Abstracts
4th International Congress on Construction History
3-7 July 2012
320. Prefabrication

Yvan Delemonety
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Flaîne: Mountain City: The Building of a High Altitude Citadel

The fruit of an exceptional collaboration between an enlightened client [Eric Boissonnas] and an internationally renowned architect [Marcel Breuer], Flaine [1959-1988] is a unique example of the winter sports resort genre. At 1600 m., on a mountainside facing Mont-Blanc, it is emblematic of the triumph of modernity in the France of the 1960s. Known for the excellence of its ski slopes, Flaine has been disparaged for the béton brut of its architecture, which echoes the major housing projects built around the country during the same period. The connection is entirely pertinent, since the ski station was built using the same heavy prefabrication methods used in the building of mass housing. An atypical choice in the history of the winter sports facility, the technique simplified site and project organisation on a scheme of such varied technical achievement and enabled huge façade panels in relief to be developed, which quickly became a Breuer trademark.

Maite Palomares Figueres, Jésica Moreno Puchalt, Veronica Llopis Pulido
Polytechnic University of Valencia, Spain
Architectural Expression in the 60s and the Prefabrication of Formwork

In the 1960s, the technology of reinforced concrete provided highly expressive architectural solutions linked mainly to laminated structures. However, although less common, we can also cite several particular cases of framework structures where the expressiveness stems from both the material chosen and the ingenious design of the structural solution. This is so in the case of Santa María del Mar church in Játiva [Spain], built in 1963 and undertaken by the GO.DB. Arquitectes, with the roofing being reminiscent of Le Corbusier’s Notre Dame du Haut chapel.

Formworks moulded the shape and lent expressiveness to the new material, a detailed study of their geometries and individual pieces being required, which involved a painstakingly precise constructive system. In Játiva, moreover, the formwork system required a particular pre-fabrication. The large formwork pieces, shaped with three-dimensional curved boards and the positioning of the reinforcement for the enclosing pillars were made entirely in a workshop and were then erected on site.

Sonja Hnilica, Markus Jager
TU Dortmund, Germany
Competing Building Systems: Post-War University Architecture in the Ruhr Area

Today, three universities exist in the Ruhr area with about 90,000 enrolled students and all were founded and built between 1960 and 1985. Designed as universities having undergone reformation, manifesting equal opportunities to study for all young people, extraordinary efforts were necessary to implement an ambitious building program. An enormous construction volume, planned in a very short span of time, was built at considerably low costs. The university buildings in Bochum, Dortmund, Duisburg and Essen are perfect examples for retracing the rise and fall of building systems types. Whereas in Bochum an international competition resulted in building a monumental prefabricated megastructure, other universities had to be content with a much more modest architecture. Different building systems were tested, culminating in the development of the building system titled “NRW 75.” This system was used for planning and building the TU Dortmund and The University of Essen. In the End, the newly developed system was discontinued in Duisburg before it was completed.

Friday 6 July, 15:00-16:30 VERSAILLES SITE, Room E223

Sessions

Friday 6 July, 16:50-18:20 VERSAILLES SITE
301. Construction History, Sources & Methods 2
307. Training & Education 2, Architects
312. Labor Market
313. Ownership of Property
316. Interior Environment, Lighting
319. Saving & Recovery Energy
322. Infrastructure & Public Works

Keynote Lecture

Friday 6 July, 18:40-19:40 VERSAILLES SITE [AMPHI LA FORGE]

Robin Middleton
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Jean Rondelet’s Pioneering Attempt to Write a History of Construction, 1801-02

From Vitruvius on, architectural treatises have included something of the history of construction, but the first history of construction as such seems to be an essay [92 pages] submitted by Jean Rondelet in a competition promoted by the Institut national des sciences et des arts in 1799. He was awarded the prize three years later, but the essay was not to be published. It is not, in fact, altogether satisfactory as a founding history of construction. There are tediums. Rondelet deals with his history as a sequence of accounts of building techniques: timber construction, with much on the pitch of roofs; stone construction, the emphasis here on the moving of large blocks of stone; mortars, with the emphasis on Roman walling; sun-baked bricks, with an aside on pise; then fired bricks; leading to a discussion of domes in Ravenna and Venice, on to Gothic construction, and thus to some remarks on stereotomy (which he considered exhibitionist). Other than a list of names, there is nothing on the major advances in the calculation of structures made in the preceding hundred years, nothing on the revolution in bridge building in France in the eighteenth century, or even on the iron-reinforcement of buildings, with which Rondelet was himself so deeply involved. His omissions are, indeed, more interesting than the subjects he covers, and, for that reason, are sketched in to provide a proper context for a consideration of his performance.
The Significance of Building Labour to the Production of the Built Environment

The paper identifies key characteristics of the development of building labour in Britain at different historical stages, pointing also to the sharp disparities between a socially regulated and unregulated wage, collective versus individualised employment relations, and comprehensive versus trade-based training. It focuses on the post Second World War period, showing how within each stage different labour processes co-exist. This is evident in the final product, as shown in the building of key construction projects – including the Barbican, Stevenage New Town and Sizewell. What stands out is the continued trade-based character of the construction labour process in Britain, conceptualised in relation to a range of tasks in the workplace and to work as a specific output of labour rather than the capabilities or qualifications of the person. The paper draws on a literature review and documentary archives, as well as interviews with building workers engaged on these projects.

The Horizontal Property Regime in 1960s Porto

The paper identifies key characteristics of the development in Porto, Portugal. The horizontal property regime was established very late in Portugal [1955], but had important repercussions upon urbanization and developing its architecture. Through knowing the dates of commercial periods [637-1917], the roles of the urban land register itself developed as a result of the need to individualise ownership in accordance with the site on which the property stood. The law also had important implications for urban design. The aim of this paper is to analyse the urbanization and building mechanisms that developed in the wake of this specific legal provision; for, although the new law did not directly regulate building activity, it nevertheless had important repercussions upon construction dynamics in the city of Porto. The analysis is based on a particular case study, the axis of Boavista in Porto, an urban alignment around seven km long that drove the city’s westward expansion during the 19th and 20th centuries.

The Role of the Islamic Pious Foundations [Waqf] in Building the Old City of Jerusalem during the Islamic Periods [637-1917]

This paper focuses on labour relations in construction as the dynamic force of historical change. After the collapse of both the socialist and capitalist systems, the present economic crisis and political uprisings have alerted us to rethink our categories of analysis. In the industrialised countries of the 20th century, labour relations were divided between Capitalism and Socialism. After World War II, this division took the form of the iron curtain between these camps of the Cold War. For the span of 40 years, this curtain split Germany and its capital into two separate states. Nowhere can the two modes of production under socialist and capitalist regimes be better compared than in this country, and construction provides visual testimony of this crucial period of history. In hindsight, we observe not only the contrast between these contradictory modes but also what they contributed to the common global development.