

# **Reinforced concrete + masonry: the mixed structure of the Novocomum by Giuseppe Terragni**

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## **ABSTRACT**

Looking at the work of the avant-gardes, Giuseppe Terragni began an experimentation involving both new language and construction techniques: the Novocomum project (Como, 1928-29) represents his first and famous rationalist architecture. Within one year (January-October 1928), the transition from tradition to innovation, from a brick masonry structure to a reinforced concrete frame takes place. Soon after, in 1929, the project finally develops a third solution: a 'mixed' structure that embodies the expression "Italian modernisms"[1] like many other similar Italian buildings of the same period. The construction of the Novocomum proceeds to the roof terrace protected by the fences of the building site and only at the end (1930) the modern building is revealed to unaware citizens, causing bitter controversy.

The proposed contribution intends to select, within a wider research dedicated to the Novocomum [2], the materials which allow to discover the structural components in order to better understand the construction methods and phases of the building. These aspects haven't been explored in depth in the many previous studies concerning the architecture of Terragni [3,4]. Our investigation made extensive use of the documentation held in numerous public and private archives of Lombardy, continuously compared to the building existing conditions. The paper will focus on documents related to the building site activities that were carefully photographed in the whole process: notes, technical drawings, estimates, reports, calculations, orders, payments, up to the complicated dispute between the contractor company and the architecture firm, also involving Giuseppe's brother, engineer Attilio Terragni. The systematization of the collected data allowed to render the non-linear concatenation between project solutions and execution phases.

The study [5] of the structural features has been reported also through the graphic representation of the construction by a 3D model, by a process of decomposition and re-composition of the components, in order and to understand their relations and the general configuration. A thorough study was made to analyze the construction elements and the relation between reinforced concrete and masonry. For example, the perimeter walls present a 57 centimeters section, made up of one course of four-hole bricks placed to cover the pillars in the outward side. About the parts of masonry between the reinforced concrete pillars, not having reliable data, we developed two hypotheses, according to construction drawings by Griffini [6]: a wall section made by five bricks or by four bricks and an air gap.

The materials collected and systematized include important data related to the inner layout and transformations carried out over time inside the building and on the surface [7]. They constitute a necessary basis both for studies concerning the structural behaviour and for the process of maintenance, planned conservation and enhancement of one of the most relevant architecture of the twentieth century.

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