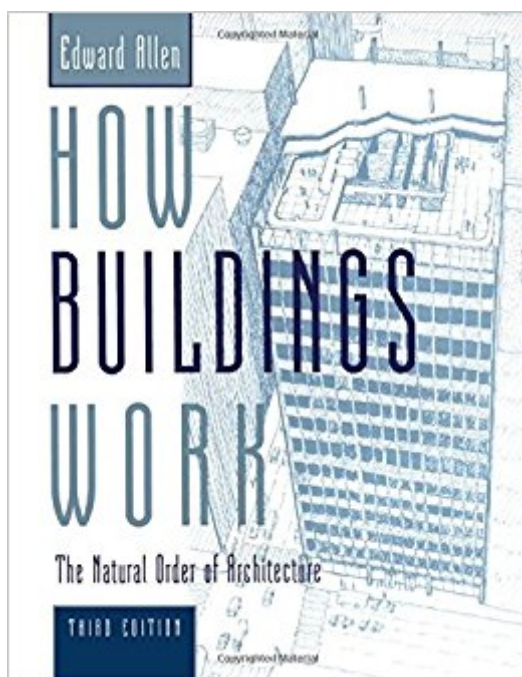


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# How Buildings Work: The Natural Order Of Architecture



## Synopsis

Illustrated with hundreds of illuminating line drawings, this classic guide reveals virtually every secret of a building's function: how it stands up, keeps its occupants safe and comfortable, gets built, grows old, and dies--and why some buildings do this so much better than others. Drawing on things he's learned from the many buildings he himself designed (and in some cases built with his own hands), Edward Allen explains complex phenomena such as the role of the sun in heating buildings and the range of structural devices that are used for support, from trusses and bearing walls to post-tensioned concrete beams and corbeled vaults. He stresses the importance of intelligent design in dealing with such problems as overheating and overcooling, excessive energy use, leaky roofs and windows, fire safety, and noisy interiors. He serves up some surprises: thermal insulation is generally a better investment than solar collectors; board fences are not effective noise barriers; there's one type of window that can be left open during a rainstorm. The new edition emphasizes "green" architecture and eco-conscious design and construction. It features a prologue on sustainable construction, and includes new information on topics such as the collapse of the World Trade Center, sick building syndrome, and EIFS failures and how they could have been prevented. Allen also highlights the array of amazing new building materials now available, such as self-cleaning glass, photovoltaics, transparent ceramics, cloud gel, and super-high-strength concrete and structural fibers. Edward Allen makes it easy for everyone--from armchair architects and sidewalk superintendents to students of architecture and construction--to understand the mysteries and complexities of even the largest building, from how it recycles waste and controls the movement of air, to how it is kept alive and growing.

## Book Information

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## Customer Reviews

With its homespun drawings and offerings of architectural wisdom for lay readers, this book is like a Whole Earth Catalog building course. In this update of his 1980 edition, however, Allen (architecture, Yale) manages to explain with brevity and common sense "how buildings work." In the opening pages, he places the Earth in the solar system and defines our place on the planet. He then offers analyses of the effects of sun, wind, and cold on building design and location. By focusing primarily on housing, Allen lets readers clearly understand everything from lighting, comfort, and quiet to the basics of making a sturdy structure. He offers occasional but well-placed examples of non-Western design as well. And the illustrations, which look like 1970s instructions for macrame, somehow work. Recommended for general audiences. —David Bryant, New Canaan P.L., Conn. Copyright 1995 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

"In clear and lucid prose--accompanied by delightful drawings--Ed Allen explains the intricacies of building performance and construction. This new edition of a classic guide will prove of interest to both students of architecture and lay persons alike." --Witold Rybczynski, University of Pennsylvania Professor of Architecture and author of *The Perfect House* Acclaim for previous editions: "Whether you're an armchair architect or are planning to design and build your own home, this book helps you grasp the basic concepts." --Popular Science "With its homespun drawings and offerings of architectural wisdom for lay readers, this book is like a Whole Earth Catalog building course.... By focusing primarily on housing, Allen lets readers clearly understand everything from lighting, comfort, and quiet to the basics of making a sturdy structure." --Library Journal "Well written, attractively illustrated with line drawings, and handsomely put together." --AIA Journal "With simple explanations and over 300 illustrations, Allen defines the true functions of buildings and gives advice on how to create a structure that will satisfy all your needs." --House Beautiful Building Manual "Explains in clear, non-technical language and by ingenious pictures, what buildings do and how they do it." --What's New in Building

The underlying premise of this book is that architecture is an imitation and application of the principles of nature. To build is not merely to impose our will on nature. It is to cooperate with

nature. Shelter is a natural human need. Building is the art of meeting that need. It does so, according to Allen, by following the example of nature herself and applying her principles. An organic analogy runs through the book. Buildings live and breathe. A building, like a human body, is matter so arranged that it interacts dynamically with its environment and thus perpetuates the arrangement. Buildings, however, are highly dependent on human beings, whom they serve. The parts of buildings, e.g., the roofs, walls, windows and mechanical systems must work together with the other parts in such a way as to "survive" but most importantly to provide optimal human shelter. Buildings that outlive their usefulness "die." My favorite passage from the book is a section entitled "People as the Measure" (pp. 169-171). Drawing on his extensive knowledge of the history of architecture, Allen explains how "people literally became the measure of buildings." For example, the brick... was standardized in medieval times within a range of sizes and weights that could be easily manipulated by the left hand of the mason, leaving the right hand free to operate the trowel." Allen cautions against bulk materials manipulated by machines instead of people: "[T]he finished product will not automatically display the human-scale texture that hand-sized components have and that occupants often subconsciously identify with." This book was very educational for me, a Ph.D. in philosophy who has left academia to help run a construction business. I highly recommend it to new students of architecture or engineering or anyone who has amateur interest in those fields.

I approach this book as someone who likes to walk around old neighborhoods and look at houses. I have collected architectural field guides for years and I can identify most building styles. However, I had little idea how buildings worked. This book was enjoyable because the writing style was simple and straight to the point. One does not need a technical background to get a lot out of the book. Edward Allen's skillful line illustrations also add a great deal. If I could not understand the technical description, the simple illustration helped me with the underlying principle. To give you an example of why this book is helpful to a non-specialist. I have heard of septic systems my entire life. However, I had no idea how they worked. With the help of very clear illustrations and straight forward writing, this mystery has been solved. This book is a great introduction to all those interested in architecture. Highly recommended.

Historians and architects can each suffer a form of myopia which makes their work inaccessible to the layman. Allen avoids being too narrow while simultaneously managing to provide some depth and detail on the function of buildings and their subsystems. The tone is conversational without being breezy; the accompanying illustrations do a fine job of conveying the technical detail without

becoming too - well, technical! The approach is relatively holistic as well, thinking of buildings as a compilation of systems, each explained in its own right, but also a part of the larger whole. A fine introduction to the topic; this might work as a great read before considering having a home custom-built or a remodeling project done; you'd be able to ask the right questions of the contractor and better understand how and why things proceed as they do.

Good information - and great illustrations.

Good basic book!

Older edition was laid out better, but this one is acceptable. Great way to understand the intricacies of your home.

Very informative. Lovely hand-drawn sketches. Covers many useful topics that are important to architects and engineers. A little con though, it is printed on normal paper.

as described

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