

## Purchasing a Greenhouse

During the past four decades, the NGMA's structural manufacturers have worked with growers from all over the world. And whether it's at a greenhouse or a trade show, they have found there are some common questions growers ask. So, the NGMA collected the most frequently asked questions about structural, venting/cooling, heating, insect control, curtain systems, environmental controls, glazing, energy conservation, fire safety, chemical safety and electrical, to produce handouts like this one. The questions are basic, the answers simple, but the information should be helpful. So, please read on and feel free to contact any NGMA structural manufacturer for further assistance.

### **What should a grower do first before purchasing a greenhouse?**

The first thing, before purchasing a greenhouse, is to contact the local authorities. Because zoning varies from one county to the next, one greenhouse may have a totally different situation than a greenhouse just across the street. Simply put, each location is different and there is no one answer. While the United States recognizes 50 state governments, there are over 87,000 local governments. The possibilities of code and zoning combinations are endless. Zoning codes and building requirements can be any mix. The laws are becoming stricter and the negative consequences of noncompliance worse. We cannot stress enough the importance of checking with your local authorities before doing anything.

### **What does a greenhouse cost?**

Probably one of the most common questions the association receives is regarding costs. Unfortunately, there is no quick answer to the question. A better question is what would a greenhouse cost that fits your specific needs? Cost is not easily determined because greenhouses vary due to local codes and zoning, the purpose for the greenhouse, its geographical location and future expansion goals.

### **What authorities do I contact before purchasing a greenhouse?**

First check with your zoning authorities for your specific location's setbacks, building material requirements, and allowed businesses. Secondly, talk with the planning commission regarding building codes. Ask them what code body they recognize and for which year. Also determine if stamped and licensed drawings, by an engineer, are required. If applicable, also ask what the wind and snow loads requirements are for a greenhouse. Then check with the fire authorities on what they require for greenhouses. While greenhouses are unique, they often are not treated as such. Find out all their fire codes, specifically sprinkler system and covering requirements. The tough questions should be answered before designing a greenhouse, not after. While these questions may seem overwhelming to the new grower, there is help available through any of the National Greenhouse Manufacturers Association's structural members.

### **What exactly is a non-code house?**

The simplest commercial greenhouse is referred to as a cold frame. Cold frames are designed for wintering-over crops and for shade. They are considered temporary and do not meet codes. Cold frames are very basic, but can have some significant variables. While they are non-code houses, cold frames can still have structural strength as they are built with steel tubing.

### **How do non-code houses vary?**

When growing crop on the floor, sidewall height is not necessary. However, if you're growing crop on benches, sidewall height is very important. Height is also an issue if any overhead equipment is to be hung from the structure.

## **What is a basic greenhouse?**

While there is no such thing as a 'basic' greenhouse, a standard greenhouse requires permits and must be built to local building codes. These greenhouses are the heart of the industry and come in all sizes and shapes. They are not necessarily flashy, but are designed to provide years of efficient and dependable crop protection. These code greenhouses have the added benefit of working well with environmental controls and can stand alone or be gutter-connected.

## **What are the high-end greenhouses?**

The top of the line greenhouses can be just the answer for certain growers. These greenhouses are fully automated using sophisticated controls that open roofs, close vents, survey outside weather, etc. These high-end greenhouses can control any environment to the strictest of margins. Controls have become so finite that a good grower can program and monitor activity and results in any given zone, at any given time. The NGMA's structural members strive to keep up with these technological advances and make them readily available to growers.

## **Do most growers stick with one type of greenhouse?**

No, many growers will have a mix of all levels of greenhouses. They will often integrate different types and styles of greenhouses which enable them to optimize crop quality without compromising economics. Thus a grower must know where the greenhouse will be built, local zoning and codes, weather patterns, and what time of year the crop will grow.

## **Are greenhouses insurable?**

Yes, look into the insurability of a greenhouse before purchasing. Ask whether your insurance company will provide replacement cost coverage for the structure. What perils do they insure? Some companies will only provide a very limited number of insured perils and may exclude those of most concern. Do they offer coverage for plant material and how will they value the crop should there be a loss? Like with purchasing an automobile, insurance information allows you to make an educated decision.

