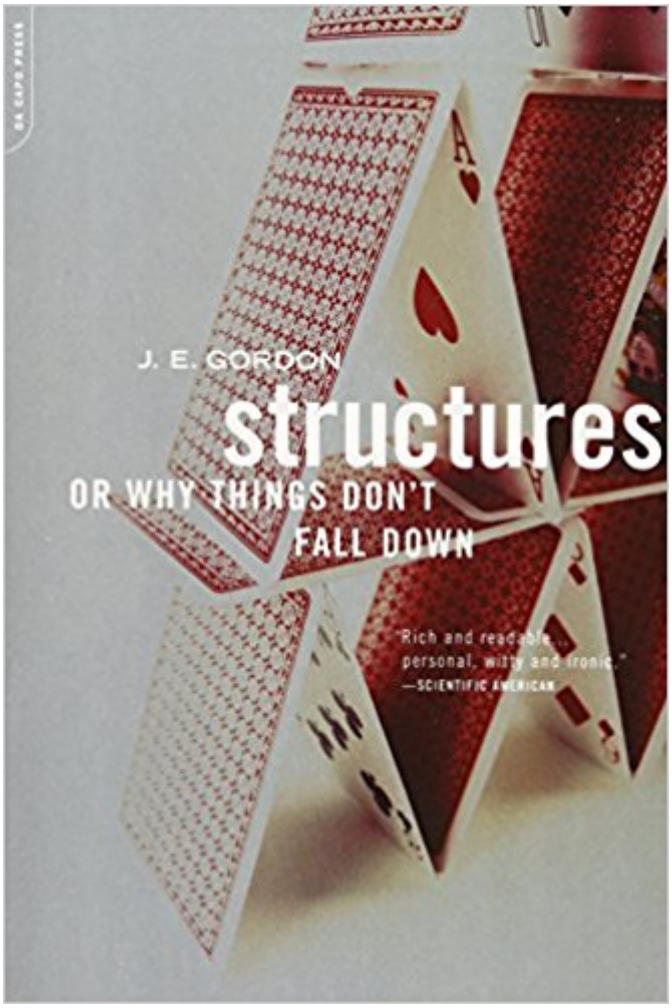
Structures: Or Why Things Don't Fall Down



Synopsis

For anyone who has ever wondered why suspension bridges don’t collapse under eight lanes of traffic, how dams hold back-or give way under-thousands of gallons of water, or what principles guide the design of a skyscraper or a kangaroo, this book will ease your anxiety and answer your questions. J. E. Gordon strips engineering of its confusing technical terms, communicating its founding principles in accessible, witty prose.

Book Information

Paperback: 421 pages

Publisher: Da Capo Press; 1 edition (July 10, 2003)

Language: English

ISBN-10: 0306812835

ISBN-13: 978-0306812835

Product Dimensions: 6 x 1 x 9 inches

Shipping Weight: 1.5 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 stars 92 customer reviews

Best Sellers Rank: #13,672 in Books (See Top 100 in Books) #1 inÂ Books > Engineering & Transportation > Engineering > Reference > Architecture > Methods & Materials #3 inÂ Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural #5 inÂ Books > Textbooks > Engineering > Civil Engineering

Customer Reviews

"It is really, really good if you want a primer on structural design."â •Elon Musk"Rich and readable...personal, witty, and ironic."â •Scientific American"Here we have the conversation in unbuttoned mood of a learned engineer with wide sympathies about his art, its history, its range, and the silly things which happen. It reads easily and has immense charm."â •Architect’s Journal

J. E. Gordon, a professor at the University of Reading, is renowned for his research in plastics, crystals, and new materials.

I thought this would be a bit dry, but it’s geared toward the layperson, and it’s informative and entertaining.

J.E.Gordon has taken a remarkable lifetime worth of experiences, the history of aviation,

industrialization, railways, shipbuilding and classical culture and put them all into a single, entertaining and tantalizing package. After reading this volume you will have a better understanding of structures, history and society. It is thus no surprise that after four decades it is still a compulsory reading in all major engineering courses.Yet he goes beyond the science and history: he gives a human dimension to the machines and structures that uphold our society. Through this lens the way we look at society and its interaction with its inventions is exposed in all its beauty and ugliness.

