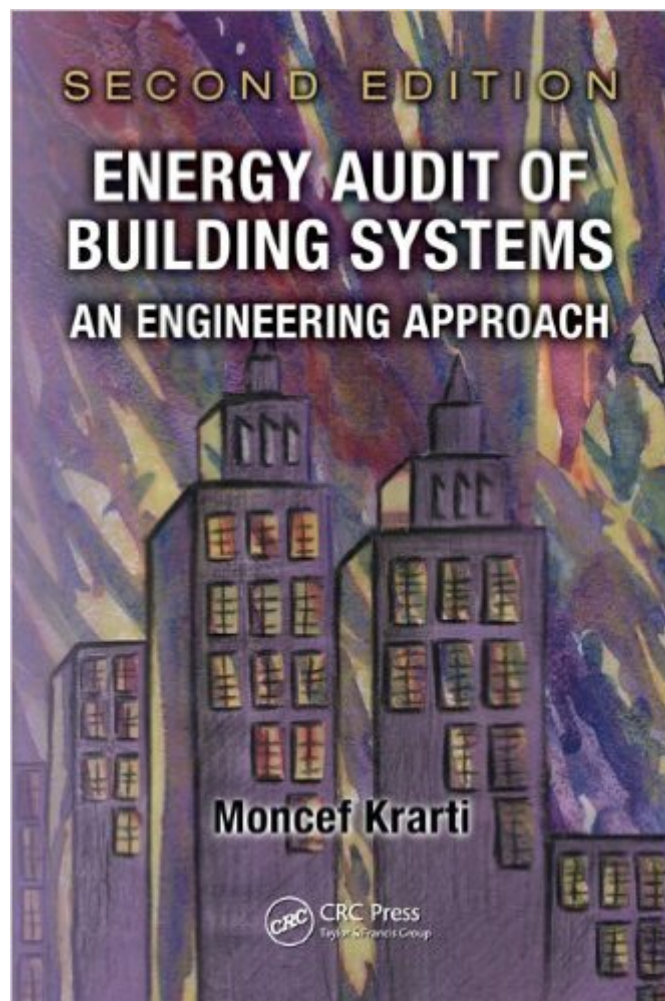


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# Energy Audit Of Building Systems: An Engineering Approach, Second Edition (Mechanical And Aerospace Engineering Series)



## Synopsis

Buildings account for almost half of total primary energy use and related greenhouse emissions worldwide. Although current energy systems are improving, they still fall disappointingly short of meeting acceptable limits for efficiency. Well-trained energy auditors are essential to the success of building energy efficiency programs. *Energy Audit of Building Systems: An Engineering Approach, Second Edition* updates a bestselling guide to helping them improve their craft. This book outlines a systematic, proven strategy to employ analysis methods to assess the effectiveness of a wide range of technologies and techniques that can save energy and reduce operating costs in residential and commercial buildings. Useful to auditors, managers, and students of energy systems, material is organized into 17 self-contained chapters, each detailing a specific building subsystem or energy efficiency technology. Rooted in established engineering principles, this volume:

- Explores state-of-the-art techniques and technologies to reduce energy consumption in buildings
- Lays out innovative energy efficiency technologies and strategies, as well as more established methods, to estimate energy savings from conservation measures
- Provides several calculation examples to outline applications of methods

To help readers execute and optimize real building energy audits, the author presents several case studies of existing detailed energy audit reports. These include results from field testing, building energy simulation, and retrofit analysis of existing buildings, with recommendations based on sound economic analysis. Examining various subsystems, such as lighting, heating, and cooling systems, it provides an overview of basic engineering methods used to verify and measure actual energy savings attributed to energy efficiency projects. The author presents simplified calculation methods to evaluate their effectiveness and ultimately improve on them. Ideal either as a professional reference or a text for continuing education courses, this book fortifies readers'™ understanding of building energy systems, paving the way for future breakthroughs.

## Book Information

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## Customer Reviews

My professor picked this text merely due to the lack of reference in the field of energy auditing, saying that it is better than not having a text to complement the course. As we've moved through several of the chapters, we've found several discrepancies and errors. This makes the learning process a little more challenging and aggravating. Professors seem to find some value in the errors and remind us that at our stage of school, senior year, we're engineers enough to know a mistake when we see one and challenge the information based on what we have already been taught. However, it would be beneficial, when learning a somewhat new subject, to not have to be skeptical of every equation and example, and challenge everything against previous knowledge. I hope that in future editions of this text the mistakes are cleaned up a bit. If and when that happens it will be a much better reference than this edition is currently. Basically, I think publishers need to go back to real copy-editing, rather than just relying on the spell-check to catch errors; there are more than typos to worry about. That seems to be my major concern with most textbooks that I've had issue with.

This book is not user-friendly, due to the very large number of editorial mistakes. For instance, the chapter on electrical systems does not define real, reactive and complex power in the way that is standard among electrical engineers. For a non-electrical engineer, this can be quite confusing. In Chapter 7, "Secondary HVAC Systems Retrofit," the fan law equations are mis-stated, and there are contradictions between the formulas and the verbal descriptions of those formulas. Also, the author needs to spend a bit more effort in providing worked-out examples. For instance, it would have been nice for the author to include a worked-out example of linear regression correlation of building energy use to average outdoor temperature using the PRISM approach. He did do so for correlation of building energy use to heating/cooling degree days, but he did not do so for outdoor temperature as the independent variable. I also believe that some of his worked-out examples contain errors in their solutions. I think I found a couple this last week.

I had to buy this book for a class. I am in my senior year of an engineering degree. CRC publishing did a poor job on editing this book, because it is full of mistakes. The examples problems are not solved the way they are explained in the book. There are hardly any units attached to the numbers. My Professor is even disappointed. Overall, I barely trust the content in the book.

That is a proper study on energy auditing with a very long list of references. I could not take it all in one go. It is a kind of book handy to have and refer to when you facing some issues and looking for specific answer. Overall, it is a great book for the building systems auditor like me.

All books have errors. This book has more than most. You'll spend more time deciphering examples and formulas, questioning if its the concept you don't understand or an error in the text. It makes learning tough.

Numerous Typo's. Circle reff from chapers back to each other, (4-6-16-7-4). And missing steps in most example problems make it difficult to follow.

If you are undergraduate student that study in energy conservation or energy audit, this is one of the complete resource book for you. It has vast information regarding the energy audit/conservation for student to understand the basic concept. You can study this book cover to cover, but surely, the best way is to use the chapter that relevant to your studies.

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