

ETH Zürich, HIB E 11  
Stefano-Francini-Platz 1  
8093 Zurich

[www.schwartz.ethz.ch](http://www.schwartz.ethz.ch)

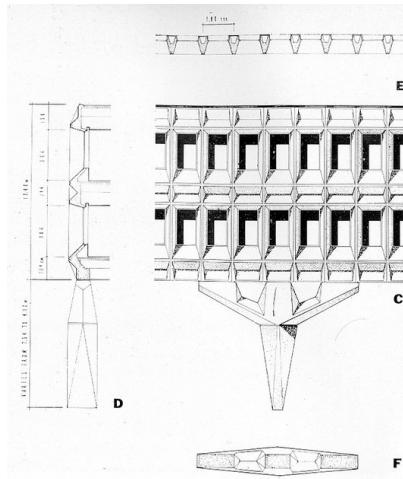
### Focus Work at the Chair of Structural Design (Prof. Dr. Joseph Schwartz) – Proposed Topic

#### *Marcel Breuer's Precast Façade Components: a multi-disciplinary design approach*

##### Abstract

The design of building envelopes requires the skills and expertise of many different professionals. Although sequential design approaches offer a pragmatic answer to the solution of such a complex design problem, they also foster the idea that the overall process is just a simple sum of the single parts. Especially in the early design stage, the ability to integrate different technical and architectural aspects of the design is a crucial factor that ultimately allows for a more conscious and responsible use of the available resources. The design of building envelopes is an exemplary case where aspects belonging to diverse fields – architecture, structural design, building physics, and construction technology – can be effectively reconciled.

The goal of this focus work is to analyze and to compare prominent examples of building envelopes and façade systems designed according to the holistic design principles described above. The work of the modernist architect Marcel Breuer represents the starting point for this investigation. With his modular façade components, he advocated a multi-disciplinary use of precast concrete elements for architectural, structural, and sun shading applications. After the definition of a set of appropriate metrics, selected examples of facade modules designed by Breuer will be analyzed in order to assess their performance as a structural element as well as a protection against external agents (i.e. sun). The work can either focus on this systematic comparison of diverse historical examples or further develop towards a design exercise of a new modular façade system. Such system will be essentially based on the holistic design principles investigated in the first part of the work.



Drawings for the façade modules of the IBM Center, Marcel Breuer, 1965

##### Keywords

precast façade, modular façade, Marcel Breuer, holistic design, reverse engineering

## References

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## Contact Person

Federico Bertagna ([bertagna@arch.ethz.ch](mailto:bertagna@arch.ethz.ch))