I picked up this book because I like to read books recommended by people I admire. This book was recommended by Elon Musk.I have no engineering background. Some ideas took a lot of extra searching on the Internet before I could grasp the concept I think the author was teaching. For example, tensile and compressive stress in a bent beam.While there is still a lot I don’t understand, I’m really satisfied because I can look at the world with a new understanding.

I purchased this book for my father since he is very much into books with a wealth of knowledge and also because he is expanding his book collection for his library. He enjoyed reading this book.

I just couldn’t bring myself to read too much of it. Maybe because I have a strong science background, maybe because it is a rather dry reading.

This book is really great. I bought it as a gift for my boyfriend who is interested in engineering, and he loved it. I also looked over the book and found it was written nicely and is a fountain for learning. I learned a lot just from glancing over it! Beautiful cover and a lovely gift for someone who loves reading and loves to learn. I almost want to keep it for myself!

This text was clearly generated using OCR from an older book.The italicized test at the start of each chapter is oddly formatted and some OCR errors crept in.For example in the "spherical pressure vessels" section at loc 1664 it says that the "thickness of the wall or shell is l [ell]" but the formula used is "s = rp / 2t" and there is no l in that formula. The l [ell] should clearly be a t [tee].Less important but more maddening is at location 1810 where when speaking of hawks, we find that "[these] exacting and maddening birds lpse condition very easily." A simply OCR substitution of p for o like this would have been caught by a simply spell check.This book should have been proofread after scanning and before typesetting.As to the content of the book it does a good job of covering the behavior of real-world things you may be familiar with. But while sometimes it does a great job of

explaining what is happening it doesn't do as good a job explaining why at times. The formulas for some forces as just thrown out as obvious, and indeed they would be derivable easily if you have the right background. But they deserve two more sentences of explanation in many cases.And some things are simply hand waived at and ignored. For example when discussing the billowing of bat wings we are told "It is clear there can be in practice be little or no aerodynamic loss as a consequence of this change of shape". Well, I don't know why that is so clear and I won't know by reading this book.I enjoyed it, it's an amusing book to help those who say "I don't need math in the real world" see how much math actually helps you in the real world. But in many cases it isn't going to do more than whet your appetite for explanations of why.

There are two kinds of books engineers need to read--the dry, math-bound classroom textbooks that allow them to believe they can precisely analyze their creations to two decimal places, and the practical, generalist books like this one that explain why all that math does nothing to prevent their creations from breaking into multiple pieces. Tension and compression, stress and strain, and the dreaded torsion are the subjects of this book, but its real accomplishment is explaining the reality of structures--where the mathematically ideal tension of a rope meets the concomitant but difficult-to-quantify need for attachments at both ends. The author does this with a fine English wit and easy-to-follow prose.One of my chief recreational interests is the design and construction of experimental aircraft, and pretty much every topic discussed in this book is pertinent to that activity. In particular, the sections on work of fracture and crack propagation are explained better here than in any design book I've ever read. A must-read in my opinion for anyone involved in structural or mechanical designs.

New Science of Strong Materials or Why You Don’t Fall through the Floor (Princeton Science Library) Don’t Sweat the Small Stuff . . . and It’s All Small Stuff: Simple Ways to Keep the Little Things from Taking Over Your Life (Don’t Sweat the Small Stuff Series) Don’t Know Much About Anything Else: Even More Things You Need to Know but Never Learned About People, Places, Events, and More! (Don’t Know Much About Series) Starting Out with Java: From Control Structures through Data Structures (3rd Edition) Design and Analysis of Composite Structures: With Applications to Aerospace Structures Introduction to Structures (Architect’s Guidebooks to Structures) Anatomy of Orofacial Structures - Enhanced Edition: A Comprehensive Approach, 7e (Anatomy of Orofacial Structures (Brand)) Anatomy of Orofacial Structures, 7e (Anatomy of Orofacial Structures (Brand)) Java Software Structures: Designing and Using Data Structures (4th Edition) That’s Why We Don’t Eat Animals: A Book About Vegans, Vegetarians, and All Living Things Why You Shouldn’t Eat Your Boogers: Gross but True Things You Don’t Want to Know About Your Body Things That Float and Things That Don’t