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Greenhouses

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Perhaps every gardener wants to control their own destiny and that of their plants. They could only do this by controlling the environment. Greenhouses designed to control the environment. Temperature remains the most limiting factor of growing plants in our area. Plants that thrived and did well outdoors during the summer time must succumb to Mother Nature's chills and either go dormant or worse yet die out.

One greenhouse owner has done his best to modify the condition in his own greenhouse is Eldon Kearl. My friendship with him started with our mutual interest in growing plants out of season. While I went on to develop a rather plain and passive design for mine, Eldon decided that he could build a better greenhouse.

Like all good carpenters he started with the frame. Because they are wet and likely to decay he selected redwood because of its natural decay resistance. Designing and locating the greenhouse was not a matter of mere chance but was a scientific process to maximize the light by avoiding the shadows. Although he appeared much like the groundhog looking for his shadow, he managed to select the exact location in the yard where the greenhouse was in full sun even during the winter solstice.

Kearl offers these thoughts on building a greenhouse. "The short and dreary days of winter are a test to gardeners' patience. Memories of abundant flowers, vine ripened tomatoes, and other garden delights, are often more than some can bear. For those brave, impatient, and innovative souls, a greenhouse may provide some relief. I must admit that I one of my dreams ever since I was very young was to have my own greenhouse."

"My dream was to enter another world. I could leave the cold wind and the snow behind and enter into a steamy, tropical paradise. My paradise inside my greenhouse is not exactly steamy nor tropical but it is very useful in collecting heat for the home as well as growing plants. As you envision your tropical paradise, there are a few decisions you need to make. First, are you really committed to having an extra room or an extra hobby or avocation that is going to take considerable time and effort."

Hopefully, your concepts of growing and the time you are willing to devote to it are within reason. Once you have decided whether or not a greenhouse is for you, the next question is how big a greenhouse do you need. Most hobby greenhouse owners recommend that you make it larger than you think because your hobby will soon expand to fit the available space.

The next major choice is where to locate it. Attached greenhouses may offer some solar heating benefits, but the attachment also means that insects and occasionally pesticides may enter your home.

The third major decision is the type of greenhouse covering. Glass is probably the best choice for anything that is connected to the home because of its permanence and durability. Building codes require tempered glass if it is used near the ground or overhead. Many kinds of acrylic are also used for covering a greenhouse. Acrylic is expensive, but is easy to fabricate and will last for 10-15 years.

Fiberglass is very popular for greenhouses but it should not be used if the greenhouse is attached to a home. Fiberglass is flammable if exposed to high temperatures or a flame and should be used for free standing greenhouses or those attached to out buildings. Polyethylene film is the cheapest covering but is also the least durable. It makes a good temporary covering for a simple greenhouse structure for growing in the spring. Polyethylene for greenhouse use must be ultraviolet resistant so that it doesn't suddenly disintegrate in mid winter.

Heating is also another major decision that must be made. Electricity, oil, and gas or propane can all be used. Heating costs vary greatly according to the size of the greenhouse but hobby greenhouse owners I have surveyed have costs that range from \$1-5 per day as they heat their greenhouses.

The amount of heat loss of a given structural design can be calculated so that you can have a reasonably good idea of what the cost on heating the greenhouse are going to be. Your purpose for the greenhouse is also extremely important. If you are just using it to grow a few tomato transplants in the spring, a cold frame or hot bed may be just the answer. Alternatively, if you prefer to have a larger greenhouse that you run year around, you will want to make it a size and shape so that it is convenient for you to get to and utilize.

Greenhouses and other plant growing structures range from small plastic covered coldframes to large climate controlled structures housing full sized trees and landscapes. Time and money are usually the only limitations but our class is designed to cover small, relatively inexpensive structures.

Many common myths abound about building and operating greenhouses. In reading some recent advertisements it seems ridiculously easy to grow all the fresh produce a family would want in a very small greenhouse. The produce would be the very highest quality and the cost would be almost nothing and the extra could feed the neighborhood.

Tomatoes are the most highly promoted and overrated vegetable for greenhouse production. I could name a dozen or more large greenhouse operations in Utah that were built to grow tomatoes. All of these were commercial failures. It is simply too costly to heat a greenhouse warm enough to produce tomatoes and compete with imported vegetables.

Even a very small greenhouse may cost \$30-100 per month to heat it warm enough to grow tomatoes. In addition there are difficult problems with fertilization, pollination, and pest control. Tomatoes are probably one of the most difficult and most expensive crops to produce.

Cool greenhouses are less expensive to operate and can provide a lot of enjoyment. They are kept above freezing, but temperatures are allowed to rise and fall. During the day the sun warms them to a point that a fan may be required to keep from overheating. These cooler greenhouses keep many plants in good condition and are excellent for starting transplants in the spring.

All greenhouses serve as breeding grounds for pests. Conditions that are right for good plant growth also allows pests to multiply rapidly. Inside the greenhouse they are protected against predators and parasites. Carefully inspect any plants brought into the greenhouse and discard any that are badly infested. Pests are real problems so don't let them get started or they may destroy your entire planting.

Permanent greenhouses are not cheap. Additions to an existing home may cost thousands of dollars. Considering a greenhouse from an economic standpoint makes it cheaper to buy the transplants rather than make an extensive capital investment. Comparing the cost to a month in a tropical paradise, it may be less expensive to build, equip, and maintain a greenhouse. It would at least provide a feeling of warm, growing plants during the bleak days of winter.

Pots on the window, a coldframe in the backyard or a large attached greenhouse all have one thing in common. They provide a "green fix" for gardeners cut off from growing plants. Perhaps building or using one of these structures is appealing to you. Attend the upcoming class and find out.

GREENHOUSE HISTORY

The earliest known greenhouse was built somewhere around 30 A.D. for the Roman Emperor Tiberius. At this time, a greenhouse was extremely difficult to build because glass has not yet been invented. This small greenhouse called a specularium was painstakingly fabricated from small, translucent sheets of mica. This greenhouse was built to satisfy the emperors craving for cucumbers out of season.

The first practical greenhouse was designed by a French botanist and constructed in Holland. It was intended to grow tropical plants for medicinal purposes. As greenhouses evolved, they became called Orangeries and Pineries. Pineries were not made to grow pine trees but were made to grow pineapple.

George Washington craved pineapples and ordered a greenhouse pinery built at Mt. Vernon so that he could serve pineapples to his guests. Greenhouses became more and more elaborate and were of course only for the extremely wealthy because glass was considered a luxury of highly taxed. Greenhouses are now thought more of biospheres which are living growing environments where people, other animals, and plants can thrive together.