The Food and Heat Producing Solar Greenhouse

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INTRODUCTION 7
 Firstï¼Œ a definition is in order because there is some confusion created by the term solar greenhouse.\"
The confusion is understandable because all greenhouses areï¼Œ in factï¼Œ solar. Howeverï¼Œ traditionally
designed greenhouses have rarely been concerned with the most effective use of the sun s energy. Those
described in this book are. We have incorporated four basic elements in the design and operation of each of
our greenhouses: ï¼Œ
 1. The most efficient collection of solar energy.
 2. The storage of solar energy.
 3. The reduction of heat loss during and following collection periods.
 4. Zone layout for the particular light and temperature requirements of various plants.
 Attention to these elements produces the following benefits:
 1. Surplus thermal energy produced in winter can be used

immediately in an adjoining struc-
 ture or stored for later use.
 2. Independence from mechanical heating and cooling devices powered by fossil fuel.
 3. Fresh food and colorful flowers right through the winter.
 This bookï¼Œ the designs and the benefits derived from itï¼Œ all come from a basic concern with people s
relationship to their environment. One basic environmental problem is centered around misuse of energy.
We realized that while many people wish for altemative systemsï¼Œ the success of such systems is dependent
on the individual s commitment to the system coupled with an understanding of what makes it work. And
ï¼Œwe want you to know exactly what s involved in building and maintaining your own solar unit.
 In the following pagesï¼Œ we ve shown methods that can be used to make an appreciable addition to the
quality of your life through a closer involvement with your food chain (fresher and cheaper vegetables)ï¼Œ a
.free source of partial heating for your houseï¼Œ a more realistic integration with the cycles of the sunï¼Œ the
seasons and the weatherï¼Œ and independence from corporate energy and food games. Whether or not you
aetually build a greenhouse depends on many factors: spaceï¼Œ economicsï¼Œ appropriateness to your locationï¼Œ
and determinationï¼Œ to name a few. But even if you don t buildï¼Œ reading this book will enlarge your
understanding of your environment and your relationship with it.
 This book grew out of the Solar Sustenance Project begun in 1974. It was a modest demonstration
project to determine if attached greenhouses could supplement homes in eleven high-elevation locations in
the Rockies with fresh food and heat throughout long and cold winters. The work has evolved into an
educational process that has worldwide relevance. The solar greenhouse is unique in that it can satisfy two
basic human needsï¼Œ food and shelter. With other beneficial side effectsï¼Œ such as water conservation and
distillationï¼Œ the potential for greenhouse application is just beginning to be understood.
 When we began the projectï¼Œ many engineers and architects insisted that our simple greenhouses
wouldn t lengthen the growing season even a week. We were told by others that the 90-degree heat
produced by the units was virtually useless. Fortunatelyï¼Œ we didn t listen to them. Balancing the
negativism of the cynicsï¼Œ we had the support of many people in the field: Keith Haggard and Peter Van
Dresser of Santa Feï¼Œ T.A. Lawand of the Brace Institute in Quebecï¼Œ Dr. Francis Wessling of the University
of New Mexicoï¼Œ and several of the people mentioned in Chapter VIII. Nowï¼Œ competent professionals from
all over the world are eagerly exploring the solar greenhouse fieldï¼Œ and their expertise will certainly
advance the state of the art.
 An important aspect of solar greenhouses is that the principles of design can be applied at any
economic level. The $7.00 recycled lumber and polyethylene greenhouse slapped to the south side of a

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