

ARLIS/NA Reviews

REVIEW SUBMITTAL FORM

NAME OF REVIEWER: Paul Glassman

TITLE OF BOOK REVIEWED: *Modern Architecture and Climate: Design before Air Conditioning*

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REVIEW (PLEASE FOLLOW FORMAT AND REPLACE ITALICIZED TEXT):

Modern Architecture and Climate: Design Before Air Conditioning

by Daniel A. Barber. Princeton University Press, July 2020. 336 p. ill. ISBN 9780691170039 (h/c), \$60.00.

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Barber (University of Pennsylvania) tackles a challenge often overlooked by architectural historians: how buildings respond to climate (in this case sun and heat), especially those designed by Le Corbusier and his disciples. Before architects adopted mechanical equipment to regulate indoor temperature and humidity, they relied on design features, such as mass of material, to retard heat transfer from exterior to interior; roof projections to reduce solar penetration through windows; and sun-controlling louvers that simultaneously enable cross-ventilation. This last response, called *brise-soleils* by Le Corbusier, who first installed them on the Ministry of Education in tropical Rio de Janeiro in 1936, is the central topic of *Modern Architecture and Climate*.

Although the book centers on Le Corbusier's innovations for cooling interiors, it also looks closely at Frank Lloyd Wright's second Jacobs house from 1948 (the "solar hemicycle"); at Le Corbusier's influence on Oscar Niemeyer's work in Brazil; on *House Beautiful's* Climate Control Project of 1949-1952; and subsequent symbolic and superficial application of the sun screen in American embassies, the best example of which is Edward Durell Stone's United States Chancery in New Delhi.

Barber explores deeper than most by integrating architectural and engineering perspectives, so that his book is heir to three seminal works by engineers: Jeffrey Ellis Aronin's 1953 *Climate and Architecture*; Victor Olgyay's 1963 *Design with Climate*, based on work at the Princeton Architectural Laboratory; and Baruch Givoni's 1969 *Man, Architecture and Climate*, which looked scientifically at the effect of roof construction on indoor temperatures. Barber's book is not simply a technological history, but ultimately also an impassioned lament for our collective carbon footprint as planetary temperatures increase.

Architects, engineers, and students interested in systematic and environmentally friendly approaches to indoor cooling will find inspiration in *Modern Architecture and Climate*. The tone is that of a disquisition, and readers unaccustomed to the dense, almost philosophical, tenor of the academic prose will find Barber's book arduous and in sharp contrast with Lisa Heschong's complementary and more poetic 1979 *Thermal Delight in Architecture*.

With ragged-right columns and extra-wide outside margins, page designs are handsome, and the even-thickness typeface choice is suitably modernist. Most illustrations come from earlier publications by Le Corbusier, the Olgyay brothers, and other sources contemporary with the era explored. Ample period renderings, photographs, and diagrams illustrate the text effectively. Twenty pages of notes, a ten-page bibliography, and a notably detailed index comprise impressive scholarly apparatuses.

In a time of an airborne pandemic, *Modern Architecture and Climate*, with its rigorous examination of open interiors, airflow, and ventilation, will serve well those readers who have the grit to absorb the author's intensive approach and sobering message.