

How to gain from loss - Heinz Isler's Haba project and its testing under critical load

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Abstract

The paper focuses on the relation between Isler's building for the Haba Company in Uster (1972) and further industrial pneumatic-form shell structures that the engineer realized, in order to understand how the monitored destruction of this building led to the improvement of the overall typology. When the structure was torn down in 1980, Isler carried out full-scale tests on the built structure [1], adapting – even though with different evaluation criteria – the methodology to the experiments he usually conducted on small-scale physical models. Isler constantly not only used models to conduct a variety of tests in the design process, but also measured the built shells in order to better understand their long-term behavior [2]. Haba gave him the unique possibility to test a built structure under critical load. Out of that, he gained further knowledge about the structural behavior of his shells which most probably influenced his later projects.

The study is based on materials of the Isler archive of ETH Zurich. It considers the results of the loading test of the Haba shell, which was jointly conducted by the Swiss Research Institute EMPA and ETH Zurich, and explores what impact the test results had on the industrial shells that Isler realized afterwards. The experimental approach throughout the entire lifecycle of the building helped Isler to widen the knowledge on the structural behavior of his shells and thus to improve their design. The monitored destruction of one building thus secured an improvement in the design and performance of the next shells to come, and helped their preservation in good conditions, unlike other projects [3].

The changed perspective allows for more profound insights into Isler's methodology, establishing a permanent dialogue between the designer and his small-scale and full-scale models.

References

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