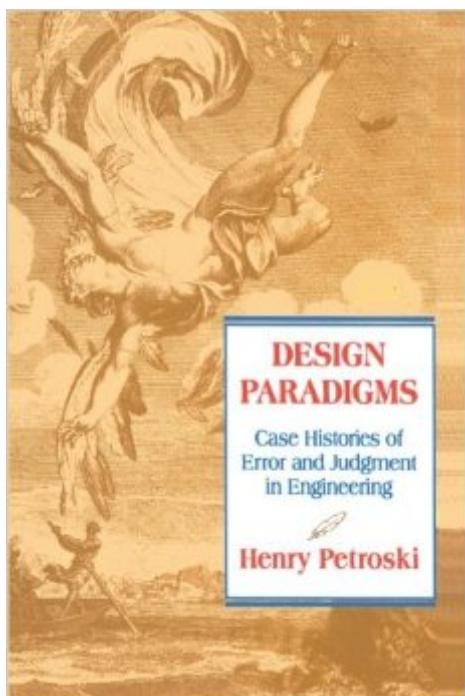


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Design Paradigms: Case Histories Of Error And Judgment In Engineering



Synopsis

From classical temples to twentieth century towers, engineers have learned more about design from failure than from success. The concept of error, according to the author of *Design Paradigms*, is central to the design process. As a way of explaining the enduring aspects of engineering design, Henry Petroski relates stories of some of the greatest engineering successes and failures of all time. These case studies, drawn from a wide range of times and places, from Ancient Greece and Rome to modern America, serve as paradigms of error and judgment in engineering design. By showing how errors were introduced in the design process and how they might be avoided, the book suggests how better quality and reliability might be achieved in designed devices, structures, and systems of all kinds. Clearly written, with striking illustrations, the book will appeal to engineering students, practicing engineers, historians of science and technology, and all those interested in learning about the process of design.

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Customer Reviews

I read this book when it first came out in 1994, and have just finished re-reading it. I can attest that the lessons which emerge from Dr. Petroski's study of structural engineering failures have proved valuable throughout my career, particularly when designing bridges which pushed the envelope. Indeed, any engineer aiming to be innovative in any way needs to temper that laudable ambition with a serious and even somber study of how things have gone wrong in the past, and this book is an excellent vehicle for that purpose. Beyond the study of engineering failure, as a fringe benefit, the book also provides nice discussion of important episodes from the history of structural engineering.

Such historical perspective is usually lacking among engineers both in practice and academia. Yet this is a subject which engineers would ideally be exposed to throughout their careers, not just during the leisurely and retrospective years of retirement. To give a balanced review, allow me to point out a few minor negatives. First, the writing style is sometimes a bit stuffy, and a more plainspoken style would have made the book more appealing. Second, there's a good bit of repetition throughout the book; shortening and focusing the book would have improved it. Third, the case studies mostly involve bridges; this will obviously please bridge engineers, but will reduce appeal for readers seeking a more diverse range of case studies. In sum however, the book is an excellent and valuable contribution from Dr. Petroski, and we should be especially thankful that it exists considering the lack of literature on this important topic, especially at a scholarly level. Highly recommended for bridge engineers and other structural engineers at all stages of their careers - indeed, a "must read."

This is the first Petroski book I've read. I was expecting something different. The cases are all valid design issues and are informative but there are too few. You have to dig through pages of lecture about how important engineering process is to get to the content of the case. It's repeated in each chapter. There is very little technical detail, just verbal explanations of failure types. As an old electronic engineer, I was hoping to learn something about civil engineering from this. It wasn't there. I do think engineering students need something to widen their viewpoints about design thinking. There's a learning curve of failed designs between school and proficiency. If I wrote a design process course, this would be the first 2 weeks reading. Then we'd get into the details. I can't say I'll read this again. But if I ran into an engineering student who didn't understand design process or why mistakes happen, I'd suggest it.

Many technical professionals (and others as well) think technology has the answers and the solutions to many of the issues / failures we have experienced in the past. WRONG!! Read this precious book to understand why. Although somewhat dated (considering we are in 2006) - the basic tenets still apply. Be forewarned - you need to read it with an open mind and a willingness to be brutally honest about your answers when the author poses some questions to you. With such a paradigm, you will find the book full of value in understanding the types of errors we make as humans. Once you recognize these, preventing them can become feasible. But, just realizing that is not enough, you will need to change (which is very hard to do) some habits that the workplace has built into you over time. Enjoy - and be error free...if you can, if you care...

Not exactly what I expected. But interesting

Got this for my engineering 190 course on how errors and judgement's are how problems can be solved in the engineering world.

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