the machine with parts removed from a similar machine. If this is not possible, it’s better to make nothing than to guess.

Against: the machine is dead and the public can’t understand how it was when it was running.

b) Running occasionally for demonstrations.

The movement of the parts is more important than the machine itself. Usually some changes are necessary of original materials and parts. The best example of this is a steam engine running on electricity or compressed air.

For: the movement and use of the machine are easily understood.

Against: in spite of some changes, necessary for running the machine, it has to stay a museum object. All the changes have to be reversible.

c) Using as it was in the past.

Here the know-how and the product are important; it is still a living machine. Changes and modifications are possible (there’s no problem changing a bronze bearing for a Teflon or ball bearing). The machine is more repaired than restored. So a hydraulic hammer or a power hammer can be run.

For: a good understanding of the production process.

Against: maintenance is necessary and all changes are possible; so it is never a typical machine.

**3 - Examples**

The following are two alternative examples from the field of textile machinery, one for exhibiting only and the other for running.

**The Original Jacquard loom**

Musée du Conservatoire National des Arts et Métiers, Paris, France. A well-known scale model (1/2 to 1/3) that we think was made by a joiner working under Jacquard himself, and that he presented to the French state. This historic loom underwent at least 4 or 5 changes, each time losing some sense. Except for the first restoration report (dated 1852), nothing was written about the other changes and it was impossible to restore the loom to its original state.

We decided to restore it to its condition in the oldest known photographs (1907 catalogue). Some parts were already lost in 1907 and it was impossible to weave with the loom. We didn't reinvent these parts. The choice was " Only for exhibiting".

The probably original "necking cords" (small linen ropes that control the threads crossing) were in poor condition, so we replaced them with new linen cords. These cords are operating parts of the loom and it was therefore important to keep the same linen material. For the warp threads, which don't form part of the machine, polyester was used instead of the original silk because it is more stable to light and lasts longer. The difference is not apparent through a glass case.

**The punch machine**

Manufacture des Flandres, Roubaix, France. This kind of machine was used to punch jacquard cards between 1850 and 1975. Only about 250 examples were built in the world; maybe ten of them are left.

The challenge was to conserve the knowledge of the "reading" operation in the textile industry, using the machine to punch cards, or to explain how it worked during the public demonstrations. The restoration choice was "for using as it was in the past".

As the machine was too high (6,5 m) for the exhibition space, we reduced it to 5,8 m. All the traditional linen ropes were changed with new polyamide ropes. As the complex arrangement of these ropes contains all the information about the punch machine, the new ropes were installed as the old ones. A more efficient guard was designed and made from traditional iron rails.

**4 - Conclusions**

The conservation of a machine is in relation to the human memory. There is no sense in conserving and exhibiting a machine if nobody knows how it worked. So the restorer must not forget that his intervention must remain legible and logical over one or two centuries.

# Worldwide

**BRAZIL**

## Industrial heritage in the hinterland of Sao Paulo State, Brazil

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The existence of rivers with waterfalls, such as the Tietê River that crosses the whole state of S.Paulo, was a determining factor to the construction of several manufacturing enterprises in the second half of XIX century.

At that moment, the state economy was based upon coffee farming for export, on slave manpower, and on a policy of transferring this work from slaves to European immigrants, mainly Italians. In this context, cotton was introduced the years 1860 into the Itu region, traditionally bound to the sugar cane culture.

The importance of cotton farming to the region relates to the provision of raw material to the pioneer plants, for which the cotton production contributed, providing opportunities of technical-commercial development. The presence of steam and hydraulic industrial machinery placed the region in the most advanced technological context in the end of XIX century.

The geographical setting was another determining factor for the concentration of textile manufacturing plants in this area. The town of Salto, close to Itu, and 120 km. from the capital of S.Paulo State, is located in a transitional zone from the Atlantic Plateau to the Peripherical Depression of the sedimentary Paraná basin and, on an area belt called the " Fall Zone" .

Here the Tiete River has one of its greatest waterfalls, which caused construction of the first industrial building to be started in 1873, the Fabrica Galvão. This enterprise brought to the region one technological innovation, the hydraulic turbine. The machinery was bought from Platt Brothers & Co. Limited, from Oldhan, England, from where the building plans also probably came from, being adapted to the local constructive resources, granite stone masonry.

