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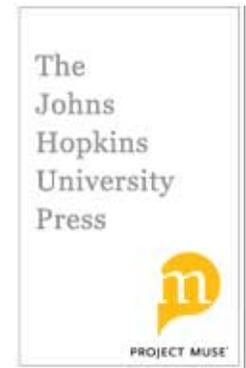
Tower and Office: From Modernist Theory to Contemporary  
Practice (review)

Robert J. Dermody

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(Review)

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stance, Ludwig von Tetmajer and François Schüle, influenced the development of Swiss codes as much as did Lardy. The third, Mirko Ros, supported Maillart's experiments as adamantly as Ritter did. Together with Werner Jegher, editor of the *Schweizerische Bauzeitung*, he aggressively kept Alfred Rohn's and Max Ritter's opposition at bay.

Others contributed innovative structures, too, such as Alexandre Sarasin, another bridge-builder with an architect brother, or Alfred Nötzli, a colleague of Amman's in the United States whose widow became the second Mrs. Ammann. Nötzli's membrane dams resist forces through form rather than mass, a characteristic dear to Maillart's heart. Then there is Richard Coray's elegantly economical centering that made Maillart's bridges possible. His grandsons continued to build Menn's centering. Did Coray's designs influence Isler's thoughts on formwork? Designer-builders like Eduard Züblin or Samuel de Mollins worked along lines similar to Maillart's, and with avowedly similar goals. How did their work foster this new thinking?

Billington mentions the relationship between craft and design in Switzerland, and touches on the contributions of Florian Prader and Eugen Losinger to the development of Menn's engineer father. Prader also built many of Maillart's bridges. These remain unsung, but they too contributed to innovative form in Swiss engineering. Perhaps, if one were to include them—and I do not advocate a Braudelian approach, but rather an inclusive one—the six men discussed in this book might shed their Olympian loneliness and appear more accessibly as highly gifted professionals working within an unusual cultural context.

Billington's book develops the relationship between education and design, and the way he couples lecture notes with interviews can serve as a model. Although his approach might not explain invention, it highlights education and mentoring as contributing factors and stimulates us to discover the outlines of an admirable school of thought in engineering design.

TOM F. PETERS

Dr. Peters is director of the Building and Architectural Technology Institute and professor of architecture and history at Lehigh University in Bethlehem, Pennsylvania. He recently published an annotated bibliography of the French science popularizer Louis Figuier and is completing a historical novel on the early Chicago skyscraper.

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**Tower and Office: From Modernist Theory to Contemporary Practice.**

By Iñaki Ábalos and Juan Herreros. Cambridge, Mass.: MIT Press, 2003.  
Pp. x+295. \$45.

*Tower and Office* is an ambitious book. Like the high-rise buildings it investigates, this newly revised (and first American) edition strives to accommodate the analysis of many interdependent milieus of building design and technology. It successfully combines thorough critiques of the evolution of

the design disciplines required to create tall buildings. Topics covered include structure, enclosure, mechanical systems, and spatial planning. The authors, Iñaki Ábalos and Juan Herreros, are Spanish architects who bring a critical international perspective to their study of a quintessentially American building type. Through extensive analysis of important buildings of the modern movement, they clearly trace and explain the developments, both technological and social, that made the high-rise office building possible. The book is organized into three sections: an analysis of early high-rises, contemporary technological developments, and the typological and urban evolution of current tall buildings.

In the first section, Ábalos and Herreros critically review the modern movement's contributions to the architectural development of high-rise buildings. Le Corbusier is their prime focus, but Mies van der Rohe is also cited often, as would be expected. It seems that most early building proposals were still heavily dependent on overall shape and form, perhaps because designers concentrated on how the high-rise building related to the modern city and to the idea of the building as a city itself. Indeed, the subtitles in chapter 1 bear this out; all of them refer to Corbusian skyscrapers by their form: cruciform, cartesian, or lozenge shaped. Yet to build taller, Corbusier and other designers realized the need for technology to play a greater role in architectural design.

Ábalos and Herreros next investigate the impact of evolving building technologies on high-rise design. Their thorough analysis of the technological evolutions that allowed designers to propose taller and ultimately more efficient buildings is the strongest part of the book, despite some unnecessarily difficult language. They examine the role of structure, enclosure, and mechanical systems, clearly noting their interdependence. They also describe how designers such as Fazlur Kahn and Bruce Graham at Skidmore, Owings, and Merrill pioneered designs wherein structural behavior and form were truly integrated, to great architectural benefit. Equally important to structural design, however, was the ability to analyze the behavior of taller and taller structures. Since lateral stability of tall buildings is a necessity, it is also a major determinant of form. The development of appropriate enclosure systems was driven by new structural models that had evolved beyond the reticulated frame. The new enclosure systems in turn necessitated the design of improved mechanical systems. By now the reader should have gained an appreciation of the complex and multidisciplinary nature of high-rise building design.

In the third section, Ábalos and Herreros expand their investigation to explore the typological and urban evolution of high-rise buildings. This section ranges from analyses of the evolution of the modern office space (including furniture) to the planning of mixed-use skyscrapers. The authors describe how less tangible issues influence modern office design. Concepts such as separating workers' tasks and the division of labor and

management staffs directly determined how offices were planned. Both improved enclosures and mechanical systems then allowed space planning to expand beyond traditional depths determined by accessibility to natural light and air.

In this elegantly edited and crafted book, readers will find much useful information in addition to the text itself. An index of names and the extensive endnotes are valuable to those for whom this book will inspire further study, and there are sure to be many. Though the diagrams are often too small, the detailed comparative tables summarizing several chapters are very useful.

There are many other books that focus on some of the topics presented here. The strength of this book lies in the breadth and depth of the analysis. After all, the development of the modern high-rise building is dependent on careful integration of mutually dependent systems. All buildings need structure, enclosure, and mechanical systems, but high-rises demand truly integrated designs in order to be successful, or even feasible.

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### **Raymond Loewy: Designs for a Consumer Culture.**

By Glenn Porter. Wilmington, Del.: Hagley Museum and Library, 2003.  
Pp. 172. \$29.95

Raymond Loewy is an icon. Born in 1893, he left his native France after World War I to become one of the leading figures of American industrial design in the twentieth century. Among his best-known works are the Coldspot refrigerator for Sears Roebuck and streamlined locomotives for the Pennsylvania Railroad. Surprisingly, Loewy and his work have not attracted much scholarly attention. While he is mentioned in almost every design history, only a few monographs focus on him. This makes *Raymond Loewy: Designs for a Consumer Culture* a welcome addition to the literature. The author, Glenn Porter, is the former director of the Hagley Museum and Library and is well known for his work in economic history. His book, the catalog that accompanied an exhibition at the Hagley in 2002–2003, is based on material that has only recently been added to the museum's collection. It would have benefited from a sketch of the scope of these archival sources, which will be accessible for research in early 2005.

Porter describes *Raymond Loewy: Designs for a Consumer Culture* as an "extended interpretative essay with illustrations." It covers, more or less chronologically, Loewy's early years, his breakthrough in the 1930s, and his and his several firms' relationships with various clients and projects in later years. But Porter intended to write neither a biography of the man nor a