REINFORCED CONCRETE PROTOTYPES FOR INDUSTRY IN ITALY

THE BAY AS STRUCTURAL DEVICE FOR ARCHITECTURAL EXPRESSIVENESS.

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The relationship between architectural expressiveness and formal structure was the leitmotif of the Italian structuralism in the second post-war two decades.
The design of industrial structures radicalized this relationship because of the production processes nature that imposed to the architect the dimension of standardisation, repetition and economy of means. This approach reduced the distance between architectural form and informal building.
This research aims to show how this condition transforms the idea of design process by some Italian authors, in the restricted field of reinforced-concrete structures for industry. The architectural Form becomes a process that faces with all the aspects of the project: the technological content (cooling, ventilation and water-drainage systems), the economic side, the engineering start up. In this way, the project of industrial structures is an outcome of the components design, constituted by structural elements (pillars, beams, secondary systems of coverage), and controlled by the project of a structural bay, as a device of the design process.
In the field of single-storey frame-structures, many Italians architects proposed, through the design of factory a new Modernist order, based on the relationship between pillars, beams and secondary system of coverage. What are the key distinction of this new order? Certainly, the presence of a great technological content, consisting of enormous cooling, ventilation and water-drainage systems. All cases that I selected for my research the architects tried to give an architectural expressiveness absorbing the technological content in the cavity of structural elements. Hence, the most important feature of this new order is the adoption of a hollow structural form in which all the elements are shaped in a specific way. This aspect defines a specific quality of the industrial prototypes, developed through the professional partnership between the architect and the engineer. The knowledge about this kind of industrial prototypes is useful on one hand to admit these building as an Italian historical heritage that needs to be preserved, on the other hand to understand how it is possible transform these buildings through a new adaptive reuse.