Aspects of this building, which shows similarities in regard to English models, are found in descriptions published in XIX century newspaper articles. By this means, it is possible to know that the square construction was of two stories, with elevations 35,2 meters long.

The first level, where the hydraulic turbine was installed, had its foundation on a large granite rock close to the river, with granite columns and arches supporting the upper floor.

All the machinery was mounted on this second level. Its walls were constructed with granite blocks and mortar, 28 ogee windows illuminated the large room. Wooden colonnades supported the roof.

In 1880, downstream of this building, the textile manufacturing plant "Barros Junior" was installed. This plant, still existing after several modifications, was built using bricks produced by the owners; the building has two floors. The external stonework was made of granite blocks, making the construction more impermeable.

In 1904, those two industries were combined, giving origin to the Fábrica de Tecidos Ítalo – Americana, owned by Sociétá per l´Éxportazione e per l´Industria Ítalo-Americana, with headquarters in Milan, Italy. In 1919, through a new joint venture, it was named Brasital S/A.

During this new management, the Galvão plant was demolished, in its place new buildings to house the looms were built, now equipped with electrically-powered machinery .The ancient building gave place to another one, in the British-Manchester style, according to projects prepared in Italy, the same style being also introduced in the Fábrica Barros Júnior, with details added to the roof finishing.

The style is characterized by red brick masonry in the façade, with no revetment and by stonework in granite, worked by Italian and Portuguese masons. This pattern was also adopted in other buildings of the town, such as the nursery, hydraulic power plant, worker's houses as well as other industrial buildings property of the firm, the Salto Paper Industry (Fábrica de Papel de Salto), textile warehouses in S.Paulo city and textile industry in S.Roque – S.P.

Ítalo Americana/Brasital considerably marked the history of Salto – S.P., in regard to its social framework. After the industry's establishment, the town passed to have a significant population of Italian origin, after the contracting of industrial masters and foremen, teachers and school directors, and medical doctors. Italian families, coming from the coffee farms, found the enterprise an alternative possible workplace in town, and became industrial workers.

Nowadays, all the buildings have been adapted as teaching facilities, and follow on as examples of the city and the State historical heritage, representing a period of the Brazilian industrialization.

# Worldwide

**SPAIN**

## A new Portland cement works museum

The technology of manufacturing Portland cement is just over a hundred years old. The horizontal rotating kiln, in which ground limestone is converted into clinker, was perfected in the United States at the end of the nineteenth century. Today the enormous children of these first kilns, now over 3m in diameter and several hundreds of meters long, are the biggest pieces of moving machinery in the world.

The first examples were imported to Spain by the Allis Chalmers company of Milwaukee, USA, in 1901, and installed in a highly unusual building that stepped up the mountainside so that the raw material could descend along the process chain under gravity, from the quarry to the waiting trains that carried away the cement-filled jute sacks. Unlike most subsequent cement works, the whole works was enclosed in a complex of remarkable vaulted buildings, possibly because the snowfall and freezing winter temperatures would have made the place unbearable otherwise. The kilns and the various crushers and mills were initially turned by a system of 13 Pelton turbines, and later by steam.

The old Clot del Moro factory, abandoned since the energy crisis of the 1970s and now a spectacular industrial ruin, has been passed by its owner, the French Lafarge group, to the Museu de la Ciència i de la Tècnica de Catalunya to interpret as a museum. It is believed to be one of only three cement works museums, the others being in America and Germany, and the only one which interprets contemporary cement-making technology.

# Worldwide

**EUROPE**

## Legislation = Durability? Protecting the industrial heritage: is it enough in order to make sure its conservation?

Most countries who went through industrialisation are endowed today, under one form or the other, with laws and regulations which take into account the survey and the protection of an increasing number of sites which are part of industrial heritage. Such an evolution bears testimony to the rising, up to the states or to the regions level, of an awareness of the cultural values which are conveyed by that kind of patrimony.

However, industrial heritage remains fragile beyond the moment when it has been registered or even classified as a landmark, since its conservation in the long term cannot be decreed, and because a juridical mark of esteem or an active sympathy from some sectors in the public opinion are not able by themselves to mobilise the energies, money and ideas which are potentially indispensable to activating re-use or re-insertion projects for industrial heritage. Proof has it that, today, protection files are often expected, for the purpose of receiving an agreement, to mention the existence of preliminary projects of that kind.

