

## Forward

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This textbook would have little impact on any designer, engineer or architect unless they have a vision of the future, where the people and inhabitants of the world will need to practice a level of social responsibility. This manuscript does look at the use of resources and how to create efficient designs in areas where the creative person desires. The book promotes as basic principle that the fundamental tenants shown are correct but that good design is a work in progress based upon the imagination of the team and their skill to produce a design that either meets or exceeds the initial idea. The textbook is artful in communication and promotes progressive design abilities, however we find that the majority of technical professionals in school or on the job are just as happy to install out of date technology and machines that have pretty outsides as they would use a less expensive, higher technology solution that require a wide understanding of design, engineering and architecture. This book is written for design students that will for the most part be working professionally during the first one hundred years of the 21<sup>st</sup> century and is a new mandatory course of instruction at a local college. These students are building on experience in mechanics, architectural, electrical and mechanical and they have extensive work in applied math and computer programming.

One of the main writers of this book has extensive experience in building energy efficient homes for almost 30 years, while the other was creating and building efficient electrical devices for one of the largest electronic companies in the world. The two have come together to discuss the topic of energy management, where we create a continual number of related projects that challenge the person who wants to design in a century that is highly energy dependant or where the system is a self contained environment and the designer needs to respect the usage and recycling of resources in order to come to a working solution. As the authors will remark about their experience, remember the statements just as given, they were solutions that worked in the late twentieth century al the way up to today, however as in any engineering endeavor, new ideas are promoted this ten week discussion can begin a lifelong challenge to solve an idea that a student or professional has had planted.

In our experience, experts were individuals who raised their hands or opened their mouths during a meeting to volunteer to complete a challenge. Our successes may have come from solving problems early or where we demonstrated steadfastness through frequent failures, learning from each mistake until a unique product evolves. An expert, like a tree in nature expands with every project which reinforces initial triumphs but broadens our experiences to incorporate other technologies. Our feelings along the paths of energy management, is that everyone present will look at their design problem somewhat differently at the conclusion of this course and secondly, that a handful of those in attendance will make this study the primary focus of their lives. In the 21<sup>st</sup> century, individuals that have the ability to save consumers money and resources will be in demand. This two and half months of study is just a beginning.

Welcome to Energy Management

Charles Robbins