



POLITECNICO  
DI TORINO

# Honors thesis

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Master of Science in Architecture Construction City

*Abstract*

**Palazzo Affari in Turin**

**Preservation and retrofit of a work by Carlo Mollino**

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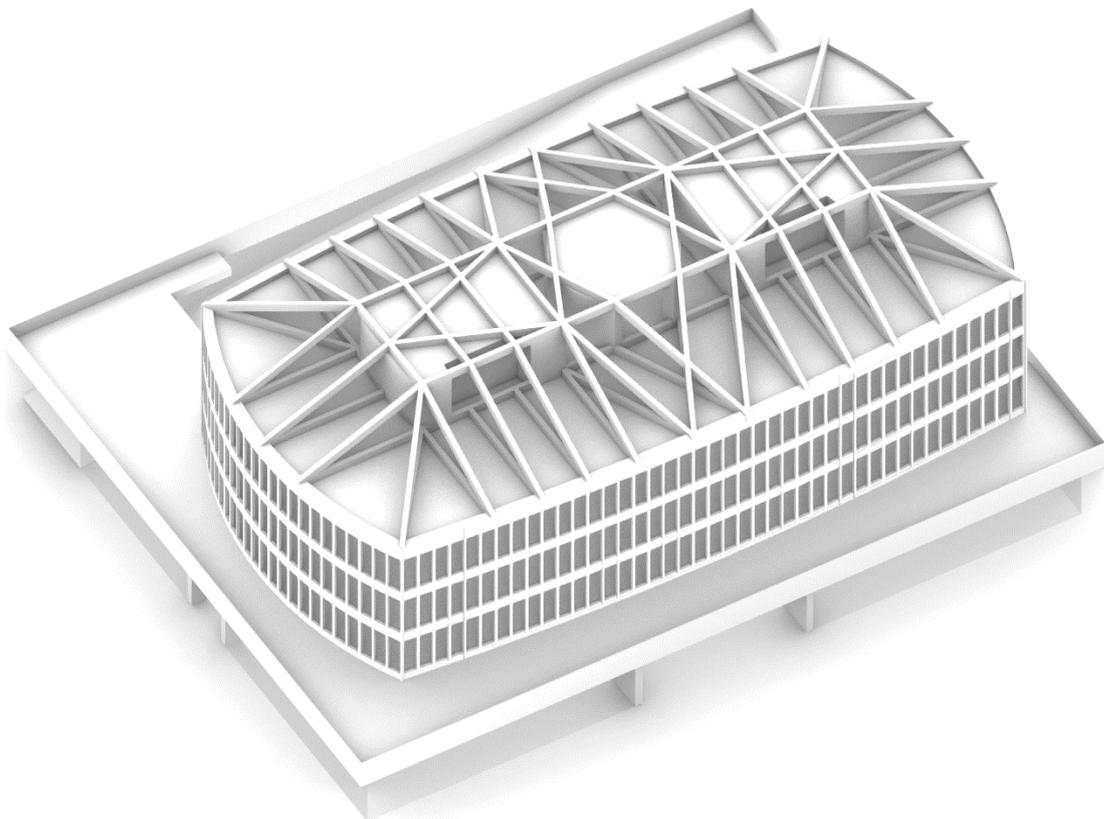
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Preserving instead of replacing means to limit embodied energy consumption but also to pass on to future generation the material witnesses in which architectural and cultural qualities are deposited. In addition, there is the need to adapt the existing buildings to the more recent energy containment standards. Facing these two themes in a combined way means to analyse the architectural detail choices, to relate them to the overall architectural outcome and to exploit technological innovation to identify such a design strategy which allows to reach better performances without affecting the preservation.

The architecture of the 20th century is fragile, even buildings which have been recognised as historically or culturally valuable risk to be radically transformed for the sake of energy retrofiting. These buildings were built before the oil crisis, their envelope is characterized by low energy performances but, since they are relatively recent, often they are not adequately protected. For intervening on these constructions, it is necessary to develop ad hoc solutions, which should represent a reasoned compromise between preservation and retrofit.

This thesis addresses these issues by considering the case study of Palazzo Affari, an office building still in use, conceived by Carlo Mollino together with Carlo Graffi, Alberto Galardi and Antonio Migliasso for the Turin Chamber of Commerce. The competition brief, launched in 1963, requested a palace which could respond to the most modern and progressed needs in the matter of offices organization. The core of the proposal is a free plan, completely clear from any structural encumbrances. This solution is made possible thanks to the avant-garde solution of the suspension technique: the floors are hanging to

