



EDITOR'S CHOICE BOOK REVIEW

By: Carol Hardin

This month, we are reviewing *DIY SOLAR HEATER (Build and Use a Solar Air Heater For Less Than You Think)* by Michael Smart, available at Amazon.com.

As I am writing this, we are experiencing a very real “deep freeze” so this book seems especially appropriate! The author said he wrote the book because of his cold winter days in northern Indiana. He called this “Snowmageddon.” Because his neighbor had built a very makeshift Solar Heater and kept him and several of his neighbors warm during a power outage, he said he learned two important things: 1) the vulnerability of the grid and traditional utility heating and, 2) a way around that vulnerability: independent solar heating.

The first chapter is devoted to understanding solar power. A very interesting fact he begins with: “The sun is powerful....just to bring it into focus, just ONE second of the total energy output of the sun is enough to give energy to all 7 billion people on planet Earth for the next half a million years!” So, we are only limited by the technical capabilities of modern technology and that is enough that a standard solar panel can easily absorb as much as 20% of the light that reaches its panels...enough to completely power a home with extra energy to spare.

The next section of the first chapter helps you with Understanding the Mechanics of Solar Panels and walks you through the materials used to build a solar panel and how that material “performs a kind of energy catabolism at the atomic level breaking down the photons from the sun that strike its surface into usable energy.”

Chapter Two gets you into Building Your Own Solar Air Heater Projects. Placement of the unit is key and usually that is outside the southern-most wall of a home. You start with a plywood box and then you decide which material to use to cover that box: plastic is the cheapest; glass is more durable but more expensive and vinyl is stronger than plastic but cheaper than glass. He advocates for vinyl. He starts with a window box solar air heater and tells you how to make that. Black paint is an important part of this method.

Next, he talks about “Thermo-siphoning Solar Air Panels.” This method works through a series of polycarbonate corrugated panels attached to your base unit. All panels require free flowing air in and out of the units. He says that if the sun is out at all, even on a cold winter day, this type of solar air heater can easily raise the temperature of your home to at least 65 degrees without any other heat source. May not be comfortable but it will keep you from freezing!

His next project is to teach you how to build a Solar Air Water Heater. He says you have two main components: the water heater and the solar collector. You construct them separately but when completed, you join them so precision is a must in this construction.

For fun, he adds how to construct a solar hot dog cooker. Get out your duct tape!!

Next, he gives very complete directions on how to construct a "Soda Solar Passive Heater." If you read that a couple of times (as I did!), you read it right. It is constructed using 50 soda cans! You can construct a very workable solar heater for a small space!

Chapter Three is devoted to Saving Money and Additional Tips and Tricks. Everyone wants to know how long it will take them to reap the benefit of their newly installed solar heater. He says that, with most of these solar heating systems, you will see at least a \$20 decrease in your monthly utility bill and this will increase over time and you always have the advantage of having the capability of staying warm if you are off grid for any reason.

Can you rent a solar heating system? Are you just not that great with your hands and not into DIY? He says you can rent your system and tells you about how to go about doing this. An advantage to this is, if it breaks down, you can usually get it replaced for free!

Another question often asked is if the technology has changed a great deal? Yes and no. More modern solar heaters are not needlessly space consuming and cumbersome and more high tech exterior surfaces are available now. However, the general concept and applications for this technology has been with us for eons and the basic elements for thousands of years.

This book could have used a good editor but the information seems to be simply written and explained so that anyone with any experience in handyman techniques could use it. It is an inexpensive book and well worth choosing if you have interest in going off grid.