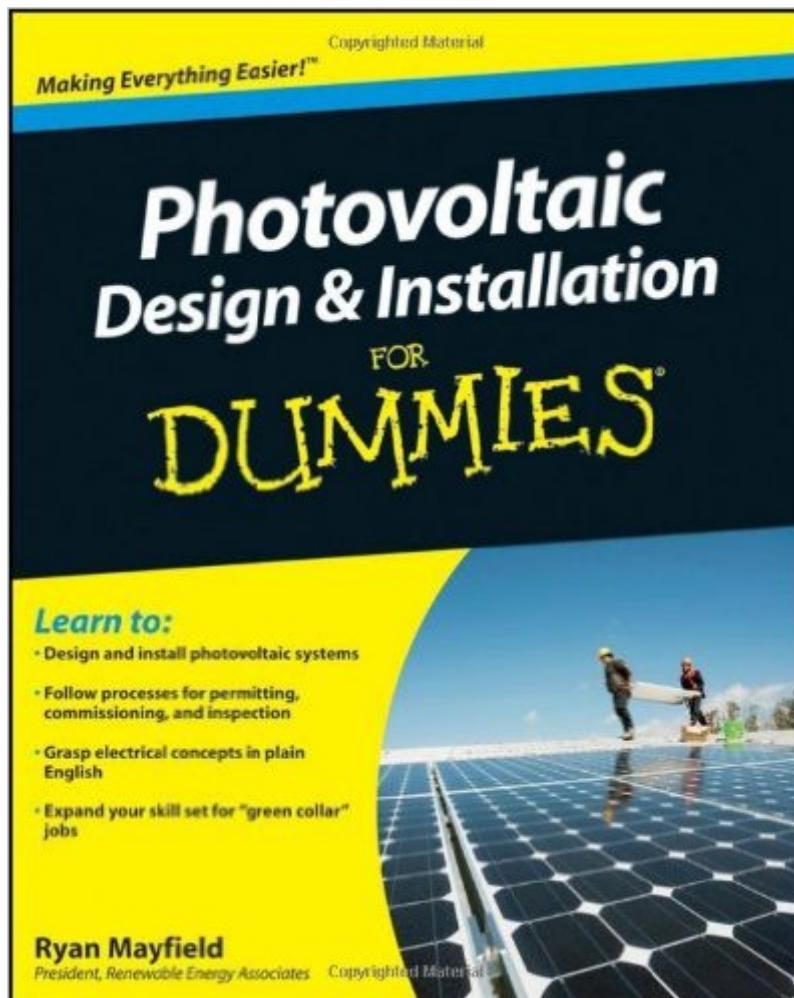


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# Photovoltaic Design And Installation For Dummies



## Synopsis

The fun and easy way to get a grip on photovoltaic design and installation Designing and installing solar panel systems is a trend that continues to grow. With 'green collar' jobs on the rise and homeowners looking for earth-friendly ways to stretch their dollars and lesson their carbon imprint, understanding photovoltaic design and installation is on the rise. Photovoltaic Design & Installation For Dummies gives you a comprehensive overview of the history, physics, design, installation, and operation of home-scale solar-panel systems. You'll also get an introduction to the foundational mathematic and electrical concepts you need to understand and work with photovoltaic systems. Covers all aspects of home-scale solar-power systems Viable resource for professionals, students, and technical laymen Can be used to study for the NABCEP exam Whether you're a building professional looking to expand your business and skills to meet the growing demand for solar power installation or are seeking a career in this rapidly expanding field, Photovoltaic Design & Installation For Dummies has you covered!

## Book Information

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## Customer Reviews

I'm coming at this as a homeowner and generally handy person who's up for a bit of a challenge, wanting to install my own PV system on the roof of my Southern California home. There seem to be a lot of books on solar power that are just kind of informational and theoretical and don't really tell you how to actually plan & install a system in a hands-on practical way. This is one of the few that