The thematic series which have been formerly proposed in that forum gave birth to the development of many thoughts on the particular frailty of big size individuals within that kind of heritage, and brought to the surface a whole range of proposals, justifications and narratives. This time, instead, the question is posed in more general terms: it intends to balance a system of criteria with a variety of possibilities and with the definition of conditions, either single or combined ones, which alone, in fact, allow to have our society assume and materialise, in its long term way of working, the premise which has been embodied in the law. If we want to go ahead along the path to the integration of industrial heritage into our culture, it is urgent for responsible authorities of all kind as well as for ordinary citizens to express their thoughts and to become active in that field.

Please, bring us examples of successful consolidations, of reasonable hypotheses, or – on the contrary – of precarious conservation experiences, underscoring at the same time the conjunctures, the positive combinations of forces, which as a rule are guarantees of success – or mentioning any weaknesses, in your opinion, in the legislation for the protection of industrial heritage.

The current theme will be launched starting from a specific case, that of the industrial heritage within the boundaries of the Communauté Urbaine du Creusot-Montceau (France, Burgundy): this is a topic submitted to reflection on part of the students in the D.E.S.S. formation entitled Management and valorisation of industrial heritage within the antenna of the University of Burgundy in Le Creusot.

# Books received

Colònies Tèxtils de Catalunya, Rosa Serra, photography by Lluís Casala, Angle Editorial, Passeig de Pere III, 14-16 5é 1ª, 08240 Manresa, Spain ISBN 84-88811-59-4, In Catalan with English translation.

The industrial – predominantly textile – settlements that grew up along the rivers flowing from the Pyrenean mountain through Catalonia, in Spain, are claimed to the be most intense exploitation of the hydraulic power of any rivers in the world. This densely-illustrated book examines their architectural and technical heritage, and the industrialists and workers who inhabited them, and includes a glossary of more than 70.

# Events

## TICCIH conferences

**RUSSIA**

TICCIH XII International Congress: 'The transformation of old industrial centres and the role of industrial heritage.'

10-14 July, 2003 in Moscow, and 14-18 July post-congress tour to NizhnyTagil in the Urals

The next full TICCIH Conference will be an opportunity to see some of the most interesting as well as spectacular industrial heritage sites in the world. Papers are invited on the above theme. The official language will be English, but papers also in French and Russian, with simultaneous translation of plenary sessions. Study visits in Moscow and cultural programme include the Kremlin, the Bolshoi Theatre, and the Moscow river. Post-congress tour of the famous mining and metallurgical sites in the Urals, including a helicopter trip over the 1882 Ust-Borovsky salt works. Details will be sent out in early 2002. Eugene Logunov, Institute of Material Culture, PO Box 65, Ekaterinburg, B-109, Russia 620109, tel: +7 3432 297874 fax: +7 3432 297731 logunov@online.ural.ru

## Other events

**US**

SIA annual conference, Saturday, June 8, 2002 in Brooklyn, NY

Presentations on all topics related to industrial archeology. The meeting coincides with the 150th anniversary of the American Society of Civil Engineers (ASCE), thus providing an excellent opportunity to explore and celebrate the region's outstanding civil engineering achievements. Call for papers: send paper copies before February 1, 2002 to : Mary E. Mc-

Cahon, 332 E. Union St, Burlington, NJ 08016; (215)752-2206; mmccahon@lichtensteinengineers.com

**SPAIN**

Technology, Cultural Interchange and Globalization

29th Symposium of ICOHTEC, The International Committee for the History of Technology

June 24 - 29, 2002, Granada, Spain.

PROGRAM SUBMISSIONS: James C. Williams, Chair, ICOHTEC Program Committee, techjunc@pacbell.net History Department, De Anza College, 21250 Stevens Creek Boulevard, Cupertino CA 95014 USA T: 650-960-8193 www.icohtec.org

**GREAT BRITAIN**

Aia Annual Conference In Edinburgh

6-12 September, 2002, Herriot Watt University, Edinburgh. Advance notice only. See AIA web site for future details. http://www.industrial-archaeology.org.uk

**FRANCE**

World Heritage - Industrial Heritage

19, 20 and 21 September 2002, Saline Royale, France.

See the web site http://patrimoine.saline.free.fr Franck Gautré, Institut Claude-Nicolas Ledoux, Saline Royale, F-25610 Arc-et Senans, tel: +33 3 8154 4536 fax: +33 3 8157 5929, arch.saline@wanadoo.fr