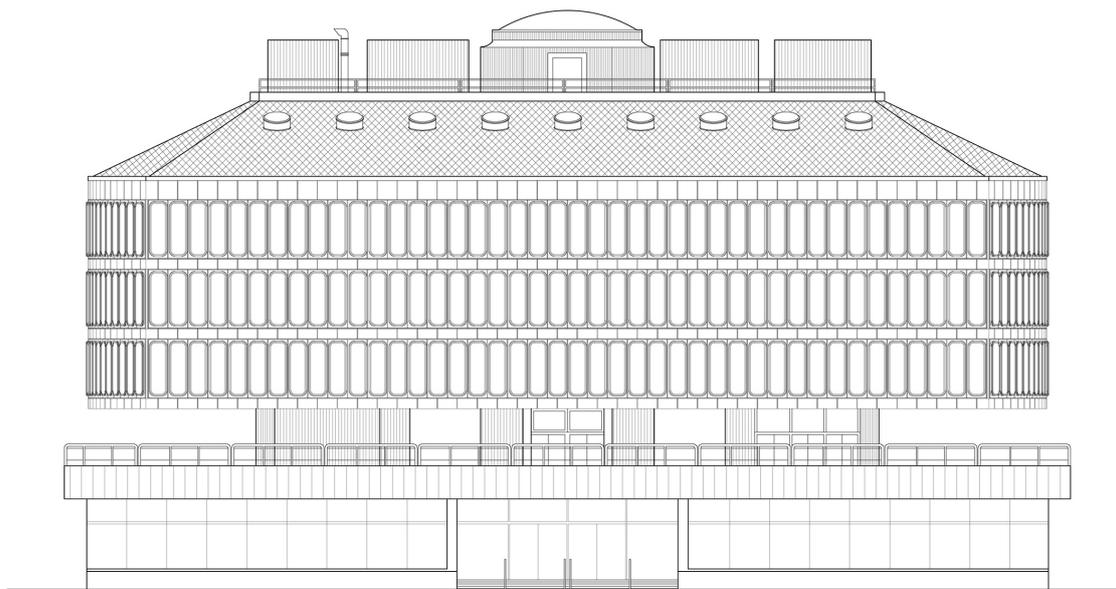


Conceptual scheme of Palazzo Affari structure

perimetral ties, made by prestressed concrete, anchored to cantilevered shelves placed in the roof level and carried by a central concrete core.

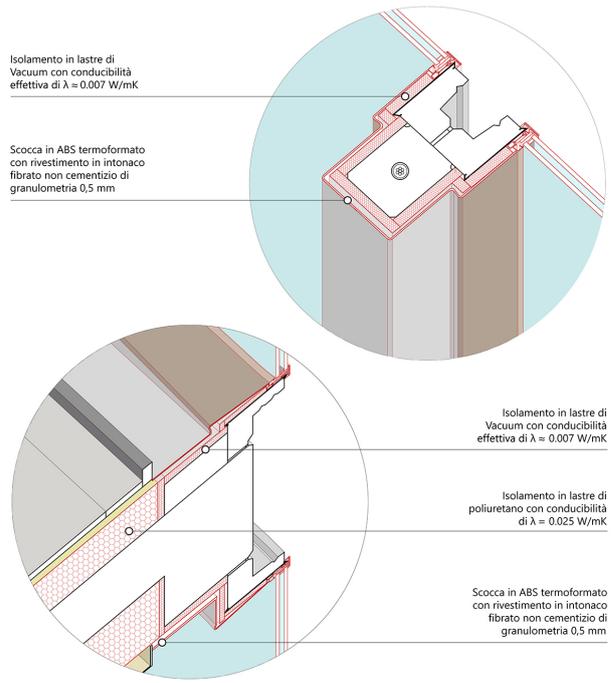
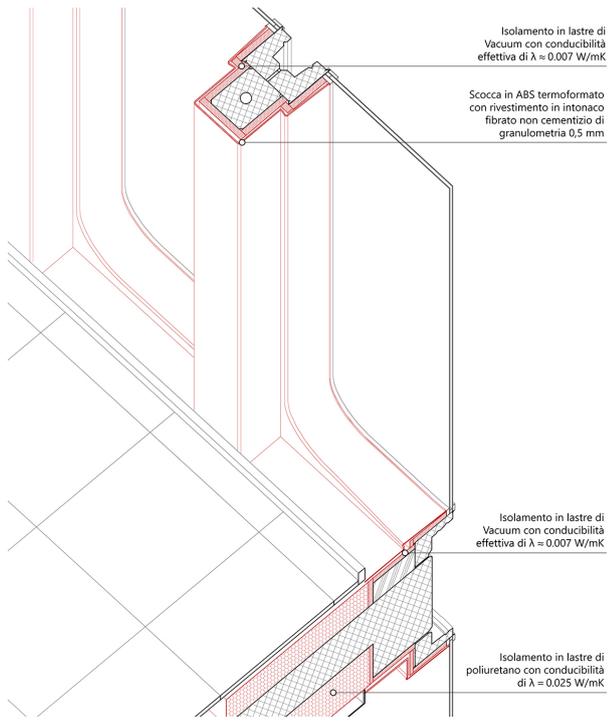
The first part of the thesis presents the work of documentation, which was necessary to get an exhaustive knowledge of the building and to recognize its intrinsic and comparative values. Moreover, the cultural context, the materials, the technologies and the innovations which made possible its conception and realization are deepened. The research is based on the analysis of the archive documents, on bibliography and on interviews to illustrious connoisseurs of the project.

The second part of the thesis addresses the analysis of the state of the art from the architectural and thermal point of view, in order to propose an intervention which focuses on the façades. The constructive nature of the building raises the issue of the relationship between technology and architecture: technology, considered an expressive mean as well, rapidly evolves and suffers from obsolescence. However, both substitution of the façade panels and the insulation from the outside are excluded. The proposed intervention is balanced with the need of material or iconic preservation of the building.



East elevation of Palazzo Affari

The hypothesis which has been investigated consists, on the one hand, of the replacement of the windows, respecting the chromaticity of the glass and the thinness of the frame, on the other hand of the insulation of the opaque parts of the inner façade using high-performance materials, which allow to work with reduced thicknesses without distorting the original proportions.



Proposed design solution

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