Epilogue

> Once you've built the greenhouse of your dreams, the die is cast. You've created the shell of a system that can provide you with great quantities of heat and food, but only if you attend carefully to the realities of its operation. This new-breed passive solar greenhouse needs to be managed by simple daily routines, so that its potential can be fully realized. Solar greenhouses are neither thermally or horticulturally quite like their all-glass ancestors, and they aren't at all like your backyard gardens.
> Thus, solar greenhouse operation begins with an understanding of the nature of the beast and of your responsibilities to it. Once you work out a few routine tasks, your own experience will enable you to refine the procedure for superior results. (Carter 534 Intro).

Thanks for taking time to learn more about passive solar greenhouse design. What we have shared here will (hopefully) provide you with some of the critical knowledge you need to help you, your family and your community become more food secure for generations to come. We practiced a green philosophy in our designs and this text includes our best efforts to save and share what we have learned about PSG design and construction.

SunCatchers are primarily designed for cold weather conditions (northern/southern latitudes and mountains) and may be too much for relatively warm climates. If your greenhouse is located in a relatively warm climate, we recommend you study the design options discussed here and consider adapting your present greenhouse design incorporating those as appropriate. In areas with mild winters, conventional hoop greenhouses can often be modified to incorporate elements of passive solar design such as insulating the north side of the greenhouse and including thermal mass to significantly reduce fossil fuel energy use. You can see a variety of other design options in Chapter IV. This is true off-the-grid technology. Any electrical needs can be met with photovoltaic or small wind systems and extra heat (if needed) should be minimal and can be supplied by a small heater or wood stove etc.!

Malcolm Gladwell tells us it takes about 10,000 hours to master a skill. That number may or may not be true but it speaks to the fact it takes many hours of working with a system before one can start to really understand it. So, learn to "dance" with your SunCatcher: be very hands-on with it, especially in the beginning when you are tracking interior temperatures and humidity levels in response to the weather and seasons. Your SunCatcher can become an escape from the cold winter by providing warm, sunny days in its interior for your enjoyment! The plants like your visits too since you add love and more carbon dioxide for the plants when you exhale into the space.

There is still plenty of research to be done such as determining best designs by cost, by cold weather performance, or any special features (Alaska design, earth bermed, pit, hoop) that may

enhance performance in very cold climates. A comparison of different greenhouse designs and a "best of" composite design could be very useful. There is also a need to develop PCM as a viable greenhouse thermal mass. This can be in the form of greatly improving the present "small packs" technology and/or new PCM filled interconnecting (Lego type) blocks about the size of bricks or cinder blocks made specifically to be used as thermal mass in any greenhouse.

PSG technology is needed now more than ever! Even a simple change from conventional greenhouses to SunCatchers has economic impacts that are direct and far reaching. Their low operating costs make it economical for more people to grow their own food year-round. As the need and costs of construction increase, the value of the investment will increase over time as well. Increasing interest in sustainability and food security create a niche that a SunCatcher fills perfectly. More growers increase the local food supply, creating greater food security, better quality food and more transparency of food production practices. An increase in local food production can bind communities together and increase quality of life in both urban and rural settings and easing food insecurity. In addition, local economies will be more prosperous as food dollars go directly to the farmer – a dollar spent locally goes three times further than a dollar spent at out-of-state or foreign owned grocery stores. Energy is also saved in food production through reduced transportation and packaging, as well as adoption of sustainable growing practices.

Local food production can reach into other realms as well, such as education, health, and local employment opportunities. The abundance of higher quality local food with fewer chemicals and fewer steps between field and plate can help reduce many of today's rising health concerns. A SunCatcher greenhouse can be incorporated into the education system from elementary to college level, serving to teach growing methods to produce food year-round and passive solar greenhouse management. The versatility and adaptability of the SunCatcher to most climates ensure that its benefits and effects can be both local and widespread, as a component (still mostly unexploited) of our future green economy.

On the next page are photos of a couple examples of technologies which have already been developed. We want to work with others to get this technology into wider use, and are open to exploring franchising SunCatcher designs and technologies for the development of SunCatchers of various sizes using different construction methods and materials such as SIP materials, prefab metal carports, and utility sheds to be delivered by flatbed truck to customers, etc.

We do not see this text as an end unto itself but more "A Line to Deviate From" (Ed Greene). There is a lot of useful information on the internet but not all of that information is best practice or even a correct understanding of some concepts. The same is true about design information from the 1970's. Moreover, we didn't have the materials available to us then that we do now. When something is questionable, we suggest you look closely at the (original) data that supports it. Greenhouses using GAHT may be able to maintain growing temperatures at adequate levels, but the fans enabling that do require lots of energy to run 24/7 (which most articles and websites do not mention).

So, using good science and engineering, as well as better materials, we all want to expand this technology and get it right as we move forward.

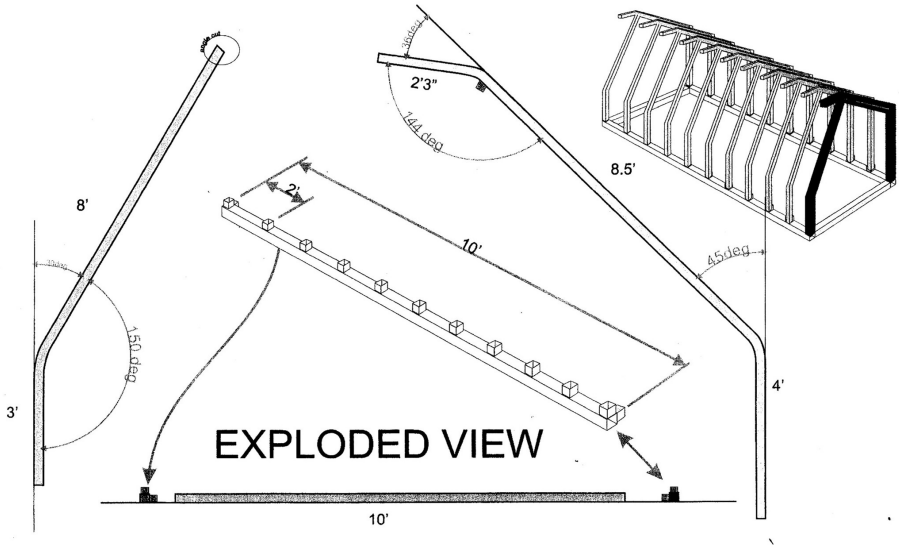




The prefab 'utility' shed SunCatcher can be delivered on the back of a truck.



The 4x4 ft SunCatcher Jr. for people with small backyards, or only a small porch or balcony.



Carport PSG frame should be placed on a good foundation to the frost line and can be finished according to owners own fancy.