## **What exactly is zoning?**

Zoning is defined as any section or district in a city restricted by law for a particular use like homes, parks, and businesses. Zoning is thus very location oriented. In Santa Fe, New Mexico, a building can be no higher than the Cathedral Tower. In Washington D.C. nothing can be higher than the capitol dome. In small towns and counties, where there is limited manpower, zoning is often outdated or non-existing. A grower that ignores local zoning laws can literally be shut down.

## **Does it matter what materials I build a greenhouse with?**

Yes, zoning also includes building materials. Government regulators can dictate exact specifications for such items as brick, coverings, glass, and what the overall building must look like when erected.

## **What should I look for in a location?**

As with any real estate decision, location is everything. There are actually cases where the location can mean a reduction in code regulations which is referred to as an agricultural reduction. For example a 25% agricultural reduction on a 20# wind load code would mean the greenhouse needs to be only #15. This means less expense for the grower and would affect how a manufacturer would design a greenhouse. Be sure to check with local planning and zoning authorities.

## **Do I need a licensed engineer to stamp finished greenhouse drawings?**

Yes, some states require that a licensed engineer stamp your drawings. If this is a requirement of your state, the engineer must be licensed in that state. An engineer can be licensed in numerous states, not just where they are located. To be licensed they must be tested and /or pay a fee.

## **Should I be concerned about expansion?**

Planning ahead is always beneficial. Be sure to convey to your NGMA greenhouse manufacturer what your future plans for expansion will entail. Placement and types of equipment depend greatly on whether a grower plans on expanding. Most houses can be lengthened or added onto the side with advance planning.

## **Is there a difference between production and retail greenhouses?**

Yes, the codes are very specific as to the usage of a greenhouse with respect to the general public. Fire code issues are an example of one of the major differences. A production house is defined as a greenhouse that is occupied for growing a large number of flowers and plants on a production basis or for research without public access. A retail greenhouse is occupied for growing large numbers of flowers and plants while having general public access for the purposes of viewing and purchasing various products. Included in this category are greenhouses occupied for educational purposes.

## **Do setbacks affect greenhouses?**

Yes, they can, depending on your location. A setback which is more common in larger cities, is the amount of feet from the street or property line a greenhouse must sit to be built. For example, a building may be required to set back 50' from the curb for what they call 'street appeal.' Zoning setbacks are also lot specific and can vary from one lot to another.

## **Are there any fire-code issues with greenhouses?**

Yes, there are fire codes specific to greenhouses and they vary depending on the area. Many growers have elaborate drawings made up only to find out that none of the fire codes have been addressed. It is not uncommon for a retail greenhouse to be required to have a sprinkler system, even though most greenhouse insurance companies do not offer a premium reduction for their installation. Before you invest in drawings, find out what fire codes affect a greenhouse at your location. Fire codes are becoming stricter, particularly for greenhouses that welcome the public. They affect covering selections and square footage limitations. Nothing will bring your building to a halt faster than not meeting a fire code.

## **Does the crop determine the type of greenhouse needed?**

Crop is important when choosing a greenhouse, but seldom does a grower start and stay with the same crop. We often see growers completely change or add to their existing crop line. When it comes to type of crop, make sure your greenhouse is designed to be flexible.

## **Does the NGMA offer any publications regarding greenhouse structures?**

Yes, the NGMA has published a notebook of standards that includes curtain systems, design loads, electrical design, environmental control, glazing, heat loss, heating systems, insect screening, ventilation and cooling. The documents can be downloaded off the NGMA website (NGMA.com) or purchased from the NGMA for \$50 US (includes shipping within the United States).

## **How do I choose a greenhouse manufacturer?**

When choosing a greenhouse manufacturer, look to any of our NGMA structural manufacturer members. All of our structural greenhouse manufacturers promote code compliance and promulgate industry standards that insure code compliance.