

Atelier Architecture and Structural Forms – A.Y. 2023-24

Design Architectural Envelops and Complex Forms

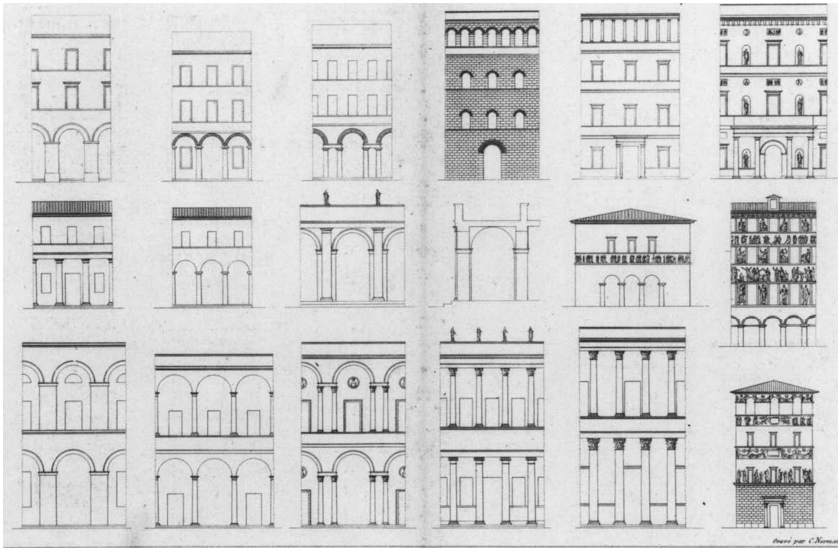
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Structural Engineering: Prof. L. Raffaele (6CFU)

Collaborators:
Arch. M. Migliaccio (Arch. Design)
Ing. F. Venuti (Structural Eng.)



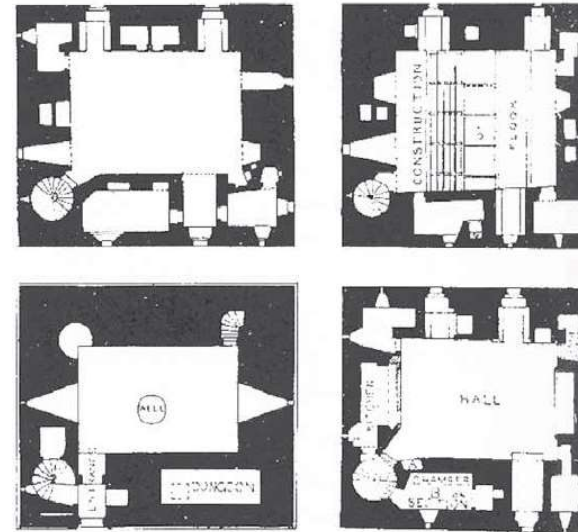
The Topic. Designing the building's envelope

The façade as a typological element



J. N. L. Durand, Précis des Leçons d'Architecture

The wall as a distribution device



L. Kahn, Studies on the British Castles floor plans

The wall as a space container



"Toulu" villages of the Hakka communities, Fujian, China

The façade as an urban scenery



R. Piano, St. Giles block, London

The Topic. Designing the building's envelope

The façade shall withstand external/internal loads



P. Rice, La Villette, Paris, France

The façade guarantees air and water tightness



R. Piano, Tribunal De Grande Instance, Paris, France

The façade shall assure thermal and acoustic



R. Piano, Torre Intesa San Paolo, Turin, Italy

The façade protects the building from the environment



Dubai, United Arab Emirates

Aim of the course and Case study

The new Competence Center in the former FIAT factories of Mirafiori, Torino

Aim of the course

The Atelier is aimed at providing the students with the technical knowledge and the practical skills to manage a **complex design process, mainly focused on building envelope design.**

In contemporary architecture the building envelopes are one of the most relevant common grounds between the engineering and architectural expertise, gathering morphological, technological and structural issues. Since they are meant to be the outer "skin" of the building, they must combine a good energy efficiency performance with the structural stability, and they are, at the same time, one of the most influencing elements in the construction of the architectural language of the building.

Design exercise

In the design experience **the students will be asked to design a proposal for the new Competence Center of the Competence Industry Manufacturing 4.0 company, focusing on its façade.** The new Competence Center is supposed to be placed in a portion of the former Mirafiori factory in Torino, next to the Politecnico's Design Center. The new Competence Center will occupy a portion of the former industrial building, corresponding to the three taller spans.

