NGMA Helpful Hints

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 structures, 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 is 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 Building Official or Authority Having Jurisdiction (AHJ). This is the person responsible for code enforcement where the greenhouse is located. The official may be at the local, county or state level. Ask about the codes governing structures, mechanical and electrical systems, as well as fire prevention and energy conservation. Also check with the local government for zoning restrictions. We cannot stress enough the importance of checking codes and zoning before doing anything.

What types of code and zoning requirements apply to greenhouses?

Zoning requirements may include setbacks from property lines and roads, required building materials, and allowed business types. Codes are often locally adopted versions of model codes, such as those published by the International Code Council®. Ask what code and what code year is locally recognized. Also determine if drawings stamped by a licensed professional engineer are required. Check if there are local wind loads and snow loads specified for greenhouses. Then check on the requirements for fire protection (separation distances, allowed materials, suppression systems, etc.). The tough questions should be answered before design begins, not after. While these questions may seem overwhelming to a new grower, there is help available through any of the NGMA's structural members.

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 exactly are cold frames and high tunnels?

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.

Is sidewall height important?

When growing a crop on the floor, sidewall height is not necessary. However, if you're growing a 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 may require permits and may need to 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 basic greenhouses have the added benefit of working well with environmental controls and can be stand alone or gutter-connected.

What are 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 the growing environment to the strictest of margins. Controls have become so configurable 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 or county restricted by law for a particular use like homes, parks, and businesses. Zoning is thus very location oriented. Zoning rules may have other special criteria. 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. A grower that ignores local zoning laws can literally be shut down.

Does it matter what materials I build a greenhouse with?

Yes, zoning may 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. This is most common for retail garden centers, but can affect other greenhouses

What should I look for in a location?

As with any real estate decision, location is everything. There are cases where the location can mean a reduction in code regulations which is referred to as an agricultural reduction. For example some codes allow reductions in snow and wind loads for agricultural buildings. 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.

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

Yes, some states require that a licensed Professional Engineer (PE) 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. Licensed Professional Engineers meet specific education, experience, and professional development requirements. They design to the local codes and help ensure the safety and performance of your investment.

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.

Do setbacks affect greenhouses?

Yes, they can, depending on your location. A setback which is more common in larger cities, is the distance 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.

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 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.

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 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).

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.

NGMA
National Greenhouse Manufacturers Association

For more information, please contact:
National Greenhouse Manufacturers Association
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