actually aims to do that. Looking at a finished PV system sitting on someone's roof, it is kind of deceptively simple. And the nuts and bolts of installation are not that hard, if you can do electrical work, it's not that different from any other kind of electrical equipment installation. BUT. The planning and understanding the components is really quite a challenge. The equipment has very unique properties. You have to analyze your electrical needs, survey the site and it's solar potential, understand the impact of the daily and seasonal workings of the sun and weather, figure out if you want batteries and how much battery power you need, and understand the main components, the solar panels themselves, the charge controller, the inverter, and the circuits and safety provisions. Sizing all the components. Permitting and nuts and bolts hardware installation. The book covers all of this, for the most part, in an organized, disciplined, and reasonably thorough manner. In fact, the book seems to have even higher goals than mine, which is just to plan, install, and manage my own home system. This book is also overtly aimed at those interested in becoming a professional PV installer. You'd be pretty well grounded in that goal having thoroughly absorbed this book, along with some experience actually installing some systems, I think. Is it perfect? No. For one thing, it's a "For Dummies" book so the introduction and organization are, frankly, kind of ridiculously repetitive. He tells us what he's going to tell us about 7 times - not exaggerating - before he actually starts the telling. And then at the start of each chapter, he tells you what he's gonna tell you another two or three times for good measure. Tiresome. This book is not really for dummies wanting to get a little basic information. True dummies, I think, are not going to be installing their own PV systems. It's for people with some ability who want to become experts. There are a few things that could simplify things for a lot of people. Yes, it's good and necessary to be able to analyze someone's electrical needs by going around to each appliance and light and electrical load and checking it's wattage and the owner's usage patterns. But there's an easier and even more accurate way that most solar pros make use of, which is to simply check the past electrical bills for average daily, monthly and seasonal energy consumption. That's not an estimation, that's hard data. And you're gonna want to do this even after you do a load analysis just to double check your work. Sure, newly constructed buildings won't have past electric bills. But a lot of cases certainly will. But absolutely no mention of this tactic is made in the section on load analysis. Really odd. Next, I would have liked to see some representative, carefully chosen, very specific examples of actual completed solar installations to illustrate in concrete terms the main types of installations (grid direct, stand-alone battery, and grid-connected with battery back-up.) How they were sized. The specific components used. Photos of the installations. That would have been immensely helpful in seeing how all the separate steps are brought together to a completed whole. There's nothing like that. This leaves all the separate

chapters on various stages of the planning and execution seeming still theoretical and somewhat abstract. There's not a single actual photo in this book. The diagrams and charts are fairly good. But not enough. On balance, this is still a very good book with most of the critical theory and information in one place that you are absolutely going to need to do a proper PV installation. Are you really going to be ready to immediately plan and build a PV system? Probably not quite. But you'll have a very thorough grasp of what all the considerations are.

This is the best of the half dozen books I have read about solar electricity generation. All the other books I have read teach you about solar systems in general but don't give you enough of the nitty gritty nuts and bolts details to actually put one together. This book literally tells you what nuts and bolts are needed. After having read the book I'm more excited about the info in the book than the prospect of actually being a PV installer. The trade sounds like a challenging if not overwhelming combination of electrician, electrical & electronic engineer, roofer and contractor. All signs indicate that PV has a bright future hardy har so for those who wish to get into the trade this is an excellent place to start and probably all the book learning you'll need.

This book is a great introductory book for someone thinking about taking on a small to medium size solar project, or for someone wanting to install PV on their own home. The book starts from fundamentals and does not assume any prior knowledge. A great book for someone wanting to know the fundamentals of PV.

Really helpful books giving specific and concrete information are surprisingly hard to find. This book provides an abundance of specific information to a person installing their own solar equipment. Written in plain English it covers most of what you need to know from the solar panels to the inverter and every component in-between. A most helpful organization of information clearly separates grid-tied and off-grid information. Site information, planning, component by component equipment, wiring, safety devices, permitting, inspection, maintenance and more. Having read a half dozen books looking for guidance in off-grid solar, this book provides ten times more helpful information than any other book I've purchased. Only "con" is that being a visual guy I'd love to see drawings or photos included with the descriptions. Sadly, there are few.

I got this as a gift for my brother but after reading it, I was thrilled at how much information in it. My 18 yrs old brother just installed his using the guidelines in the book

A must for all Solar PV enthusiasts, takes you back to basics when lost. Lot of stuff for NABCEP entry level exam, I think this book will suffice and also using it with NEC2008 will be helpful in Part II prep of NABCEP.

I'm on page 238 out of 388 so I'm not done reading the whole book yet, but an issue needs to be addressed now. Up until the section "Putting together the details to determine conductor sizing" (pg. 236), I would have given this book 3 stars. I hope it won't turn into 1 star by the time I get to the last page. For all of those who gave this book 5 stars, including the Electrical Engineer, would one of you please explain to me the contents of the above cited section? Figures 13-1 & 13-2 seem to be incorrectly referenced for 2 National Electric Code charts that are not even provided. One chart seems to be both missing and not even referenced. Also, a Step 4 result appears to be incorrectly referenced as Step 3 twice. This section of the book covers conductor sizing. You know, -like as in the most important part of the installation? Or maybe the reason you might need a photovoltaics book? Has the Engineer who has given this book 5 stars looked at this important section, or was he asleep dreaming in quantum mechanics land, dreaming how he could impress somebody or at least himself that his thirst for pn junction knowledge just hasn't been fulfilled by a dummies book intended to teach how to properly wire a system? Has anybody who has actually read this book say someone can successfully size a system's wiring to code based on the information in this book? This book needs a revised edition and this important section needs to be cleaned up and expanded, along with a simplified sentence structure and unnecessarily complex and pointless analogies taken out.

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